
# The impact of the coronavirus pandemic on the taxi industry in South Africa

**By**

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**Declaration**

I, **Thabo Olehile Zacharia Moeng** declare that

i) The research reported in this dissertation, except where otherwise indicated, is my original research.

ii) This dissertation has not been submitted for any degree or examination at any other university.

iii) This dissertation does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.

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Signed…….

**Acknowledgements**

My research journey exemplifies perseverance and dedication. After succeeding in all modulesat the University of the Free State, I faced significant setbacks when both my first and second appointed supervisors passed away before I could finalise my research report, leading to a lapse of the minimum study period. Undeterred, I re-registered for the same qualification at the University of KwaZulu-Natal in 2020. Dispite being diagnosed with severe depression and anxiety related to the work environment during 2022 and 2023, I continued to pursue my research goal.

I dedicate this research to my late mother- Dimakatso Maria “Kebitsang” Moeng, to my wife- Matseliso, and three daughters (Refilwe, Reabetswe, and Reamogetse), who supported me during the period of my ill health.

I also dedicate this research to the members of the Greater Bloemfontein Taxi Association (GBTA), of which I am a member, Botshabelo Amalgamated Taxi Association (BATA) and Thaba Nchu Long and Short Distance Taxi Association (TLSDTA), and thousands of taxi operators and commuters in South Africa. As a taxi operator, it has always been my passion to play a role in developing the taxi Industry in some way

Taxi operators in South Africa face several challenges, like taxi wars over routes, piracy, bank repossession of minibuses, informality, and non-subsidization. I experienced some of their pains and struggles first-hand as an operator.

**Abstract**

***Key terms include:*** Covid-19, Transport sector, Taxi industry, Unregulated economies, economic and social impact, Policies and subsidisation, South Africa

The overriding purpose of this study was to determine the impact of the Coronavirus (Covid-19) on the South African Taxi Industry. The study draws on a statistical model that put into account the socioeconomic and/or sociodemographic framework of the taxi industry in the country. As such, the study adopted an explorative quantitatve research approach for collecting and analysing the collated data. The use of an explanatory research approach allows the researcher to provide an in-depth evaluation, investigation, understanding and insight analysis about the impact of the Covid-19 on the industry and the current state of the industry post-pandemic. Consequently, a survey research design was used to enrolled 152 participants to participate in the study.

The findings of this study demonstrated how the pandemic exposed the precarious working conditions faced by taxi drivers and taxi marshals. The phenomenon is not new, but for the first time in the speculation of this phenomenon, the current study was able to quantify the extend this phenomenon has on rank marshals and taxi drivers. For example, the descriptive analysis of this study revealed that most of the respondents (92.8%) reported that the taxi industry experienced loss of income during the heat of the pandemic. As for job insecurity being elevated during the pandemic, the results showed that (38.8%) of respondents were neutral about their responses, but (38.8%) were equally in agreement that it was elevated. Despite the descriptive results indicating that many of participants (71%) did not lose their jobs during the pandemic, the analysis revealed that the majority (57.2%) feared losing their businesses and/or jobs during the pandemic. In addition, there was agreement among most respondents (91.5%) that the pandemic resulted in a loss of taxi drivers and operators. Unfortunately, taxi owners and taxi drivers have a long history of exploitative labour arrangements in South Africa's minibus taxi industry, which seems to maximize profits at all costs for taxi owners at the detriment of the rank marshals who are at the lowest rank of the food chain followed by taxi drivers. A lack of formal work contracts was one of the primary reasons for this.

Since minibus taxis operate in the informal sector and do not receive subsidies, it is not possible to implement subsidies within the industry without an accounting system.

Thus, this study revealed that most of the respondents are in agreement that incorporating management, accounting and taxation models in the taxi industry would influence the formalisation of the taxi industry. In this regard, a recovery of the economy and its formalisation will be difficult without a clear economic policy and without a solid transport sector backed by government support.

This entails that those at the lower ends of the food chain will continue to be victims of the precarious nature of the industry with no job security. Therefore, in the post-Covid-19 era, it would be important to realize the importance of transportation for socioeconomic development, to hold strong discussions, to promote public and private participation, to develop strategic directions to promote development and transformation, and to make hard decisions with strong political will.

## List of Acronyms

| | |
|---|---|
| **ANOVA** | Analysis of Variance |
| **BCEA** | Basic Condition of Employment Act |
| **COVID-19** | Coronavirus pandemic |
| **DoT** | Department of Transport |
| **PIS** | Public Interest Score |
| **MBT** | Mini Bus Taxi |
| **NCCC** | National Covid-19 Command Council |
| **OHSA** | Occupational Health and Safety Act |
| **PPE** | Personal Protective Equipment |
| **SANTACO** | South African National Taxi Council |
| **SPSS** | Statistical Package for the Social Sciences |
| **TOLAB** | Transport Operating Licence Administrative Board |
| **UIF** | Unemployment Insurance Fund |
| **UKZN** | University of KwaZulu-Natal |

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# CHAPTER ONE

# INTRODUCTION AND OVERVIEW

## 1.1 BACKGROUND TO THE STUDY

During tough economic times, organisations face declining demand and, as a result, they are faced with operational and financial constraints. In any given society, transport and logistics organisations are linked directly to the state of the economy, and the recessional traits impact the ability to operate effectively. Within the context of South Africa, minibus taxis (the taxi industry) have played a critical role in the South African economy through mobility and have participated in the economic market for decades. In addition to transporting essential workers and consumers, it has also been proven to play an important role in the country's economy since the outbreak of the Covid-19 pandemic. In spite of this importance, little is known about how the Covid-19 virus impacted on this industry during the pandemics.

As a result of Covid-19 restrictions and their economic implications, South African industries were forced to bear a significant financial burden. In order to keep the economy afloat, many companies required their employees to work from home. Some employees saw this shift as a positive one and appreciated the ability to be flexible in their work (Jenkins & Smith, 2021). Others who are caregivers and live with family and extended family find turning their homes into workspaces unbearable and place a strain on their mental health and thereby affecting their productivity (Jenkins & Smith, 2021). There were no schools open, and learning was advised to be done online. Workers in informal sectors, such as street vendors, backroom business owners, and the unemployed, were heavily burdened by the need to feed themselves and their families (Stiegler & Bouchard, 2020). Among them was the minibus taxi industry. Due to its paratransit nature, the industry relies heavily on physical contact with its customers. Due to Covid-19's restrictions on social interaction and travel – fewer people moving around and fewer using minibus taxis – leads to heavy losses in profits.

As part of an effort to improve safety in public transportation, the National Covid-19 Command Council (NCCC) implemented a 50% passenger restriction in March 2020. However, within three months, this was quickly adjusted to 100% despite the lockdown level adjustments. Due to the economic impact of reduced passenger capacity on the industry, full passenger capacity was introduced despite the pandemic in South Africa. It is understandable because this had a negative impact on the public transport sector, including the taxi industry. The reduction in

mobility across multiple segments of the transportation industry was most evident, as several global restrictions (such as border restrictions, travel bans, quarantines and curfews, stay-at-home orders, and closures of various amenities and services) reduced demand for transportation (Abu Rayash & Dincer, 2020). For example, the reduced passenger capacity impacts minibus taxi drivers' responsibility to check-in the day's earnings and owners' ability to pay vehicle instalments, membership fees, and overall expenses. Compared to the Great Recession, these pandemic-induced job losses are higher (Coibion et al., 2020; Nguyen et al., 2020). As a result of this reduction in mobility, the transportation industry suffered. Globally, direct aviation jobs declined by 43%, while total aviation supported jobs declined by 52.5% (Air Transport Action Group, 2020). Unfortunately, it is extremely difficult to produce a job-loss analysis for taxi industry in developing countries due to its informal nature. As such, this study will conduct an industry-level analysis of income loss and unemployment trends as a result of the Covid-19 pandemic, with a focus on the taxi industry in South Africa. To do this, the study leverages monthly income data from the current study's population which contains information from taxi owners, taxi drivers, and taxi ranks marshals working during the pandemic, as well as associated demographic and socio-economic information between April 2023 and May 2023.

## 1.2 RESEARCH PROBLEM STATEMENT

Tourism and business destinations across the globe have been affected by Covid-19, including cultural tourism, mega sports events, religious pilgrimages, safari tours and the transport industry that supports them. There is no doubt that in South Africa, transportation plays a vital role in socioeconomic development. At a time when black South Africans lack economic opportunities, the taxi industry empowers them (McCaul, 1990; Carol, 2006). It traces its roots to the informal sector but is owned mostly by black entrepreneurs (van Dalsen, 2018). Compared to other taxi-transportation systems in the world, the South African taxi industry is particularly unique. There are a number of factors that contribute to the challenge of creating employment in South Africa, from a social, economic, and political perspective (Altman, 2013). This industry enables self-employment, which contributes to the country's economic growth and development. Minibuses offer a cheaper alternative to formalised public transportation for black South African commuters. It is common for South Africans to travel by minibus taxis in metropolitan and suburban areas (Fobosi, 2019a,b).

Prior to Covid-19, many South African households were experiencing lack of income or limited income, along with uncertainty regarding unemployment and job cuts (Wakelin-Theron et al.,

2019), which increased the vulnerability of many of them. As such, most households continue to face the triple challenge of poverty, inequality, and unemployment as a threat to their livelihoods (South African Government, 2020; Ukpere, 2011). As a labour-intensive industry, travel and tourism was hit hard, with many jobs at risk, especially for women, youths, and marginalised groups. Transportation is essential to the growth of any economy. However, during the severe economic lockdown in March 2020, the taxi industry has been subject to massive disruptions – leaving it fighting for survival in an economic downturn. In fact, the taxi industry, which operates in all cities and townships in South Africa, appears to have faced enormous challenges during the lockdowns imposed by the government during the Covid-19 pandemic. Given its self-regulated traits, the impact of the Covid-19 pandemic on this sector may be damaging not only to its direct link to national economy but equally on the livelihoods of some key stakeholders in the industry (e.g taxi owners, taxi drivers, taxi ranks marshals, and the commuters). In addition, there have been major disruptions in the taxi industry, leading to a struggle for survival in light of a severe economic lockdown during the pandemic. In fact, the taxi industry, which operates within the Cities and townships of South African provinces, seems to have faced enormous challenges under the government-imposed restrictions during COVID-19 lockdowns. In an attempt to maintain social distancing, mini-bus taxis were compelled by government not to take full loads of passengers and were limited to operating at 70% capacity during the pandemic lockdown. According to the South African National Taxi Council (SANTANCO), this would see the taxi industry losing about 45% of the taxis over a period of 6 months due to repossessions by banks (Pijoos & Masweneng, 2020). In response to these challenges, taxi fares were increased and nationwide taxi protests occurred, which further burdened low-income communities. In contrast to government regulations, mini-bus taxi operators adhered to SANTACO's call to load at 100% of their capacity during the lockdown period, which was contrary to government regulations requiring a 70% capacity load (eNCA, 2020). This came as the mini-bus taxi business was failing to cope with the loss of income due to the lockdown restrictions imposed.

According to van Dalsen (2018), the South African minibus taxi industry is mostly self-regulatory. The taxi industry also operates on a cash-only basis, with taxi fares unregulated (Shah, 2019). It is up to the taxi driver/owner to determine the route, with no predetermined stops on the way. As far as stopping points are concerned, they are determined by the demands of passengers (Fobosi, 2019a). Particularly on lucrative routes, there is fierce competition for passengers. According to van Dalsen (2018), revenue estimates can only be based on educated

guesses since there is no way to confirm the amount. Regardless, it is estimated that the South African taxi industry generates approximately R50 billion annually.

Furthermore, the largely informal and self-regulated taxi industry does not operate within the parameters of the labour law (Fourie, 2003). There have, however, been renewed calls for regulation of the industry (Shah, 2019). The majority of taxis are in operation very early in the morning until late at night. There are no formal employment structures in the taxi industry, so workers are employed through verbal agreements, with flexible wages. The majority of drivers try to solve their individual problems on their own; therefore, collective action is not required. The taxi industry is privately owned because it is not subsidised by the government. In this way, the industry facilitates exploitative labour practices (van Dalsen, 2018). As such, it is often the case that drivers are unaware of their rights as laid out in the labour laws. Currently, it is not possible to determine how much drivers collect in fares because the whole industry does not accept smartcards as payment. More so, the working conditions of employees within the industry are questionable without compliance with the Occupational Health and Safety Act (OHSA) and the Basic Conditions of Employment Act (BCEA).

There is no denying the importance of the taxi industry in South Africa due to the high unemployment rate. It is therefore imperative that taxi drivers have special skills, such as good communication and interpersonal skills, since they deal with customers from different backgrounds. Also, they must be competent drivers with a thorough understanding of their labour rights, as well as a thorough understanding of the road and traffic systems, and a firm understanding of where they are in relation to geographical location navigation. Hence, as many other authors have tackled this topic (Fobosi, 2019a; Shah, 2019; van Dalsen, 2018; Altman, 2013), the aim of this study is not to define the labour conditions of the industry. This study focuses rather on how the Covid-19 pandemic impacted on the industry given its labour conditions and self-regulatory traits in South Africa.

## 1.3 RESEARCH QUESTIONS

With regard to the problem statement of this study, the following research questions are pertinent and fundamental:

1. How did the Covid-19 pandemic impact on the taxi industry?

2. How efficient was the government support received by the industry during the pandemic?

3. What are some of the policies and structural changes needed to improve the operational and labour relations in the industry?

4. How can Covid-19's impact on the taxi industry be mitigated?

5. What conclusions and recommendations can be formulated for strategic approach towards subsidisation and improving labour relations in the industry?

## 1.4 THE SIGNIFICANCE OF THE STUDY

The main purpose of the study is to thoroughly assess the developments that have taken place in the taxi industry over the years and the impact of Covid-19 in the taxi industry, specifically in the Mangaung Metropolitan Municipality in the Free State Province. The intention is to assess how these developments came about, how they were implemented, and what is the impact thereof in the social economy of South Africa. The study will, therefore, attempt to contribute to the broad knowledge base on the industry by exploring the economic and social influence on the community, the achievements made to date, the academic and future broad spectrum of the industry. The study further presents the evaluation of the assessment of the developments, which the government implemented during the pandemic, and the current impact of Covid-19 in the taxi industry. The current situation suggests that there is a need for a new and different approach to taxi operations and a review of policies and statutes.

The envisaged result of the research highlighted certain important developments that took place and how these developments brought changes in the attitude of the taxi operators, proper control, effective operation, and efficient management systems are implemented to improve service delivery in the industry during the pandemic. The appropriate implementation thereof has ensured that there is compliance with the policies and legislation by taxi operators, drivers, and other staff members involved in the industry. Hence, data produced from this study demonstrate the impact of the Covid-19 pandemic on the taxi industry based on the perspectives of taxi owners, taxi drivers, and taxi ranks marshals in the Free State province of South Africa. Consequently, the results from this study produced new and recent evidence about Covid-19 and its impact on the livelihoods of taxi employees. Thus, the findings of this study are instrumental toward enlightening stakeholders about the social and economic

implications of the current statutes in the industry and how to get the most out of policy transition and government interventions.

## 1.5 AIMS AND OBJECTIVES OF THE STUDY

### 1.5.1 Aim of the study

The prime purpose of this study is to explore the impact of the Covid-19 pandemic on the taxi industry in South Africa.

### 1.5.2 Research Objectives

The specific objectives of this study are:

1. To determine the impact of the Covid-19 pandemic on the taxi industry through the lived experience of taxi owners, taxi drivers and taxi rank marshals in the Free State province.

2. To identify and measures the efficiency of the types of supports the taxi industry received during the pandemic in the Free State province.

3. To identify possible policies and structural changes needed to improve the operational and labour relations in the industry.

4. To identify and provide mechanisms to ameliorate Covid-19's effects on taxis.

5. To formulate conclusions and recommendations for strategic approach towards subsidisation and improving labour relations in the industry.

## 1.6 OUTLINE OF THE DISSERTATION

- *Chapter one*: Presented here are a brief overview of the study, its background and significance, its research problem, its research questions, and its aim and objectives, as well as a summary of the chapter.

- *Chapter two:* In this chapter, the researcher presents an overview of past literature and/or existing knowledge. Covid-19 and its impact on the taxi industry are at the center of this chapter.

- *Chapter three:* In this chapter, the researcher presents the research method that was adopted for this study, which includes the research design, the sampling strategy, the data collection methods, and the data analysis. The chapter also discusses the ethical considerations of this study.

- *Chapter four:* This chapter analysed, interpreted, presented, and discussed the research findings based on the research objectives.

- *Chapter five:* This final chapter presents a summary of the research, conclusions based on major findings, recommendations, and limitations.

## 1.7 CHAPTER SUMMARY

The taxi industry plays an important role in the economic development of South Africa. It should therefore be a national priority to ensure its continued existence. This study contributes to a better understanding of the effects of Covid-19 on the taxi industry in the Free State province in South Africa. As a result of the pandemic outbreak, the taxi industry suffered job losses and severe economic troubles. Although support was extended, it was not enough to meet the challenges facing the taxi industry. There was no training provided to taxi drivers and marshals on how to deal with the crisis from the start.

Thus, the background and introduction to the study are presented in detail in this chapter. The chapter equally outlined the research problem, the significance of the study, and specified the research objectives and questions.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 INTRODUCTION

Public transport continues to be an important part of the economic development of South Africa, and the taxi industry is by far one of the most important parts of the public transport system. Compared to rail and bus, the minibus taxi industry transports by far the most passengers per day. In 2010, a high percentage of trips made in rural areas and intercity areas are conducted by minibus taxis, which account for 65% of 2.5 billion passenger trips annually in urban areas (Department of Transport, 2010). The report further highlighted that approximately 21% of all public transit consists of buses, while 14% consists of trains (Department of Transport, 2010).

As part of its travel survey, Statistics South Africa (Stats SA) gives a breakdown of transport needs and behaviour, assesses attitudes toward transport services, and discusses how South Africans commute to the workplace, to school, and other locations. Today, despite the difficulties of the economy, the industry transports the greatest number of public transport users in the country (Stats SA, 2021). From 42.4 million South Africans in 2013 to 45.0 million in 2020 (Stats SA, 2021), the number of people traveling during the seven days prior to the survey was reported as rising. Although about 17.4 million South Africans walked to their destination in 2020, about 10.7 million South Africans made used of taxis while 6.2 million individuals used a vehicle or truck as a mode of transportation (Stats SA, 2021). Here, most workers (43.5%) used private transportation to get to work, while 35.0% used public transportation. A little more than twenty percent of workers reported walking all the way (20.3%). However, with about 80.2% of workers who used taxis in 2020, the number of workers' trips with public transport is estimated to have decreased in 2020 to 4.7 million trips from 5.4 million trips in 2013 (Stats SA, 2021).

Although the statistics shows that taxis accounted for most of public transport users with 80.2% workers in 2020, the impact of the Covid-19 pandemic in this economy has been negatively affected. Due to an unprecedented decline in demand and revenues caused by the COVID-19 outbreak, public transportation (especially the taxi industry) in South Africa is facing a great challenge. As a result of the COVID-19 pandemic outbreak and its impact on public transportation, the consequences are more than just health risks and service performance. It

also affects financial viability, social equity, and sustainable mobility. In addition, the public transportation sector is at risk of being perceived as a health risk if it does not successfully adapt to post-pandemic conditions. Even though the country is grappling with the idea of social distancing (which challenges the concept of mass public transportation as a whole), recent studies indicates that the used face masks properly, reduces the risk of infection in closed environments such as public transportation vehicles.

This chapter seeks to unravel the impact of the Covid-19 pandemic on public transportation, with a focus on land transportation (especially the taxi industries). This is critically significant given what is ultimately at stake in the country: restoring the ability of public transportation systems to fulfil their social roles. As such, this the chapter began by contextualizing the Taxi industry in South Africa, and thereafter, an examination of Covid-19 impact on public transport system was conducted both locally and international.

## 2.2 THEORETHICAL FRAMEWORK

Due to the nature of the taxi industry in South Africa, this study employed a system theory framework. A system theory is a framework for investigating phenomena holistically from an interdisciplinary perspective (Campus & Campus, 2022). There is a place for system theory in the economy of today, in information systems, in nature, in society, in science, and in any business setting. According to (Mochalin et al., 2017), systems theory describes relationships as being interdependent. A systemic perspective argues that we cannot understand a phenomenon fully by just breaking it down into small pieces and relocating them; we must instead view it holistically to comprehend what is going on (its functioning) (Campus & Campus, 2022).

Similarly, the taxi industry operates as a system (See Section 2.3.2 below). Taxi industry operations involve a group of individual owners, drivers, entrepreneurs, and support structures whose operations are interconnected and interdependent; and whose aim is to grow the industry. Growth depends on how well the system fits in and engages with its existing environment, as well as how much modification it undergoes. As a result of altering, innovating, and transforming the system approach, an integrated structure will ultimately be created that can provide and maintain order (Mochalin et al., 2017). Additionally, it will enable those who work in the transportation industry to secure a better life by preventing

environmental, social and economic degradation and achieving the Sustainable Development Goals of the United Nations.

## 2.3 CONTEXTUALISATION: CONCEPTUALIZING THE TAXI INDUSTRY IN SOUTH AFRICA

Without any doubts, the minibus taxi industry in South Africa remains a critical pillar of the country's public transportation system. Besides being the most widely available, it is also among the most affordable modes of transportation for many South Africans – the majority of which are considered as poor. For this reason, the urban poor rely on it as their main means of transport. Due to these circumstances, the current study critically explores the role that minibus taxis play in South African economic development. The formalisation process must be re-examined in this context, which is also subject to a critical rethinking - a process that was, up until now, viewed as a top-down exercise that did not consider the industry as a whole. Therefore, considering the aim of this study, it is important to discuss the taxi industry in South Africa both in context and conceptually in order to understand the implications of the Covid-19 pandemic outbreak within the industry.

### 2.3.1 The Historical Background of South African Taxi Industry

The taxi industry originated in the late 1970's in order to meet the growing needs of a working urban population of Africans (Fourie, 2003). It is crucial to emphasize that this system emerged illegally in South Africa during Apartheid in the late 1970s. Although this system still operates largely in the informal economy, it was legalized in 1988 and is subject to certain state regulations (Bruun et al., 2015). Despite the intense competition, taxis were perceived as an easy and inexpensive business to start. There was also little regulation in the industry (Fourie, 2003). In South Africa, minibus taxis have long been an integral part of the public transport industry (McCaul, 1990). A large portion of the industry is owned by black people and is structurally located in the informal sector. While this industry is structurally embedded in the informal economy, it is constantly being formalized and informalized. In broad terms, the formalisation of the industry entails post-apartheid state regulation, while the informalisation seeks to reduce and undermine this regulation (Theron, 2010). Regardless, Black South African communities are benefiting from the minibus taxi industry, which offers a cost-effective and decentralised alternative to formalised public transportation (Fabosi, 2016; Karol, 2006).

Since the industry's inception in the country, it has historically been an explorative business model where employers and employees have negotiated exploitative labour contracts which aim to maximize profit at all costs. By minimizing labour costs and disregarding safety regulations and taxes, the informal business model has been sustained (Fabosi, 2016). During the apartheid regime, a black African obtaining a taxi permit was nearly impossible. Historically speaking, the public transport was dominated by government-owned trains and by bus companies that received government subsidies. However, the minibus taxi industry grew rapidly in the early 1980s to the mid-1990s – a community-based industry that did not receive any subsidies. Subsidies to the industry are still a challenge for the Department of Transportation. Nevertheless, since democratic elections in 1994, there have been efforts to formalize or regulate the industry. This entails providing safe and affordable transportation, well-trained drivers, reasonable profits (and not excessive profits), and acceptable employment relationships (Mahlangu, 2002). There are also labour laws in place that seek to regulate the taxi industry in the country, such as 'Sectoral Determination 11: Taxi Sector' (Department of Labour, 2011). Employers who work in the taxi sector fall within the scope of the Sectoral Determination. In the case of drivers, for example, they are expected to work 48 ordinary hours per week, are entitled to overtime income and lunch breaks, and are entitled to annual leave (Department of Labour, 2011). Due to this determination, the taxi industry is subject to regulation regarding minimum wages, hours of work, leave, prohibitions of children being employed or performing child labour, terminations of jobs, as well as other general provisions. However, studies have shown that taxi owners typically sidestep these regulations in an effort to keep labour costs low or avoid them altogether (Fobosi, 2021a, 2020a, 2019; Fobosi & Fobosi, 2019; Mahlangu, 2002).

There are many important factors in understanding the minibus taxi industry, including its dynamic nature, its danger, and the difficulty of understanding the business (Mahlangu, 2002). The organization of work in the industry is extremely complex. It is true that taxi drivers do not know how to exercise their right to work. Minibus taxis are more like roadside hawkers than subsidised buses, as their mode of operation is very decentralised. The taxis owners and drivers function as independent contractors in this industry (Fobosi, 2021a, 2020, 2019; Fobosi & Fobosi, 2019). Taxi drivers make decisions every day about how to run their businesses so that they are able to make the most money. This is very critical since the taxis owners expect their drivers to earn as much money as they can. In comparison to formalized public transport such as trains and buses, the work of taxi drivers is much less structured or regulated.

Taxi work is very different from other industries, so it is no surprise that these provisions do not apply here. The Department of Labour has a difficult time enforcing minimum wages because taxi drivers work maximum hours. In essence, taxi drivers are simply paid on commission. In other words, the taxi industry is a commission-based business. The commission scheme simply means that a taxi operator/owner would say that S/he has to collect a certain amount of money for the day in their pocket, and how the taxi driver makes that amount is their business – suggesting that the taxi drivers decide how much they want to make. Because of the nature of the work in the industry, enforcing the Sectoral Determination is difficult. It is common for taxi operators to say that they are not employers; they work with their brothers. Thus, it is not unusual for taxi operators to hire someone today and then another the following day - such is the labour process in this field. It is just one of the challenges employers' faces in this industry – someone today, then someone else tomorrow.

### 2.3.2 The Taxi Industry Operating Model

Minibus Taxis do not receive government subsidies and are not provided with separate lanes for priority (Bruun et al., 2015). To better understand the operating model of the Minibus Taxi system, it is necessary to unpack its organizational structure (see **Figure 2.1**). As the industry is not represented and governed by one national, unified body that is able to represent and govern it, the organisational structure is complex and hierarchical which may differ across geographical regions in South Africa (Woolf & Joubert, 2013). Here, taxi drivers generally collect the fare from the users. It is most common for drivers not to own the vehicle but are paid per hour by their owners or on a commission basis. In most cases the owner may own one or more taxis. All fares are collected by the owner, who is also responsible for the vehicle maintenance and pays membership fees to the taxi association, which ranges between R50000 to R80000 or 3000 USD to 5000 USD for joining fees (Kerr, 2018). A taxi association manages an intersection, which is an interchange of many taxi routes, where multiple routes converge and interchange. Generally, taxi associations apply to the provincial government for a 10-year operating license, which is given to them and distributed to the taxi drivers, allowing them to legally operate on particular routes. Even though the provincial government grants the operating licenses for specific routes, the routes are actually specified and proposed by taxi associations based on user demand. Suggesting that it is an extremely user-responsive and flexible system since it responds to demand quickly and efficiently. As shown in Figure 2.1, the governing bodies of the taxi associations include the South African National Taxi Council

(SANTACO) and the provincial taxi associations. According to Bruun et al (2015), the taxi system has many operational and management weaknesses, such as the unreliability of the system due to its lack of separate lanes and signal priority in mixed traffic. Secondly, according to Bruun et al (2015), taxi rates are not integrated, thereby discouraging users from making connections. In addition, the authors claim that taxis stop at what they believe are random locations along the road, creating a safety hazard and causing delays.

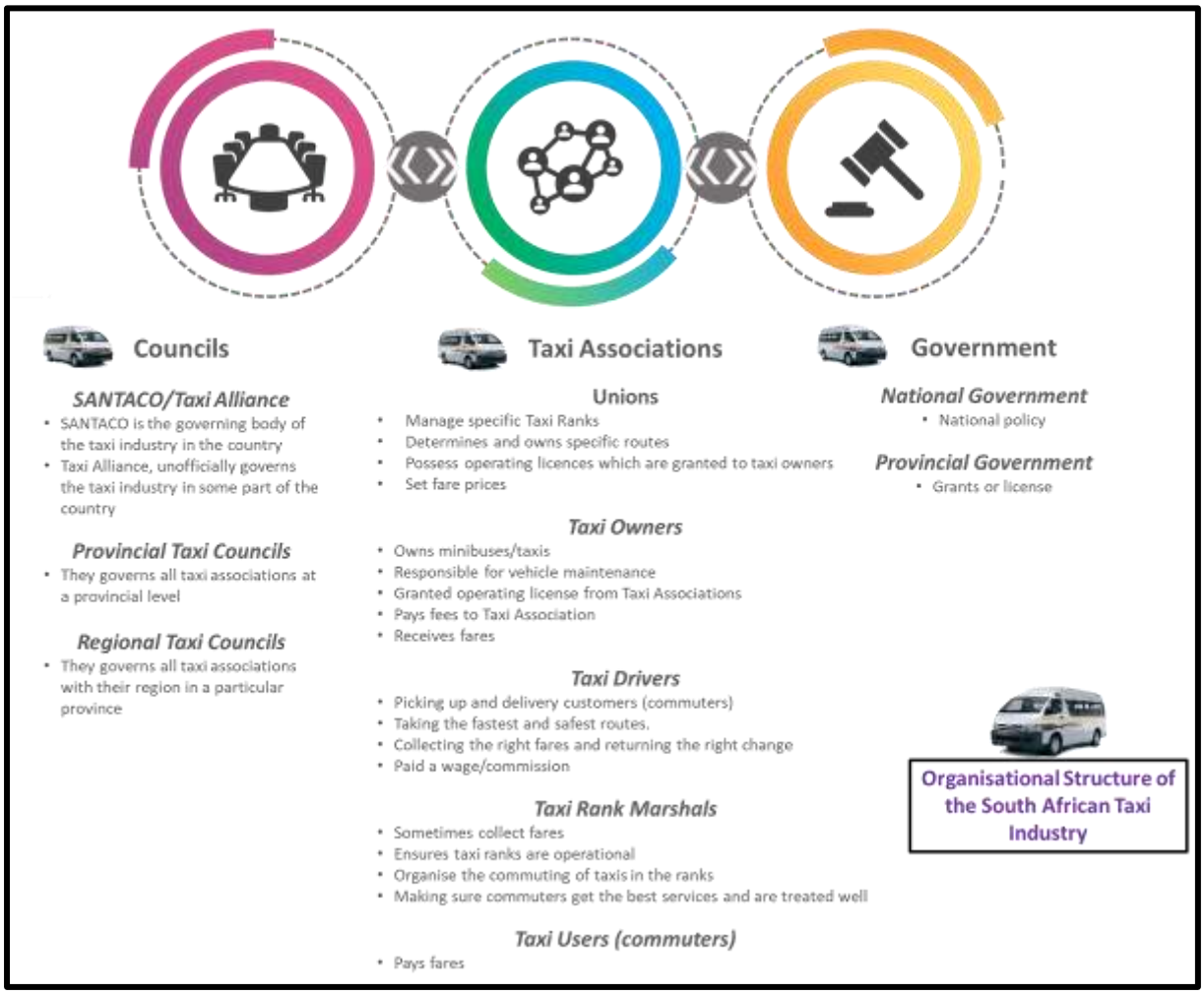


**Figure 2.1:** Shows the Organisational structure of South African Taxi Industry (*Source*: Researcher)

As it currently stands, the taxi industry in South Africa appears to provide both formal and informal services. Even if the distinction between formal and informal economies in the taxi industry can be accepted, there are differing conceptualizations of the relationship between the 'two' economies, whether in South Africa or elsewhere. Due to the wide range of activities it is said to encompass, the conceptual clarity of the term 'formal economy' within the South African

Taxi Industry has been questioned (Christopher Eaglin & Pan Fang, 2021; Motingwe & Brijlai, 2020; Danielak, 2019; Mamabolo & Sebola, 2018; Moloto, 2017; Mhlanga, 2017). Regardless, the role of the public transport system (especial the taxi industry) in the South Africa economy is fundamentally critical. The taxi industry in the country is significantly playing a role toward addressing the issues of inclusivity in the country's economy. Considering the historically discriminatory laws that led to the spatial layout of South African cities, this predicament has us questioning how we can encourage or facilitate relationships between formerly divided actors in the city today. It is therefore crucial to understand the mobility networks and how they affect economic encounters and interactions. By shedding light on Kesselring's (2006:269) concept of the "inner logic" of mobility systems, we may be able to better understand how different mobility systems may allow different urban groups to potentially participate in the country's economy both in space and time. Therefore, for the urban poor and rural poor populations to participate fair in the country's economy, society and politics, adequate transport services and infrastructure are essential (Parnell, 2016). This is very critical because many urban poor reside in the periphery, a fact that makes transit essential to inclusion; poor access to transportation is often directly correlated with social disadvantage (Lucas et al., 2016).

### 2.3.3 The Global South Transport Systems: Facilitating Accessibility and Social Inclusion

Over the past fifty years, accessibility has become a central concept in physical planning (Batty, 2009). As part of economic planning and location theory, accessibility was first introduced in the 1920s. The concept evolved into an important one, particularly in North America, where it became associated with transportation networks and trip distribution patterns (Batty, 2009). One of the first people to define accessibility systematically was Hansen (1959). He focused on the potential opportunities accessibility may provide to socioeconomic interactions, by requiring actors to pay a generalized time/space-based cost. Similarly, Morris, Dumble, and Wigan (1978) analysed the flow of activity from a given location to a particular transportation system, but instead focused on the activities potentially accessible from a particular location. According to Kaufmann et al (2004), among the contextual constraints that affect access are existing transportation networks, as well as activities and services available in particular territories – they emphasize the importance of context in affecting access. In comparison, Dávila et al (2013) highlights that transport accessibility to urban opportunities depends on matters such as costs, safety, and comfort in addition to time and distance.

Social inclusion requires both access to activities and to services (Ignaccolo et al., 2016). In South Africa, historically disadvantaged communities continue to face different barriers towards opportunities and services, this includes economic, physical and geographical barriers. Social exclusion, specifically, is described by Van Wee and Geurs (2011) as a phenomenon that occurs when certain people are denied reasonable opportunities to participate in regional activities they require and want to access in daily life. By ensuring equitable access to public services and urban opportunities, societies are able to reproduce themselves sustainably, which results in an integration of individual actors' behaviours into the collective setting of the society (Bramley et al., 2009 in Waters, 2016). Taking this into consideration, it becomes important that transport infrastructure can facilitate social inclusion by providing access to socioeconomic services and interactions.

In the event that public transport is accessible to the most disadvantaged members of society, it can reduce barriers that support social exclusion. An effective public transport system can allow easy access to services, public spaces, and the city for everyone (Ignaccolo et al., 2016). Research by Rokem and Vaughan (2017) suggested that public transport networks in Jerusalem facilitate the transformation of urban segregation, by bringing separated urban areas together and allowing diverse ethnic groups to be in close contact. In contrast, Gambill's (2018) research highlighted how access to transportation in Cape Town is bound by economic factors and suggested strengthening mobility opportunities could facilitate the creation of a more sustainable city. As shown in a study of Johannesburg and Mexico City's mobility infrastructure by Hidalgo and Mahendra, (2019), access to jobs, services, and people is fundamental to a city's economic vitality and quality of life. In a case study about the positive impact of aerial cable-cars, Dávila (2013) describes the connection of two impoverished, high-density neighbourhoods in Medellin, Colombia, with the rest of the city, via direct aerial connections. This great example of Medellin revealed that public transport can provide access to job opportunities and economic development services, however, many other cities of the global South simply lack this kind of infrastructure, leading to the entry of small-scale operators inside the mobility market, either legally or illegally. Thus, Cervero and Golub (2007) report that informal modes of infrastructure can adapt much more quickly than formalised modes to shifting market demands due to their proximity to poor-connected neighbourhoods. Although the informal sector of transportation has been criticized for increasing traffic congestion, air pollution, and accidents, there is still a "logic of practice", which keeps the sector alive and keeps the city vibrant (Agbiboa, 2018). Therefore, despite the perceived chaos of African cities,

we can learn more about them by studying how an apparently chaotic sector "develops a structure of intelligibility and intentionality" (Agbiboa, 2018: 6), allowing residents to engage in activities that they desire.

### 2.3.4 Income, Employment Creation and the Taxi Industry in South Africa

Black South Africans have been empowered by this industry in large part at a time when little opportunity for economic empowerment was available. South Africans rely on this industry for a myriad of essential services, and it is thus considered a servant of the urban poor (Lucas et al., 2016; Fabosi, 2016, Boudreaux, 2006). Its distribution does more than provide transportation to the urban poor, as it creates jobs for the majority of them, who are currently excluded from getting employment opportunities. Lack of employment (particularly good jobs) is a major cause of poverty, so many people make a living by working in the informal sector or the taxi business. This group is called the 'underclass' by Seekings and Nattrass (2008), as they are not only unemployed, but also unable to find jobs. They lack human capital (the skills and social connections necessary for today's job market), financial capital (money), and social capital (connections). As a result, people who are unemployed are in a disadvantaged position as compared to those who are employed. People from these groups of people are marginalised by society due to their poorer economic status, limited education, and likelihood of living in urban areas (Boudreaux, 2006). Therefore, taxi industry plays a major role in helping such urban marginalized people escape poverty traps. Taxi owners, drivers, taxi rank marshals, cooks at the ranks, car washers, and mechanics are among the people employed by the taxi industry (Boudreaux, 2006). This is very critical because without it, most of these people would probably be struggling to put food on the table, let alone care for their personal needs. However, through the taxi industry in the country, people are gradually able to escape the vicious circle of poverty in urban areas (Lucas et al., 2016; Boudreaux, 2006). There have also been marketplaces of goods and services created by taxi ranks and transition points. Hawkers, food stands, and small informal retailers alike also benefit from the presence of taxi ranks (Boudreaux, 2006). Thus, the taxi industry is responsible for the livelihoods of taxi owners, drivers, ranks marshals, mechanics, hawkers, and others. This is significantly important because the taxi industry has for years been responsible for the livelihoods of millions of South Africa through creating jobs and/or transporting them easily to their job locations (Boudreaux, 2006; Fourie 2005). Therefore, the industry is so vital such that it provide services to the majority of the country’s population.

Providing self-employment opportunities is also a critical part of the taxi industry. Thus, considering the high rate of unemployment, self-employment remains a key survival strategy. Owning a taxi business is a great opportunity for operators/entrepreneurs to work for themselves, to accumulate capital and to grow their business expertise (Lucas et al., 2016; Boudreaux, 2006). In addition to creating wealth in the economy, the taxi industry also provides relatively inexpensive transportation than government-run services. These minibus taxis primarily served commuters from neighbourhoods without public transportation or where public transportation was deemed unreliable into the suburbs or city centers (Boudreaux, 2006). Therefore, the urban and rural poor benefit greatly from this industry (Lucas et al., 2016; Boudreaux, 2006; Fourie 2005). The taxi industry has also boost access to work for the urban poor has enhanced their ability to increase their incomes and improve their quality of life. Additionally, it enables people to access and maintain jobs in parts of cities that were previously inaccessible to them. In the contemporary South Africa, taxi services thus make the difference between being employed or unemployed. By reducing commuting time, the industry has improved urban and rural South Africans' quality of life (Boudreaux, 2006; Fourie 2005).

The industry remains unsubsidized by the government despite accounting for a greater percentage of work travel than trains and buses. From the fares it collects across the country, it earns approximately R90 billion or USD 6.1 billion annually (Competition Commission, 2018). In South Africa, there are around 123 000 taxi associations composed of individual taxi operators. Approximately R39 billion is spent annually on fuel from the industry. According to the Competition Commission, the industry spends about R2 billion on insurance (Competition Commission, 2018). In spite of generating R90 billion in revenue, the industry only pays R5 million in taxes (IOL Reporter, 2021). These amounts include tax collected from the industry's employment income. Despite government efforts, there are still challenges related to the industry's failure to accurately report its income from taxi business. Thus, this is an indication that despites the fact that the industry contributes significantly to the country's economy (despite not receiving government subsidies for operations) only a small proportion of taxi operators disclose income. This means that if any process of formalizing the taxi industry is to succeed, it must consider the above issues. It is especially important for the formalisation process to take into account the labour process within the taxi industry, as well as the links between the formal and informal sectors that are part of the broader South African economy.

## 2.4 COVID-19 IMPLICATIONS AND NEW POLICIES FOR USING PUBLIC TRANSPORTS

The current global pandemic caused by coronavirus rapidly spread because of the hypermobility of our lifestyle, globalization, and connectivity and accessibility of Wuhan, the first epicenter of the Covid-19 Pandemic (Musselwhite et al., 2020). The Covid-19 pandemic has since quickly evolved into a situation with profound effects on travel and lifestyle both locally and worldwide, including a dramatic decline in all forms of transportation services and an increase in telecommuting. The impacts were a result of governmental action (such as travel restrictions and the closure of most businesses) both locally and internationally, as well as individual decisions to refrain from traveling to reduce the risk of contamination and exposure to other people. Urban travel has declined all over the world, but not evenly across all modes of transportation; public transportation has taken the biggest hit, according to survey-based data (Astroza et al. 2020; Molloy et al. 2020). This was sometimes accompanied by a reduced supply of services, and it was exacerbated by the perception that public transportation was more risky than private or personal transportation since it may be impossible or nearly impossible to avoid contact with other passengers. In South Africa, because the taxi industry carried most of the population and largely informal, the minibuses were mostly assumed to pose a huge risk in terms of transmitting the virus because of how taxi ranks were built (Pillay & Scheepers, 2020). Preventing the virus from spreading to high-density areas such as townships and informal settlements, where infrastructure and water are scarce, was clearly crucial. In response, the Department of Transportation suspended some minibus taxi routes in and out of those key areas. Overcrowded trains were also stopped, as well as some other high-risk modes of transportation.

Since transportation had such a high risk of spreading the virus, the South African Department of Transportation (DoT) also introduced several additional measures, including limitations on interprovincial, inter-metro, and inter-district travel. Several taxi ranks were also suspended and closed in areas considered high density and high risk, such that no service was provided in these areas. In the beginning, everyone understood what the Department of Transportation was trying to accomplish. Over time, however, people became impatient with the lengthy measures, and the support began to fade. A balance had to be maintained between economic needs and people's health needs. Inevitably, the lockdown measures are loosened, but letting up will have

a detrimental effect on the virus, and the country's DoT will have to ensure that the virus can be contained.

## 2.5 THE ECONOMIC AND SOCIAL EFFECTS OF COVID-19 IN PUBLIC TRANSPORTATION

The use of public transportation to promote social mobility is an integral part of people's everyday lives around the world (Saif et al., 2019). It impacts people's access to jobs, education, and healthcare most directly, as well as the general state of the economy. In the wake of the Coronavirus pandemic, the government's reliance on the minibus taxi industry to fill the void in public transportation has certainly come to the fore (Fobosi, 2020b,c). In response, the government has declared that this highlights the need for subsidies, which can only be achieved by greater formalisation (Luke, 2020). As a result of the lack of success of formalization in the past, as well as the industry's informal nature and fierce independence, it is still unclear whether such a program is affordable, feasible, or even desirable, considering the history with under subsidisation of public transport services (Luke, 2020). The discussion about subsidizing and regulating minibus taxis leaves untouched the rest of the public transportation system. Since transport is the sector that binds the economy as a whole, it is necessary for it to function, but it is also affected by any changes in economic activity. Thus, in a post-Covid-19 world, the centrality of transport has been highlighted by the restrictions imposed by the Coronavirus disease.

### 2.5.1 Fiscal Adversity

During a matter of weeks, the Covid-19 pandemic became the largest economic crisis for public transportation services in decades. Because of Covid-19, public transportation demand has decreased, and the cost of public transportation has increased. Because of these conditions, various public transportation agencies struggle financially, which puts pressure on the government. In other countries such as Chile, the government has compensated bus operators for 80% of the loss in demand in Santiago (Financiero, 2020). In Sweden, the government transferred 3 billion SEK in order to cover the losses of reduced ticket sales of public transports across the country (Sverigesradio 2020). In South Africa, the Covid -19 pandemic adversely impacts public funding availability since governments must finance a number of social problems (e.g., unemployment, small business bankruptcy risk, hospitals, and health care)

while simultaneously reducing tax revenues (Fobosi, 2021b; Pillay & Scheepers, 2020). As such for funding, public transportation is competing with various other social needs.

A decrease in demand and financial pressure on public transportation providers may result in bankruptcy if they are not rescued due to a decrease in demand and financial pressure. In some countries, public transportation may be supported, while in others, it may not. As a result, public transportation services in low-income and developing countries are usually poorly regulated, lack adequate safety and hygiene standards, and are not subsidized, thereby driving drivers' incomes largely dependent on passenger load (Tirachini 2019; Gwilliam 1999). Therefore, the financial condition of these systems and of those providing this type of public transportation is highly dependent on the duration of the Covid-19 crisis.

It is important to keep in mind that the minibus taxi industry operates differently than other sectors of the public transportation industry when it comes to operating hours. Taxi drivers, for example, work a lot of hours because the essence of the industry dictates how much time they applied to the job. There is no denying that commuting is the primary driver of the taxi industry and, thus, there must be taxis operating for as long as there are commuters to pick up. Browning (2018) notes that when the industry has a lot of commuters, it is considered profitable. However, during the pandemic lockdown, this was not possible. Therefore, even though minibus taxis contribute significantly to South Africa's economy, they face challenges that were exacerbated by the Covid-19 pandemic.

During the Covid-19 pandemic lockdown, a number of taxi operators complained they lost money due to the lockdown (Fobosi, 2021b). Similarly, taxi drivers were complaining that they were now generating less money through fares (noting that each day they paid taxi owners part of the collected fares and kept the rest for petrol) (Fobosi, 2021b). A strict lockdown imposed on South Africa in March 2020 had a dramatic effect in the minibus taxi industry. Taxi minibuses were limited in the number of passengers they could take and the number of hours they could operate. Despite difficult economic conditions such as Covid-19 and unemployment, taxi drivers remain excluded from such employment benefits as UIF (Fobosi, 2021b). Their precarious employment conditions are made clear by the fact that taxi marshals and drivers do not receive benefits since the minibus taxi industry remains undeveloped (Fobosi, 2021b).

In addition, during the lockdown, some taxi operators are unable to repay their loans to banks and may be forced to repossess their taxis (Nomjana, 2020). While government has allocated R1.135 billion in relief package as a once-off ex gratia payment for taxi operators (Nomjana, 2020), SANTACO has urged government to increase the amount to avoid shutdowns. Considering the lack of government support for the industry in the past, it is understandable that the industry received limited support from the government during the Covid-19 lockdown. As such, the industry has been neglected for too long (Mhlangu, 2002), resulting in precarious circumstances. The industry receives no operational subsidies, a situation that is difficult for the government to change due to the informal nature of the sector (Fobosi, 2021b). There is a possibility that government subsidies can be provided for the industry, however the formalization process has been problematic. My assessment is that the industry leaders should consider the advantages of the formalization process (which includes, among other things, subsidizing the industry).

### 2.5.2 Covid-19 Pandemic and Precarity in the South African Taxi Industry

Even though minibus taxis make a good contribution to South Africa's economy, the Covid-19 pandemic and/or the pandemic lockdown have posed challenges to the industry. A variety of industries, including the taxi industry, were disrupted by the virus and lockdown. During Covid-19, public transportation was at the forefront of the transportation discussion, with taxis dominating the news during this era. For taxi commuters, maintaining social distance and reducing the time spent in confined spaces is almost impossible, as distance, dose, and dispersion are major factors in the spread of the virus (Luke, 2020). There have been complaints from taxi operators that they have lost profit due to the lockdown (Fobosi, 2021b). Taxi drivers also complained about not earning enough money through taxi fares. The recent pandemic revealed that working conditions continue to be precarious for taxi drivers and taxi marshals (Fobosi, 2021b). However, these conditions are not new. Since the advent of minibus taxis in South Africa, the taxi industry has been characterized by exploitative labour agreements between taxi drivers and owners, which seem to maximize profits at any expense. Mahlangu (2002) attributes this to the lack of formalized work contracts. By lowering labour costs and disregarding safety in general, the informal way of doing business was maintained. As such, the Basic Conditions of Employment Act (Mmadi, 2012) does not apply to taxi drivers because they are subjected to poor working conditions. For example, this can be seen in the quota system that still exist in the industry. The concept of quota systems implies that taxi owners set

a deadline that must be reached by taxi drivers by the evening, and the drivers are forced to meet the deadline at the risk of being dismissed if they fail to meet the target (Mmadi, 2012). Consequently, taxi drivers are overworked, putting their own lives, passengers' lives, and road users' lives at risk.

In minibus taxis, research suggests that most business operations and activities are informal and unregulated. In this industry, there is a network of relationships between taxi drivers, taxi owners, rank marshals, taxi users, government, vehicle manufacturers, and other related companies (Selekane, 2014). Covid-19 and the subsequent national lockdown (from level 5 to 1) disrupted the operations of the industry (like other businesses). Through it all, the government regulated how many passengers a minibus taxi could carry, and how many hours it could operate (Fobosi, 2021b). Unfortunately, the Unemployment Insurance Fund (UIF) does not apply to taxi drivers in times of financial hardship such as Covid-19 and unemployment. As such, taxi drivers and taxi marshals' precarious employment conditions are exacerbated by the fact that they do not receive benefits, since the minibus taxi industry remains neglected (Fobosi, 2021b). The impact of the pandemic lockdown on the taxi industry in South Africa has even caused some taxi operators to be unable to repay their taxis to the banks during the lockdown, and as a result face the possibility of having their taxis repossessed (Fobosi, 2021b). A once-off ex gratia payment of R1.135 billion was made to taxi operators as part of the government's relief package (Nomjana, 2020). However, the South African National Taxi Council urged government to increase the relief money in order to avoid a shutdown. Because the industry has a long history of lacking financial support from the government, this is understandable. This also highlights that precarity prevails in the taxi industry because of its precarious job conditions and lack of regulation.

Minibus taxi drivers are placed in a position of precarity because of the nature of their work. The result is that taxi drivers are subjected to poor working conditions that do not conform with the Basic Conditions of Employment Act (Mmadi, 2012). A good example of this is the quota system (where it still exists). Quote systems imply that taxi owners set deadlines for taxi drivers to meet by the evening, and taxi drivers are put under intense pressure to meet their targets or risks being fired if they fail to meet them (Mmadi, 2012). The result is overworked taxi drivers putting their own lives, passengers' lives, and the lives of other road users at risk. Furthermore, in the industry, precarity is characterized by a loss of labour market security in many forms. In their opinion, Suliman and Weber define precarity as a “specific condition of insecurity created

by the spatial and temporal restructuring of the relationship between production, politics, and life" (2019:528). As a result of precarious working conditions in the minibus taxi industry, the precariat is subject to the following types of insecurity: insecure jobs due to either a lack of work or a lack of work; insecure living conditions due to low incomes; and insecure representation due to the absence of unions (Paret, 2013). Since there is no job security for black workers in South Africa, this emphasizes the precarious nature of their work in the taxi industry, which is predominantly characterised by blacks. As an alternative to job security, employment security is regarded as a form of security that is mostly suited to a flexible labour market. Employment security refers to easy access to employment in every stage of life, as opposed to job security, which refers to staying in the same job with the same employer (Fobosi, 2021b). In a study of Brazilian taxi drivers' work ability and quality of life, Sanchez et al (2019:1) claim that "urban transport drivers, specifically taxi and motorcycle taxi drivers, are exposed to particular environmental, societal, and health situations related to their occupation". Similarly, minibus taxi drivers in South Africa experience precarious working conditions similar to those found at taxi ranks.

South Africa's history of marginalization and inequality has deep roots in the sense of precarity experienced by taxi drivers, taxi marshals, and informal traders. Similarly, to Deshingkar (2018, p. 5), who examined precarity among migrant workers, this paper examines precarity as a result of workplace dynamics in taxi ranks. Taxi ranks are risky places to work due to precarious conditions. A taxi driver or taxi marshal is defined by a precarious existence or insecure working relationships in terms of what Giddens (1991) called "ontological insecurity". The precariat is characterized primarily by irregular schedules and varying hours of work (Eichhorst & Tobsch, 2017). Taxi drivers, for example, must further deal with both of these issues and also depend on the availability of passengers during the Covid-19 pandemic lockdown. Generally, the risk of precariousness is higher for workers without contracts (such as rank marshals and taxi drivers), as well as for temporary or flexible workers. It is also a characteristic feature of precarious work that contracts are uncertain in their duration. Thus, when workers are subjected to low wages, job insecurity, stress, ill health, limited career development and training, and low collective rights, there is a high likelihood of precariousness. Therefore, precarious work can be characterized by the following four conditions: 1) low pay; 2) poor protection from employment terminations; 3) a lack of benefits; and 4) a lack of access for workers to exercise their rights (such as union membership) (Bhorat et al., 2016).

Additionally, the minibus taxi industry varies from other sectors in the public transport industry in terms of operating hours. Taxi drivers' hours of employment are defined by the essence of the sector. There is no question that commuters are the most important part of the taxi industry and therefore, taxis must keep operating as long as commuters need to be picked up. Therefore, the industry is deemed profitable when commuters are present (Browning, 2018). Due to this fact, it is important to remember that most taxis stop picking up commuters after 6pm, since there are fewer commuters after that time. This is primarily dependent on the way payments are handled. The quota system also ensures that the work is dictated by the daily target of the driver's income, and that the remainder is pocketed when the target is met. By using the percentage method, the driver is paid a percentage of their daily take – no less than 20 percent and no more than 30 percent (Fobosi, 2021b). Either way, this is indicating that taxi drivers today receive compensation for the days they work on a "earn as you go" basis (Imaniranzi, 2015). This results in taxi drivers working on a regular schedule. More than eight days of consecutive work are expected of taxi drivers and taxi marshals.

There is no doubt that even though the minibus taxi industry contributes greatly to South Africa's economy, it faces challenges that were exacerbated by the Covid-19 pandemic (Fobosi, 2021b). In addition to disrupting economic activity in many industries, the virus and lockdown also affected the minibus taxi industry. Their livelihood was abruptly disrupted. Many taxi operators complained about losing profit due to the lockdown during the lockdown (Fobosi, 2021b). Additionally, taxi drivers complained that they were not making as much money through taxi fares as they used to (Fobosi, 2021b). The pandemic revealed that taxi drivers and taxi marshals are still faced with precarious working conditions. This is not a new phenomenon. There is a long history of exploitative labour arrangements between taxi owners and taxi drivers in South Africa's minibus taxi industry, which appears to maximize profit at all costs. One of the primary reasons for this was the lack of formalized work contracts (Mahlangu, 2002). By lowering labour costs and disregarding safety in general, the informal way of doing business was maintained. Hence, even though the industry does not currently receive subsidies, the implementation of subsidies within the industry requires an accounting system, which is not possible in the informal industry where minibus taxis operate. Therefore, the recovery of the economy will be difficult without a clear economic policy and without a sound transport sector to support it. Post-Covid-19 would be the best time to realize the value of transport for socio-economic success, to hold strong discussions, to encourage public and private participation, as

well as develop strategic directions that foster development and transformation, and to make hard decisions with strong political will.

### 2.5.3 Public Transport and Social Equity during Covid-19

According to data from multiple countries, including the United States, Canada, and Chile, working from home has largely been a privilege of higher income jobs during the Covid-19 crisis (Valentino-DeVries et al., 2020; Tanguay & Lachapelle, 2020; Astroza et al., 2020). As such, findings of a study conducted in developed countries revealed that the ramifications of the Covid-19 pandemic on the labour market disproportionately affect workers with less education and women (Adams-Prassl et al., 2020). Their findings are based on a survey data collected from 20000 respondents in United States, Germany and the United Kingdom. Therefore, because countries response to the pandemic crisis differently in their level of resourcefulness, the long-term impacts of the pandemic crisis will most likely exacerbate disparities within countries and between countries (The Economist 2020). In this light, the idea that public transportation could be used for social integration instead of social segregation could seems further away than ever for South Africa. Central to these arguments, findings of a study that evaluate the impact of the Covid-19 pandemic on South Africans livelihood during the pandemic lockdown revealed that Covid-19 exacerbated the country's poverty and vulnerability in that it was accompanied by severe Level 5 lockdown regulations that prevented low-income households from earning a living (Simon & Khambule, 2021). The study also revealed that households with low incomes, particularly those with the least education, Black Africans, women and marginalized ones, experienced an unequal socioeconomic impact during the pandemic lockdown (Simon & Khambule, 2021).

As a result of the Covid-19 pandemic, public transportation has been abandoned, but not uniformly. Middle-and high-income groups have abandoned public transportation more than lower-income groups. In a recent study that compared trips made in Santiago in the last week prior to the Corona virus outbreak to the first week after nationwide measures were taken to contain the outbreak in March 2020, revealed that people from higher-income households were the most likely to stop using public transportation. People with the lowest incomes reduced trips on public transportation between 30% and 40%, whereas those with the highest incomes reduced trips by over 70% (Tirachini et al., 2020). As these figures indicate, those who stop using public transportation are mainly those who have the choice to do so – those who work from home to save money on transportation or shop online for convenience – and those who

continue to use it are primarily those with lower incomes. It is likely that some degree of variation in travel behaviour among different groups will persist during the post-crisis period. Therefore, improving public transportation is of major importance to ensuring social equity today, more than ever before.

## 2.6 CHAPTER SUMMARY

Due to the lack of state strategic intervention in the South African taxi industry, the formalization process remains unachievable. Precarious working conditions persist in the industry, which renders it difficult to provide service to the public in trying times such as the Covid-19 pandemic. Consequently, during the pandemic lockdown, taxi drivers and taxi marshals are excluded from employment-based benefits such as the Unemployment Insurance Fund. Because of this, it is clear that government plans to improve public transportation effectively exclude the minibus taxi industry. Thus, from the perspectives of this study's literature review, what is needed for the industry transformation to be successful is the taxi industry's willingness to change and state intervention. This is critical because developing the public transport system in South Africa is of upmost importance.

With the provision of subsidised public transport services, the integration of the industry into a larger public transport network may offer new opportunities. Therefore, the industry's chance of receiving government subsidies depends on whether or not it changes its business model. Since informal workers and their households had to earn a living on a daily basis, the taxi industry in South Africa is especially vulnerable to the pandemic and its associated lockdown measures. However, the fact that the industry is considered informal also made it difficult for governments to provide targeted economic relief. To prevent a persistent deepening of existing vulnerabilities and labour market inequalities, this chapter point to a continued need for effective strategies to address the taxi industry business model and the livelihood needs of those in the industry and as well as the urban poor population, especially women and those operating in the informal sector.

# CHAPTER THREE

# RESEARCH METHODOLOGY AND DESIGN

## 3.1 INTRODUCTION

Previous chapters have discussed the key research issues and theoretical status of the identified problems, which have provided a foundation for this study. Through this chapter, however, the research questions and objectives of this study are presented effectively from a methodological perspective. A major focus of this chapter is therefore to describe how the researcher conducted these analyses. It is generally accepted that research is characterised by systematic data collection and analysis with a clear purpose (Bless et al., 2015; Kumar, 2014; Creswell, 2013; Brink et al., 2012; McMillan & Schumacher, 2010). The definition above, however, is somewhat general. The reason for this is that researchers employ several techniques and/or methods in order to investigate a problem or question. As such, research methods serve as the means by which data are collected and analysed by researchers. They have historically been used for acquiring, producing, and/or constructing reliable and valid knowledge. McMillan and Schumacher (2010) make a compelling case for the concept of a research methodology as a method for generating and analysing data relevant to a particular research question.

With this in mind, this chapter presents and explains the rationale for using a quantitative approach for this study. Accordingly, the chapter explains the methodology employed in this study to address the research questions, thereby achieving the study's objectives. The chapter begins by restating the research study's objectives and questions, introducing a conceptual framework of quantitative research, and describing the study's design. Similarly, the researcher explains and justify the research methods used for the study. Also included in the chapter are descriptions, identifications, and justifications of the research population, sampling technique, sample size, data collection, and ethical considerations. As well as discussing the research instruments, the chapter discusses their reliability and validity. In addition, the analysis of the collected data is explained in this chapter. In summary, the essence of this chapter is to outline the systematic and methodical approach that is considered essential to reaching the objectives of this study, and to provide empirical responses to the research questions.

## 3.2 RESEARCH OBJECTIVES

Even though the objectives of this study have been outlined in chapter one, a restatement is deemed necessary to evaluate these objectives in the context of this study's research methods. As Creswell (2014) puts it, a research methodology is a guide that enables the researcher to accomplish the objectives of the study. Similarly, Sekaran and Bougie (2016) emphasize the importance of research design towards achieving the objectives of a study. Therefore, the main purpose of this study is to examine the impact of Covid-19 pandemic on the taxi industry in the Free State province of South Africa. Specifically, the project aims to:

1 To determine the impact of the Covid-19 pandemic on the taxi industry through the lived experience of taxi owners, taxi drivers and taxi rank marshals in the Free State province.

2 To identify and measures the efficiency of the types of supports the taxi industry received during the pandemic in the Free State province.

3 To identify possible policies and structural changes needed to improve the operational and labour relations in the industry.

4 To identify and provide mechanisms to ameliorate Covid-19's effects on taxis.

5 To formulate conclusions and recommendations for strategic approach towards subsidisation and improving labour relations in the industry.

## 3.3 RESEARCH APPROACH AND DESIGN

Neuman (2013) defines a research design as the process of collecting, measuring, and analysing research data. Also known as “strategies of inquiry,” research designs are developed to answer a research question (Creswell, 2013). In this way, research designs aim to maximise control over factors that may affect the validity of findings (Grove et al., 2013). As such, depending on the research question, researchers can collect, measure, and analyse data using qualitative, quantitative, or mixed methods. Ultimately, the choice of a research design depends on the research question. Regardless of the chosen researcher design, every research approach involves three elements: data collection, data analysis, and data interpretation, Creswell (2014) notes. To drive the research design and/or approach of this study, the following research questions were fundamental:

1. How did the Covid-19 pandemic impact on the taxi industry?
2. How efficient was the government support received by the industry during the pandemic?
3. What are some of the policies and structural changes needed to improve the operational and labour relations in the industry?
4. How can Covid-19's impact on the taxi industry be mitigated?
5. What conclusions and recommendations can be formulated for strategic approach towards subsidisation and improving labour relations in the industry?

### 3.3.1 Research Approach

Considering the study's research questions, the researcher deems it is appropriate to collect data using a cross-sectional quantitative research design. A cross-sectional research approach allows the researcher to gain a deeper understanding of the factors that impact on the taxi industry in South Africa regarding employees' livelihoods. This approach allows quantitative research to be conducted without worrying about factors that might affect the results' rationality (Bhattacherjee, 2012). Accordingly, the chosen method of research makes sense since it enables the researcher to evaluate how the study's results compare with those from previous studies. In this case, a quantitative approach emphasises measuring and describing phenomena objectively (McMillan & Schumacher, 2010). By utilizing numbers, mathematical models, structure, and control, the selected approach maximises objectivity. By collating numerical data, the method further explains phenomena using statistical and/or mathematical methods (Tolmie et al., 2011). This is why quantitative research designs are well-structured, purposeful, and specific. As a result of incorporating these elements, research findings have a higher degree of validity and generalisability (Kumar, 2014). As such, methods used in quantitative research differ from those used in qualitative and mixed methods research. The use of quantitative methods allows for precise and explicit analysis, which is essential and justified in this study. Using this method, the researcher quantified differences and similarities within the target population or study group, depending on the research objectives.

A cross-sectional study involves collecting data from a large number of individuals at a certain point in time (Thomas, 2020a). In this case, cross-sectional research observes variables without influencing them. Cross-sectional studies are used in economics, psychology, medicine, epidemiology, and other social sciences (Thomas, 2020a). A cross-sectional analysis can, for instance, examine the empirical relationship between economic variables over time. Research in microeconomics may focus on household expenditures and incomes. In macroeconomics, price levels or GDP may be compared inter-country. In this context, econometric models include simple multiple regression models, censored regression models and multiple choice models. Consequently, a cross-sectional empirical survey was used to conduct this study. Factors that influence behaviour are commonly examined using cross-sectional observations. In a cross-sectional study, data are collected over a limited time period in order to provide a snapshot of the process under study. In essence, cross-sectional designs offer several advantages, including significant savings in time and money (Ruspini, 1999).

In addition to analysing cause-and-effect relationships between variables, quantitative research is also based on scientific theories and models (Creswell, 2013; Burns & Grove, 1993). As an example, Bless et al (2015) argue that quantitative research involves analysing numeric data collected by structured instruments. Because of this, the data analysis techniques used in this study are well suited to quantitative approaches. The purpose of this section is primarily to inform the reader about the methodological approach taken to study the problem or answer the research question (Brink et al., 2012). Due to its descriptive and exploratory nature, this study aims to describe and explore the impact of the pandemic on the taxi industry in the South African transport sector.

### 3.3.2 Research Design

According to Creswell (2013), a research design determines how data will be collected and analysed in order to meet the study's objectives. Out of several available research designs, this study used a survey research design. This is simply because a survey design can be used to describe large populations that are hard to observe directly (Mouton, 1996). In other words, survey research involves collecting and analysing data from a sample of people and items that are representative of the general population.

Survey research focuses on a small portion of the population, but its results are expected to apply to the entire population (Nworgu, 1991). As a result, survey research is justified simply

because it is a systematic method of collecting data from a population or target population to be used by researchers in analysing, exploring, experimenting, explaining, and comparing attributes amongst items within a population (Neuman, 2013). Furthermore, survey research was used to accurately portray the characteristics of the study group, including their behaviour, abilities, beliefs, socioeconomic status, and job characteristics.

## 3.4 POPULATION AND SAMPLING

Research populations are defined as the complete set of participants, elements, objects, or substances that meet the criteria for a research sample (Sekeran & Bougie, 2016). Sampling, on the other hand, refers to the process of recruiting or selecting respondents from a study population or target population (Cohen et al., 2017). According to Cohen et al (2017), sampling is directly related to the definition of the study's population, and further states that the reliability and credibility of a study is not only determined by the methodology employed and the instruments used, but also by its sampling strategy. Therefore, a sample size can be viewed as a representative of a whole population, whose characteristics can be applied to a larger group. By definition, sampling is the selection of a subset of the population that represents the accessible population.

### 3.4.1 Description of the population

This study was predominantly conducted within the Mangaung Metropolitan Municipality. The taxi industry is largely responsible for transporting customers within and outside the Mangaung Metropolitan Municipality, with a combine workforce of probably over 1500 taxi drivers and taxi ranks marshals operating in the Mangaung Metropolitan Municipality. Here, the exact total workforce of taxi industry the Mangaung Metropolitan Municipality is difficult to estimates due to the informal nature of the industry. Regardless, the population for this study consist of all taxi owners, taxi drivers and taxi ranks marshals operating in the Free State, while the target population for this study comprises of all the taxi owners, taxi drivers and taxi ranks marshals operating in the Mangaung Metropolitan Municipality of the Free State province.

### 3.4.2 Description of the sample

In estimating the prevalence of the outcomes of interest, the researcher assumed a 95% confidence interval of 1.96 and a margin of error of 5% – given the unknown target population size. Using these statistical parameters, a sample size of approximately 163 taxi industry

personnel was needed for the study. Consequently, 163 respondents were recruited to take part in the study. Therefore, using a random sampling technique, 163 respondents were recruited to participate in the study in Free State from the total target population. This means that using simple random sample method, 163 respondents from the total target population of taxi personnel in the Mangaung Metropolitan Municipality were selected.

In a simple random sample, a subset of the population is selected at random (Thomas, 2020b). Compared with other probability sampling methods, simple random selection requires the least amount of prior knowledge of the population (Thomas, 2020b). Using randomisation in this sample provided a high level of internal validity and external validity (Thomas, 2020b). As a result, this study used a random sampling method, so each participant had an equal chance of being chosen. This is very critical because simple random sampling method can also be used in statistical inferences to infer data about a population. In this way, it improves internal validity by reducing the influence of potential confounding variables (Thomas, 2020b). Furthermore, a simple random sample, if large enough, has good external validity: it reflects the characteristics of the population as a whole. However, simple random sampling can be difficult to implement.

## 3.5 QUESTIONNAIRE DESIGN: THE STUDY INSTRUMENT

The researcher chose a questionnaire to facilitate the collection of data for this study. Research instruments can include written questionnaires, phone surveys, and online surveys (Tolmie et al., 2011). Consequently, the design of a research instrument can significantly influence how survey participants respond and the resulting data collected (Tolmie et al., 2011).

Using a validated and published questionnaire (which in this case does not exist in this field) may be more convenient and time-saving, but validity depends on whether the closed responses accurately reflect all the perceptions and feelings that people might experience in the different sampling frames. Additionally, health status and quality of life measures lose their validity when used outside the context in which they were developed (Lohr, 2002; Gilbody et al., 2001; Dijkers, 1997). It is also important to note that instruments developed in different times, countries, or cultural contexts may not be a valid measure in the group being studied (Boynton & Greenhalgh, 2004). This is especially important given that the current study takes place in a different historical, geographical, and cultural context (both in terms of work and social relations). Consequently, the researcher developed a questionnaire to bridge these gaps and

provide solutions for taxi industry personnel in South Africa and other developing countries (see **Appendix C**).

In survey research, questionnaires are the most effective method for obtaining primary data to achieve the research objectives. Using a questionnaire to collect primary data also enabled the researcher to meet the needs of the sample. Primary data are commonly used in exploratory and descriptive studies, as they seek to understand a research phenomenon both inductively and deductively. In this study, numeric data have been collected using a research questionnaire to quantify variables. A literature review was used to compile relevant items for the questionnaire in this study as seen in **Appendix E** (Sansoni, 2011). This item serves as a catalyst for answering the research questions and accomplishing the research objectives.

## 3.6 PILOT STUDY

An experimental pilot study is a series of small-scale experiments designed to evaluate the feasibility of larger projects in the future (Malmqvist et al., 2019; Hazzi & Maldaon, 2015; Morin, 2013). Conducting a pilot study is an essential part of conducting research. Prior to conducting significant research, the analysis can be used to identify design issues, determine feasibility, practicality, resources, time, and cost (Malmqvist et al., 2019). Consequently, a pilot study was conducted to assess the validity and reliability of this study's research instrument. The pilot study was conducted with a population that is different from the one that the researcher intends to study for the dissertation. In it, a sample of 20 participants from the metro municipality answered the questionnaire to determine the reliability of the instrument. These 20 participants that took part in the pilot study were also from the study site. However, during the main study, these 20 participants were excluded from participation. The 20 repondents that participated in the pilot study were randomly selected to participate in the study. After giving their consent to voluntarilly participate in the pilot study, the questionnaire was given to them to fill in and submit after completion. The pilot study took place in August of 2023. Therefore, since the study instrument was crafted based on existing literature, the researcher strongly believed that piloting this study provided more insight on understanding how the Covid-19 pandemic impacted on the livelihoods of taxi industry personnel.

### 3.6.1 Reliability of Study Instrument

Prior to conducting the main study, an evaluation of the instrument's internal consistency was performed using the Cronbach Alpha Coefficient, a method used to assess an instrument's

reliability. This was done using a sample of 20 participants. Apart from the demographic section of the questionnaire, all sections of the questionnaire were analysed. As such, piloting the instrument that was used in the main study is an effective way to ensure that the instrument used in the main study is suitable and reliable. This helps the researcher determine if the instrument was used to collect data for the main study is of high quality. Hence, the primary purpose of testing the reliability of the study instrument was to improve and make changes to the questionnaire as needed based on the results of the reliability test. Given the high level of the reliability scores during the pilot study (see **Table 3.1** to **Table 3.4**), there was not needed to make changes to the study instrument. Hence, the researcher utilized the same study instrument used for the pilot study during the main study.

A reliability statistic of 0.772 was maintained by the items that measures the impact of the Covid-19 pandemic on the taxi industry, where the mean value of (M=76.90) and standard deviation of (SD=6.415) was recorded. Furthermore, an ANOVA test indicated the instrument's internal consistency was reliable and valid, with F = 4.700 and P = 0.001. Accordingly, 77.2% of the variance in scores can be accounted for by reliable variance. Based on Cronbach's 1947 and 1951 recommendations, the alpha coefficient of this study is greater than 0.5 (50%) which indicates the validity and reliability of the findings to be of high standards. See **Table 1** below for a detail representation of the analysis.

**Table 3.1:** Reliability test of the items that measures the impact of the pandemic on the taxi industry (n=20)

| **Items** | **Mean (M)** | **Standard Deviation (SD)** | **Corrected Item-Total Correlation** | **Cronbach's Alpha if Item Deleted** |
|---|---|---|---|---|
| Covid-19 affected the wellbeing of the taxi industry personnel. | 4.95 | .224 | .035 | .776 |
| Taxi industry experienced a loss of income during the pandemic. | 4.50 | 1.051 | .498 | .748 |
| I lost my job during the Covid-19 pandemic. | 3.65 | 1.348 | .458 | .756 |
| Job security during the pandemic was elevated. | 3.75 | 1.410 | .403 | .765 |
| I run out of money to buy food during the pandemic. | 4.40 | 1.046 | .292 | .769 |
| The pandemic greatly affected my livelihood. | 4.65 | .587 | .450 | .758 |

| | | | | |
|---|---|---|---|---|
| I was afraid of the virus, and fear of infection. | 4.70 | .470 | .199 | .771 |
| I was concern about my family and customers. | 4.70 | .470 | .512 | .757 |
| I was afraid of losing my job/business. | 4.75 | .444 | .474 | .760 |
| Increase of fuel price disrupted business. | 4.65 | .587 | .284 | .767 |
| Shortage of passengers was a big challenge during the pandemic. | 4.80 | .410 | .462 | .761 |
| The pandemic increased competition from other drivers. | 4.20 | 1.152 | .441 | .755 |
| The pandemic increased competition from other means of public transportation (e,g Meter taxi, Uber, Bolt). | 4.40 | .940 | .393 | .759 |
| It takes longer time to get required number of passengers during the pandemic. | 4.80 | .523 | .481 | .757 |
| The pandemic affects the number of passengers per load. | 4.80 | .523 | .150 | .774 |
| The pandemic resulted in the loss of taxi drivers and taxi operators. | 4.55 | .759 | .486 | .752 |
| The pandemic resulted in repossessions of taxis due to poor revenue. | 4.65 | .587 | .434 | .758 |

In terms of the support received during the Covid-19 pandemic by the industry, the results revealed a reliability statistic of 0.947, with a total M of 40.50 and a SD of 11.302. These results, however, were not supported by the ANOVA test, which suggested that the instrument used for the pilot study may not be entirely reliable and valid, with F = 1.148 and P = 0.329. Thus, this does not negate the fact that 94.7% of the variance in the scores are regarded as reliable variance.

**Table 3.2:** Reliability test of the items that measures the support received by the industry during the pandemic (n=20)

| **Items** | **Mean** | **Standard Deviation** | **Corrected Item-Total Correlation** | **Cronbach's Alpha if Item Deleted** |
|---|---|---|---|---|
| The formal training received by the taxi industry to curb the virus was very helpful. | 3.35 | 1.348 | .638 | .947 |
| PPE supplies was constant and regular. | 3.50 | 1.277 | .822 | .939 |
| PPE supplies was very helpful toward curbing the virus. | 3.90 | 1.210 | .817 | .940 |

| | | | | |
|---|---|---|---|---|
| The respond provided to impact specific needs (e.g covid-19 policies) were very helpful. | 3.80 | .894 | .854 | .941 |
| The regular communications and updates about the pandemic policies within the industry were very helpful. | 3.70 | 1.218 | .841 | .939 |
| The governments' policies mandates outside the industry were very helpful. | 3.80 | 1.152 | .773 | .941 |
| The leaderships of the industry were very effective in regulating the mandates of the industry. | 3.80 | 1.240 | .850 | .938 |
| The management sector of the industry protected our business interest and facilitate job security. | 3.55 | 1.538 | .698 | .945 |
| The resources offered by the government were very effective. | 3.75 | 1.293 | .746 | .942 |
| The resources offered by the private sector were very effective. | 3.45 | 1.356 | .601 | .948 |
| Taxi owners were more caring and supportive during the pandemic. | 3.90 | 1.373 | .876 | .937 |

Furthermore, reliability statistics for the items that measure the factors that affect the formalisation of the taxi industry and can facilitate the formalisation of the taxi industry were grounded on 0.813, with a total mean score of 55.05 and a standard deviation of 8.376. The ANOVA test further revealed that the instrument used for the pilot study had a high internal consistency, with F = 4.797 and P = 0.001. This indicates that 81.3% of the variance in the scores is very reliable.

**Table 3.3:** Reliability test of the items that measures the factors that affect and can facilitate formalisation (n=20)

| **Items** | **Mean** | **Standard Deviation** | **Corrected Item-Total Correlation** | **Cronbach's Alpha if Item Deleted** |
|---|---|---|---|---|
| ***Factors affecting formalisation*** | | | | |
| There is a high risk that formalising the industry would cripple the economy of the industry. | 3.35 | 1.348 | .256 | .818 |
| Formalisation will ensure job security for everyone in the industry. | 3.80 | 1.196 | .596 | .788 |
| The industry is better off on its own without formalisation. | 2.80 | 1.436 | -.105 | .851 |
| Lack of government support affect the formalisation of the industry. | 4.20 | 1.152 | .839 | .768 |
| ***Ways to facilitate formalisation*** | | | | |

| | | | | |
|---|---|---|---|---|
| Government support and resources will increase the level of sustainability in the industry. | 4.05 | 1.050 | .641 | .786 |
| Adoption of new technology in handling the business and passengers can facilitate formalisation in the industry. | 4.15 | 1.040 | .781 | .776 |
| More government support and intervention are required for formalisation. | 4.30 | .657 | .381 | .806 |
| Subsidizing the taxi industry would be helpful towards formalisation. | 4.50 | .688 | .144 | .817 |
| The application of management principles and accounting would be helpful towards formalisation. | 4.15 | .875 | .812 | .779 |
| Incorporating tax laws in the industry would help to formalise the industry. | 4.40 | .681 | .341 | .808 |
| Clarity on subsidy allocation would facilitate the formalisation process easily. | 4.35 | .988 | .026 | .827 |
| Prioritising public transport over private car use can enhance the formalisation of the taxi industry. | 3.50 | 1.433 | .358 | .810 |
| Restructuring the current leadership structure would help towards the formalisation of the industry. | 3.70 | 1.261 | .677 | .780 |
| Restructuring the current employment practices within the taxi industry would be essential towards formalising the industry. | 3.80 | 1.281 | .727 | .775 |

Consequently, the results from the reliability statistics of the items that measures the impact of the Covid-19 pandemic on the taxi industry, the support received by the industry during the pandemic, and the factors that affect the formalisation of the taxi industry and also can facilitate the formalisation of the taxi industry indicates a high percentage of reliability. The results indicate the high-reliability coefficient of 0.772, 0.947 and 0.813 for all the Sections respectively. See **Table 3.4** below for a detail representation of the analysis.

**Table 3.4:** Reliability test of the study instrument (n=20)

| **IMPACT OF THE PANDEMIC ON THE TAXI INDUSTRY: RELIABILITY STATISTICS** | | | |
|---|---|---|---|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | | N of Items |
| .772 | .801 | | 17 |
| **Scale Statistics** | | | |
| Mean | Variance | Standard Deviation | N of Items |
| 76.90 | 41.147 | 6.415 | 17 |
| **SUPPORT RECEIVED DURING THE PANDEMIC: RELIABILITY STATISTICS** | | | |
| .947 | .950 | | 11 |

| | | | |
|---|---|---|---|
| 40.50 | 127.737 | 11.302 | 11 |
| **TAXI INDUSTRY FORMALISATION: RELIABILITY STATISTICS** | | | |
| .813 | .829 | | 14 |
| 55.05 | 70.155 | 8.376 | 14 |

## 3.7 ADMINISTRATION OF MEASURING INSTRUMENTS AND ETHICAL CONSIDERATION

### 3.7.1 Data Collection Process

During the data collection process, specific information is gathered based on the objectives, questions, or hypotheses of a study (Grove et al., 2013). As this study utilizes a quantitative research approach, the researcher contacted the study site's administrators to obtain permission to conduct the study. Participants were randomly approached to participate in the study after an agreement on participation had been reached – suggesting that questionnaires were distributed in person. Here, participants were required to fill out a questionnaire provided by the researcher. The questionnaire was translated into the participants' native languages in order to ensure that they fully understood the study instrument. By doing so, participants are able to engage easily with the questions.

### 3.7.2 Ethical Consideration

In order to conduct this study, the researcher obtained permission from the taxi industry management body where the study was conducted, which was granted with a written letter allowing the researcher to do so (See **Appendix B**). In addition, the researcher obtained ethical approval from the University of KwaZulu-Natal (UKZN) Research Ethics Committee. In this case, an ethical clearance application was submitted to the Research Ethics Committee of UKZN. After that, the ethical clearance was obtained (see **Appendix A**).

In addition, informed consent forms were provided to participants (see **Appendix D**). In it, the participants were informed that they were free to participate in the study voluntarily. Prior to completing the questionnaires, the informed consent form was completed and given to the researcher. Also, participant confidentiality was clearly explained.

## 3.8 DATA ANALYSIS METHODS

Descriptive statistical analysis and an inferential statistical analysis are the two major stages of statistical analysis in this study. Following data collection, descriptive and inferential

techniques (as well as correlation analysis) were used to analyse the collected data. The data was analysed using SPSS.

### 3.8.1 Descriptive statistical analysis

The use of descriptive statistics is an important part of quantitative data analysis (Kaur et al., 2018; Fisher & Marshall, 2009). Here, the purpose of descriptive statistics is to assemble a set of data that represents the population in its entirety or a sample of it. To ensure that the findings were reliable, internal consistency reliability was also employed. Internal consistency was measured using the Cronbach alpha coefficient. Based on Pallant's (2016) research, Cronbach's alpha coefficients range from 0 to 1, with higher values indicating greater reliability. In ideal conditions, a measuring instrument's Cronbach alpha coefficient should be greater than 0.80 (Tang et al., 2014), although values as low as 0.70 are acceptable (Rose et al., 2021; Tang et al., 2014; Bjorner et al., 2014).

Consequently, a descriptive statistics matrix was used by the researcher to determine variables' mean, standard deviation, frequency, and percentage (Quilan et al., 2011). As such, the descriptive statistics matrices of each variable are described in Chapter Four of this study. Furthermore, descriptive statistics were used mainly to simplify and visualize data via charts, graphs, and tables. To compare the relationship between the independent and dependent variables, contingency tables were additionally used. Therefore, contingency tables were used to describe the items of interest.

### 3.8.2 Inferential Statistical Analysis

In order to determine the nature of the relationship between the dependent and independent variables, the researcher applied Analysis of Variance (ANOVA), correlations, and regression analyses. Analysing the data inferentially enables the researcher to draw conclusions based on the findings (Amin, 2021). Using inferential statistics, one can draw generalisations about a population from data collected from samples (Amin, 2021).

A t-statistic and a t-distribution value are examined along with degrees of freedom in order to determine the statistical significance. The significance test for mean differences is an inference statistic that determines whether the means of two groups differ significantly, usually because of some factors. In addition to indicating that the findings are unlikely to be the result of chance, statistically significant findings also indicate that variables in the larger population are related

(Shrestha, 2019). In order to avoid false conclusions about meaningful differences between groups when they are merely chance differences, researchers establish strict criteria for their statistical tests. Based on the significance level, this criterion is applied. It is common for researchers in the social sciences to use a significance level of 5%, as Schneider (2013) notes. This study used the same level of significance. Chi-squared tests were used to determine the relationship between independent and dependent variables. In addition, bivariate analyses were performed on dependent variables and their associated explanatory variables. Furthermore, multiple logistic regression models were fitted to the multivariate analysis.

## 3.9 CHAPTER SUMMARY

The main purpose of this survey design study was to examine and explore the impact of the Covid 19 pandemic on taxi industry personnel – relative to their livelihoods. To achieve the defined research objectives, this chapter outlines the research methodology. The chapter began with a description of the research approach and design, followed by procedures for collecting data, population and sampling techniques, ethical considerations, and data analysis.

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION AND DISCUSSION OF RESULTS

## 4.1 INTRODUCTION

The prime purpose of this study is to assess the impact of Covid-19 pandemic on the taxi industry in South Africa. In it, the study focuses on the application of statistical techniques to understand how the Covid-19 pandemic impact on the livelihoods of the taxi industry personnel in South Africa. Thus, this chapter presents the research findings generated from this study and as well as the discussion thereof. The total sample size upon which all statistical measures was carried out for this study was 152 taxi industry personnel who met the eligibility criteria as stipulated in Chapter Three of this study and as well as in the section below. As already mentioned in Chapter Three of this study, the researcher used a questionnaire to collect primary data used for answering the research questions and thereby achieving the research objectives.

After collecting the primary data, the researcher cleaned and analysed the data using the SPSS software (version 27). This was then used to compute the statistical matrices and values presented in this chapter. Here, the researcher used both descriptive and inferential statistical matrices to analyse the collated data and to demonstrate the findings from this study. While the descriptive statistical techniques were used to measure the central tendencies and dispersion within the variables, the inferential statistical techniques were used to demonstrate the relationship between variables and to evaluate the degree of association, probability, and the nature of relationship amongst variables in the dataset. As a result, all inferential tests computed in this study were subject to the traditional p-value of $<0.05$. Therefore, the results of this study are presented and discussed simultaneously according to the research objectives, which are:

1. To determine the impact of the Covid-19 pandemic on the taxi industry through the lived experience of taxi owners, taxi drivers and taxi rank marshals in the Free State province.

2. To identify and measures the efficiency of the types of supports the taxi industry received during the pandemic in the Free State province.

3. To identify possible policies and structural changes needed to improve the operational and labour relations in the industry.

4. To identify and provide mechanisms to ameliorate Covid-19's effects on taxis.

## 4.2 SAMPLE REALIZATION AND RESPONSE RATE

In this study, the researcher employed a simple random and convenient sampling technique to conveniently obtained a total of 152 sample size from the target population at the research site. Here, the target population for this study was specifically geared toward taxi owners, taxi drivers and taxi-ranks marshals in the Free State Province – located in the Mangaung Metropolitan Municipality. Using inclusion and exclusion criteria, the sample size comprises of only taxi owners, taxi drivers and taxi-ranks marshals within the Mangaung Metropolitan Municipality in Free State and excluded those outside the Mangaung Metropolitan Municipality and that do not meet the inclusion criteria. As an inclusion criterion, only participants at the study site who are 18+ years were allowed to participate in the study while the exclusion criteria eliminate participants from other municipalities in the Free State province and are less 18 years.

On response rate, a total of 163 questionnaire were distributed in 6 different taxi ranks and 3 taxi associations, but only 152 questionnaires were answered and returned to the researcher. Thus, calculating the response rate of this study as follows:

$$Total\ Response\ Rate = \left(\frac{total\ number\ of\ responses}{total\ sample\ size}\right) * 100\%$$

$$= \left(\frac{152}{163}\right) * 100\%$$

$$= 0.9325 * 100\%$$

$$= 93.25\%$$

Hence, the results from this study revealed that the response rate of this study is highly significant at 93.25%. Consequently, all analysis from this study is solely based on the 93.25% response rate of this study – based on the 152 respondents.

## 4.3 DESCRIPTIVE STATISTICS

### 4.3.1 Respondents' Socio-Demographic Assessments

The socio-demographic analysis of this study presents the respondents' age, ethnicity/racial affiliation, marital status, gender, highest level of education, years in the taxi industry prior to

the pandemic, occupation category, and total monthly income before the Covid-19 pandemic, during and after the pandemic.

#### *4.3.1.1 Respondents' age*

With a mean (M) age of 54.08 years and standard deviation (SD) of 11.95 years, the descriptive analysis of this study revealed that about 10.5%, 22.4%, 30.3% and 28.3% of the respondents who met this study's criteria were within the ages of 31-40 years, 41-50 years, 51-60 years, and 61-70 years – respectively.

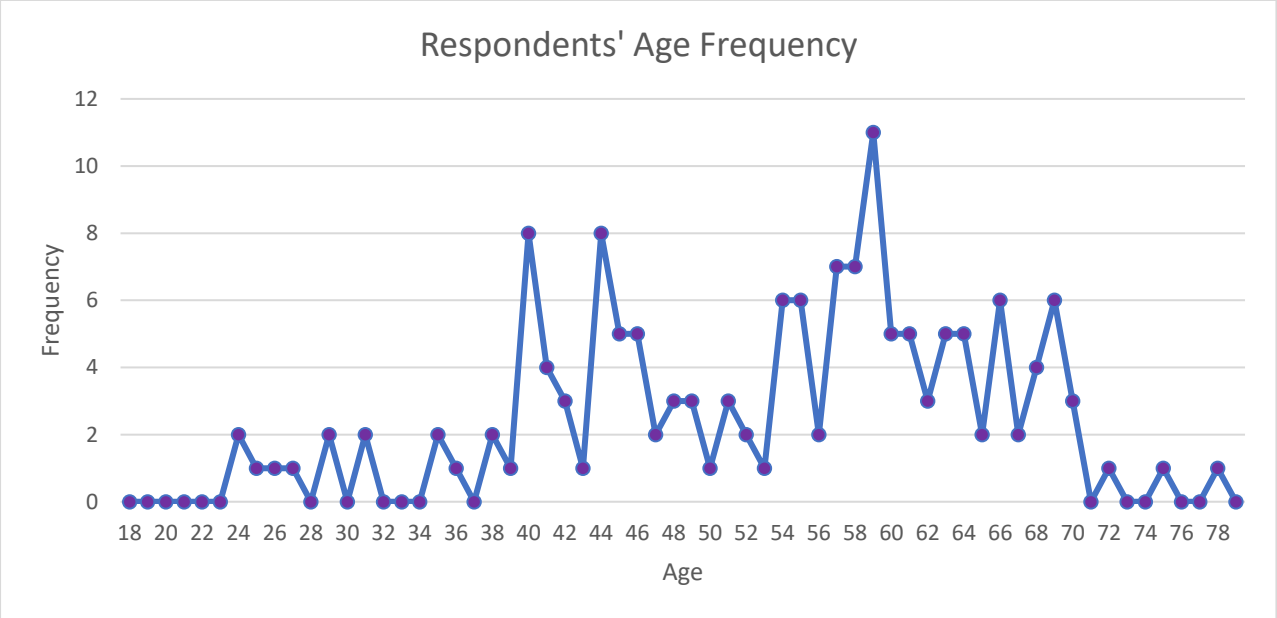


**Figure 4.1:** Respondents' age frequency

The results further revealed that about 4.6% of the respondents were 30 years or less. Indicating that most people within the taxi industry are more likely to be from the older generation. Here, we see that the higher the age group, the higher the number of taxi industry personnel. The results from this study further revealed that the peak age is from 31-70 years old. This indicating that the number of personnel in the industry begin to rise at the age of 31 years but only begins to decline at the age of 71+ years.

**Table 4.1:** Shows respondents' age category (n=152)

| **Age groups** | **Frequency (n)** | **Percent (%)** |
|---|---|---|
| 24-30 years | 7 | 4.6 |
| 31-40 years | 16 | 10.5 |
| 41-50 years | 34 | 22.4 |
| 51-60 years | 46 | 30.3 |

| | | |
|---|---|---|
| 61-70 years | 43 | 28.3 |
| 71+ years | 6 | 3.9 |
| **Total** | **152** | **100.00** |

### *4.3.1.2 Respondents' ethnicity*

On racial identity, the descriptive computation revealed that most of the respondents (n=134; 88.2%) identified themselves as Black/African, (n=17; 11.2%) identified as Coloureds, and only one respondent identified themselves as being White. None, of the respondents identified as being Indian, or Asian, or belonging to any other racial group.

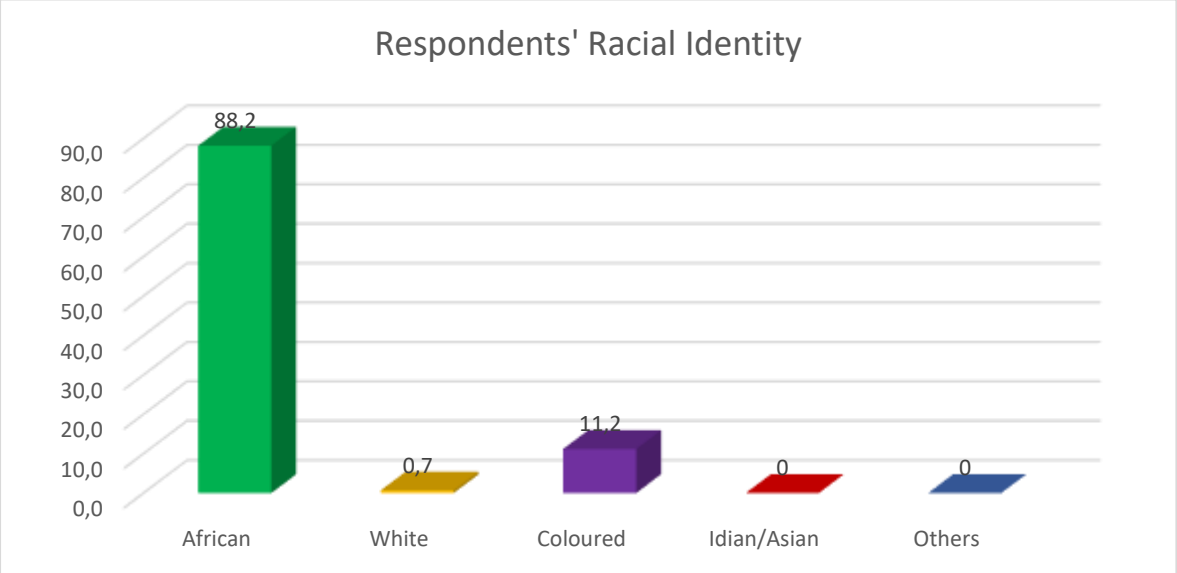


**Figure 4.2:** Shows percentage of respondents' racial identity

### *4.3.1.3 Respondents' marital status*

With M= 2.25 and SD= 0.878, the descriptive computation of this study revealed that most of the respondents (n=83; 54.6%) were married/living together with a partner. Furthermore, the results suggested that 16.4% of the respondents are single. Similarly, the results equally indicated that 16.4% of the respondents were widowed/widower. See **Table 4.2** for detail presentation of the results.

**Table 4.2:** Respondents' marital status (n=152)

| **Age Groups** | **Frequency (n)** | **Percent (%)** |
|---|---|---|
| Single | 25 | 16.4 |
| Married | 83 | 54.6 |
| Widow/Widower | 25 | 16.4 |

| | | |
|---|---|---|
| Separated/Divorced | 19 | 12.6 |
| **Total** | **152** | **100.00** |

### *4.3.1.4 Assessing respondents' education*

While assessing respondents' highest educational level, the descriptive analysis of this study revealed that most of the respondents' (n=89; 58.6%) has Secondary School education (High School) as their highest educational level. While about (n=43; 28.3%) of the respondents has Higher education as their highest educational level, about (n=11; 7.2%) of the respondents reported having primary education as the highest level of education. The results further revealed that none of the respondents reported not having any formal education.

**Table 4.4:** Shows respondents' highest education level (n=152)

| **Education** | **Frequency (n)** | **Percent (%)** |
|---|---|---|
| No Education | 0 | 0.0 |
| Primary | 11 | 7.2 |
| Secondary | 89 | 58.6 |
| College/University | 43 | 28.3 |
| Post-graduate | 9 | 5.9 |
| **Total** | **152** | **100.0** |

### *4.3.1.5 Respondents' gender*

The descriptive analysis of this study revealed that most of the respondents (n=121; 79.6%) are males and (n=31; 20.4) are females. These results are suggesting that the taxi industry in South Africa is a male-dominated business/industry.

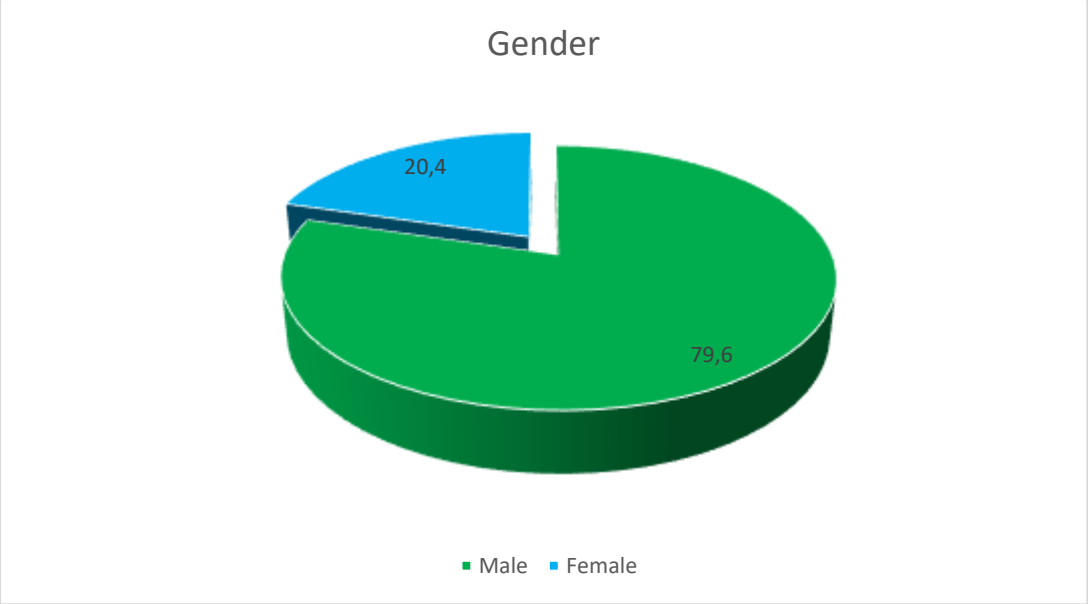


**Figure 4.3:** Shows respondents' gender identity in percentages

### *4.3.1.6 Assessing Respondents' years in the taxi industry prior to Covid-19*

With the number of years of work experience in the taxi industry prior to Covid-19 ranging from 2 to 45 years, the descriptive analysis of this study indicated that the average number years of work experience in the industry is 19.23 years, with a standard deviation of 9.276 years. Furthermore, the computation revealed that about (n=65; 42.8%) of the respondents have been working in the taxi industry for 11-20 years prior to the Covid-19 pandemic, (n=43; 28.3%) have been working for 21-30 years prior to the pandemic; while only (n=9; 5.9%) of the respondents have been working in the taxi industry for 1-5 years before the pandemic. Here, the results are suggesting that most of the participants of this industry dedicated most of their working years in the industry. This intensifies the importance the industry has towards their livelihoods.

**Table 4.5:** Shows respondents' years of working experience in the industry (n=152)

| **Education** | **Frequency (n)** | **Percent (%)** |
|---|---|---|
| 1-5 years | 9 | 5.9 |
| 6-10 years | 17 | 11.2 |
| 11-20 years | 65 | 42.8 |
| 21-30 years | 43 | 28.3 |
| 31+ years | 18 | 11.8 |
| **Total** | **152** | **100.0** |

#### *4.3.1.7 Assessing Respondents' economic status*

The distribution of income within a society or country is the first important consideration of ensuring households food and social security (Barlow et al., 2020; Chavas, 2017; Poulsen et al., 2015; Kotagama et al., 2014; Akter & Basher, 2014; Haddah, 1992). Thus, to assess the economic status of the respondents, the researcher began by determining what is the occupation or work position of the respondents in the taxi industry. Here, the results revealed that most of the respondents (n=111; 73.0%) reported that they are taxi owners. On the other hand, about (n=26; 17.1%) of the respondents reported that they are taxi drivers while (n=15; 9.9%) identified as rank marshals. Unfortunately, the unrepresentative nature of the taxi drivers and rank marshals was due to the fact that the taxi drivers and rank marshals were demanding to be paid before they can participate in the study. This was impossible since the researcher has no funding for this study. Hence, it resulted in recruiting more taxi owners who were very willing to participate in the study.

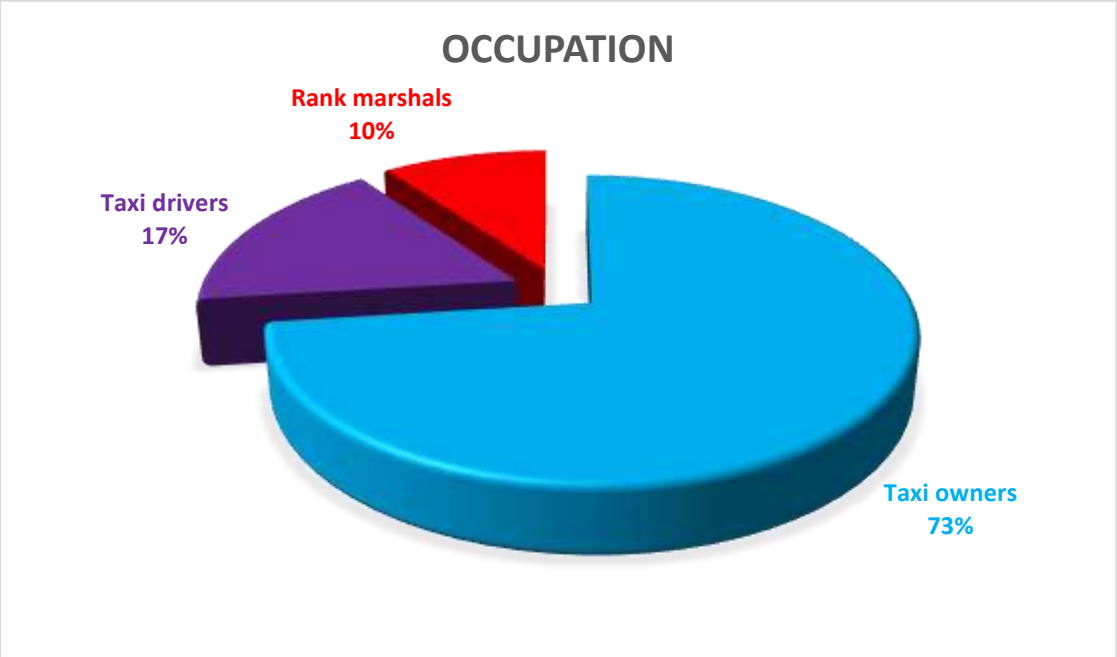


**Figure 4.4:** Shows respondents' occupation/work position in percentages

When asked about their total monthly income before the Covid-19 pandemic, during and after the pandemic, the descriptive computation of this study revealed that the average take-home income prior to the pandemic was R21499.87 and a standard deviation of R16936.554, where the median was R1500 with a minimum total income of R3000 and maximum total income of

R90000. During the Covid-19 pandemic, the descriptive statistics revealed that the average take-home income was R6911.54 and a standard deviation of 8109.045, where the median value was R5000 with a minimum total income of R0.00 and a maximum total income of R65000. After the heat of the Covid-19 pandemic between October and November 2023, the descriptive computation revealed that the average total income was R19419.36 and a standard deviation of R15976.714, such that the median value was R15000 with a minimum total income of R1242 and maximum total income of R80000 as per **Figure 4.5**. Hence, the standard deviation values for this study suggested that there is a huge gap in the average income value across the sample within the taxi industry, before, during and after the heat of the Covid-19 Pandemic (See **Table 4.6**).

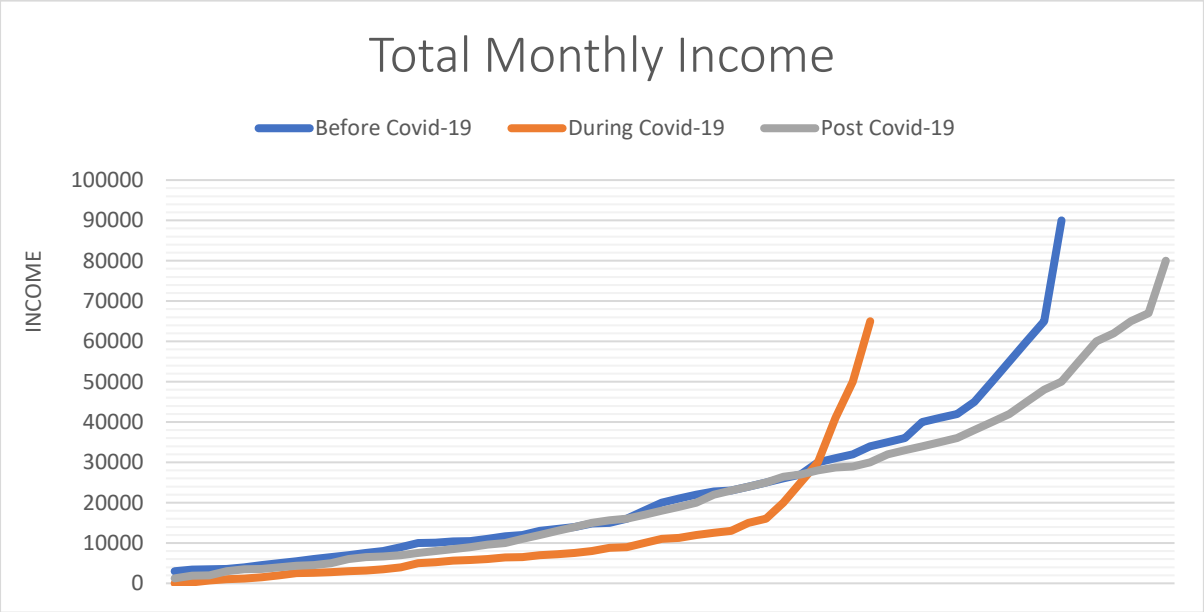


**Figure 4.5:** Shows respondents total monthly income

The results further revealed that prior to the Covid-19 pandemic, about (n=55; 36.2%) of the respondents reported earning a total monthly income of between R10001 – R25000 and (n=39; 25.7%) earned a total monthly income of R25001 – R45000. While (n=46; 30.3%) reported earning a total monthly income of ≤R10000, about (n=12; 7.9%) reported earning a total monthly income of ≥R45001. During the Covid-19 pandemic, the descriptive results revealed that most of the participants (n=80; 52.6%) reported earning a total monthly income of ≤R5000 and (n=54; 35.5%) reported earning a total monthly income of between R5001 – R10000. Therefore, the results are suggesting that most of the study's participants (n=134; 88.2%) earned a total monthly income of ≤R10000 during the pandemic. When compared to the total monthly income prior to the pandemic, there is an increase of about 58% of those who earned

a total monthly income of ≤R10000 during the pandemic (30.3% versus 88.2%). These results are indicative of the fact that the Covid-19 pandemic negatively impact on the economic status of the taxi industry in the Free State province. Post Covid-19 (between October and November 2023), the descriptive computation revealed that about (n=61; 40.1%) of the respondents reported earning a total monthly income of ≤R10000, which is a 48.1% difference when compared to the percentage of those who earned ≤R10000 during the heat of Covid-19 pandemic (88.2% versus 40.1%). Notably, the percentage of those who earned a total monthly income of ≤R10000 before the pandemic increase by 9.8% compared to those in the same income category in post Covid-19. Regardless, the results of the post pandemic income analysis indicates that even though the taxi industry has recovered from the negative impact of the pandemic (to a greater extend), the industry is not fully recovered from the negative impact of the Covid-19 pandemic. See **Table 4.6** for detail presentation of the results. Consequently, the descriptive results of this study demonstrate that the Covid-19 pandemic had a negative impact on the taxi industry, thereby negatively affecting the economic growth of the taxi industry.

**Table 4.6:** Shows respondents' total month incomes (n=152)

| **Total Monthly Income** | **Before Covid-19** | **During Covid-19** | **Post Covid-19** |
|---|---|---|---|
| ≤R5000 | 24 (15.8%) | 80 (52.6%) | 26 (17.1%) |
| R5001 – R10000 | 22 (14.5%) | 54 (35.5%) | 35 (23.0%) |
| R10001 – R25000 | 55 (36.2%) | 14 (9.2%) | 46 (30.3%) |
| R25001 – R45000 | 39 (25.7%) | 2 (1.3%) | 35 (23.0%) |
| ≥R45001 | 12 (7.9%) | 2 (1.3%) | 10 (6.6%) |

### 4.3.2 Evaluating the impact of Covid-19 on the taxi industry

When asked whether Covid-19 affected the wellbeing of the taxi industry personnel, the descriptive computation of this study revealed that about (n=46; 30.3%) of the respondents reported that they agreed and (n=88; 57.9%) reported that they strongly agreed. With M= 4.36 and SD= 0.986, this result indicates that most of the participants (88.2%) are in agreement that the pandemic affect the wellbeing of the taxi industry personnel. Similarly, with a mean score of 4.59 and a standard deviation of 0.784, the descriptive computation of this study revealed that most of the respondents (n= 108; 71.1%) reported that they strongly agreed that the taxi industry experienced loss of income during the heat of the pandemic and (n=33; 21.7%) also agreed to that. This is suggesting that the majority of the respondents (92.8%) are in agreement that the industry incurred economic loss during the heat of the pandemic. On losing their jobs during the pandemic, the results revealed that about (n= 61; 40.1%) of the respondents disagreed about losing their job during the pandemic, which is also echoed by (n= 47; 30.9%)

of the respondents who strongly disagreed about losing their jobs. With M= 2.26 and SD= 1.259, the result here suggests that most of the respondents (71%) reported not losing their jobs during the pandemic. On job insecurity being elevated during the pandemic, the results indicated that while (n=59; 38.8%) were neutral about their responds, about (n= 59; 38.8%) of the respondents were equally in agreement that the pandemic elevated job insecurity in the taxi industry.

Although the results indicate that most of the respondents (57.2%) disagreed about running out of money to buy food during the pandemic, most of the respondents (88.9%) reported that the pandemic greatly affected their livelihoods. The descriptive analysis further revealed that the majority of the respondents (93.4%) were in agreement that they were afraid of getting infected by the Covid-19 virus. Similarly, the descriptive statistics also revealed that about (94.1%) of the respondents reported having concerns for their families and customers during the heat of the pandemic. Even though the descriptive results indicates that most of the participants (71%) did not lose their jobs during the pandemic, the analysis revealed that most of the respondents (57.2%) were afraid of losing their jobs and/or business during the pandemic where M= 3.52 and SD=1.223.

On increase of fuel prices being disruptive during the pandemic for the taxi industry, only about (45.4%) of the respondents were in agreement that it had a negative impact in the taxi industry and 30.3% of the respondents were neutral about it. With M=4.41 and SD= 0.833, the descriptive analysis indicates that the majority of the respondents (92.8%) were in agreement that the shortage of passengers was a big challenge during the pandemic. Similarly, with M=4.45 and SD= 0.744, the results also revealed that majority of the respondents (91.1%) were in agreement that it takes longer time to get the required number of passengers during the pandemic. In the same fashion, most of the respondents (94.1%) were equally in agreement that the pandemic affects the number of passengers per load, where M=4.61 and SD= 0.884. Furthermore, the majority of the respondents (91.5%) were in agreement that the pandemic resulted in the loss of taxi drivers and taxi operators with M=4.18 and SD= 0.710. Similarly, the results revealed that most of the respondents (83.5%) were in agreement that the pandemic also resulted in the loss of vehicles/repossessions of taxi due to poor revenues, with M=4.12 and SD=0.745. Therefore, with a total mean score of 65.18 and a standard deviation of 6.98, the descriptive analysis of this study indicates that the Covid-19 pandemic impact negatively on the taxi industry, where the median score is 64.00. See **Table 4.7** below for detail presentation of the results.

**Table 4.7:** Shows the impact of Covid-19 pandemic on the taxi industry (n=152)

| Factors | Strongly Disagreed | Disagreed | Neutral | Agreed | Strongly Agreed | M | SD |
|---|---|---|---|---|---|---|---|
| Covid-19 affected the wellbeing of the taxi industry personnel. | 6 (3.9%) | 4 (2.6%) | 8 (5.3%) | 46 (30.3%) | 88 (57.9%) | 4.36 | 0.986 |
| Taxi industry experienced a loss of income during the pandemic. | 3 (2.0%) | 1 (0.7%) | 7 (4.6%) | 33 (21.7%) | 108 (71.1%) | 4.59 | 0.784 |
| I lost my job during the Covid-19 pandemic. | 47 (30.9%) | 61 (40.1%) | 16 (10.5%) | 13 (8.6%) | 15 (9.9%) | 2.26 | 1.259 |
| Job insecurity during the pandemic was elevated. | 15 (9.9%) | 19 (12.5%) | 59 (38.8%) | 47 (30.9%) | 12 (7.9%) | 3.14 | 1.064 |
| I run out of money to buy food during the pandemic. | 21 (13.8%) | 66 (43.4%) | 15 (9.9%) | 33 (21.7%) | 17 (11.2%) | 2.73 | 1.261 |
| The pandemic greatly affected my livelihood. | 5 (3.3%) | 6 (3.9%) | 6 (3.9%) | 39 (25.7%) | 96 (63.2%) | 4.41 | 0.980 |
| I was afraid of the virus, and fear of infection. | 4 (2.6%) | 2 (1.3%) | 4 (2.6%) | 31 (20.4%) | 111 (73.0%) | 4.60 | 0.832 |
| I was concern about my family and customers. | 3 (2.0%) | 2 (1.3%) | 4 (2.6%) | 32 (21.1%) | 111 (73.0%) | 4.65 | 0.654 |
| I was afraid of losing my job/business. | 6 (3.9%) | 36 (23.7%) | 23 (15.1%) | 47 (30.9%) | 40 (26.3%) | 3.52 | 1.223 |
| Increase of fuel price disrupted business. | 6 (3.9%) | 31 (20.4%) | 46 (30.3%) | 26 (17.1%) | 43 (28.3%) | 3.45 | 1.212 |
| Shortage of passengers was a big challenge during the pandemic. | 3 (2.0%) | 4 (2.6%) | 4 (2.6%) | 57 (37.5%) | 84 (55.3%) | 4.41 | 0.833 |
| The pandemic increased competition from other drivers. | 25 (16.4%) | 49 (32.2%) | 34 (22.4%) | 16 (10.5%) | 28 (18.4%) | 2.82 | 1.343 |
| The pandemic increased competition from other means of public transportation (e,g Meter taxi, Uber, Bolt). | 28 (18.4%) | 46 (30.3%) | 26 (17.1%) | 24 (15.8%) | 28 (18.4%) | 2.86 | 1.388 |
| It takes longer time to get required number of passengers during the pandemic. | 1 (0.7%) | 3 (2.0%) | 8 (5.3%) | 55 (36.2%) | 85 (55.9%) | 4.45 | 0.744 |
| The pandemic affects the number of passengers per load. | 6 (3.9%) | 1 (0.7%) | 2 (1.3%) | 27 (17.8%) | 116 (76.3%) | 4.62 | 0.884 |
| The pandemic resulted in the loss of taxi drivers and taxi operators. | 2 (1.3%) | 2 (1.3%) | 9 (5.9%) | 93 (61.2%) | 46 (30.3%) | 4.18 | 0.710 |
| The pandemic resulted in the loss of vehicles/repossessions of taxis due to poor revenues. | 1 (0.7%) | 2 (1.3%) | 22 (14.5%) | 80 (52.6%) | 47 (30.9%) | 4.12 | 0.745 |

### 4.3.3 Evaluating the effectiveness of the support received by the taxi industry during the Covid-19 pandemic

On the type of support received during the Covid-19 pandemic, the descriptive analysis as shown in **Table 4.8** indicates that there were 683 total responses, with the response percentages ranging between 0.0% to 22.3%. The percentages of the cases indicates that 93.4% of the respondents reported that they received formal training to curb the virus, all the respondents (100%) reported that they received personal protective equipment (PPE) supplies during the pandemic, 99.3% of the respondents reported that they received supports in the form of respond to impact-specific needs (e.g Covid-19 policies), 98.7% of the respondents reported receiving regular communications and updates about the pandemic polices, and 57.9% of the respondents reported receiving crowd funding to control job insecurity. However, the results indicated that none of the respondents received food supplies during the pandemic. Therefore, the findings

of this study indicates that the taxi industry did receive some support during the pandemic to assist the industry to function adequately during the pandemic.

**Table 4.8**: Type of supports received by the taxi industry during the pandemic (n= 152)

| Type of supports received during the Pandemic | Responses | | Percent of Cases |
|---|---|---|---|
| | N | % | |
| Formal training to curb the virus | 142 | 20.8 | 93.4 |
| Personal Protective Equipment (PPE) supplies | 152 | 22.3 | 100.0 |
| Respond to impact-specific needs (e.g covid-19 policies) | 151 | 22.1 | 99.3 |
| Regular communications and updates about the pandemic policies | 150 | 22.0 | 98.7 |
| Crowd funding to control job security | 88 | 12.9 | 57.9 |
| Food supplies | 0 | 0.0 | 0.0 |
| **Total** | **549** | **100.0** | **363.6%** |
| *Dichotomy group tabulated at value 1.* | | | |

When asked to rate the impact of the support they received during the pandemic within the taxi industry, most of the respondents (53.7%) were in agreement that the formal training received by the taxi industry to curb the virus from spreading was very helpful where M= 3.41 and SD= 1.012. On PPE supplies, most of the respondents (74.4%) were in agreement that the PPE supplies were constant and regular. Similarly, most of the respondents (75.7%) were in agreement that the PPE supplies were very helpful toward curbing the virus, with M= 4.11, SD = 1.125. With a mean score of 3.81 and standard deviation of 0.874, the results revealed that most of the respondents (70.4%) were agreement that the respond provided to impact specific needs were very helpful within the taxi industry. In a similar fashion, most of the respondents (81.0%) were in agreement that the regular communications and updates about the pandemic policies within the industry were very helpful to keep the transaction floating during the pandemic, with M= 4.19 and SD= 0.961. Furthermore, the results also revealed that most of the respondents (77.7%) were in agreement that the governments' policies and mandates outside the taxi industry were very helpful to keep the taxi industry business floating doing the pandemic, where M= 4.05 and SD =0.867.

On leaderships of the taxi industry, the descriptive analysis revealed that most of the respondents (79.6%) were in agreement that they were very effective in regulating the mandates of the industry during the pandemic, where M= 3.91 and SD = 1.059. Similarly, with a mean score of 3.79 and standard deviation of 1.059, the results revealed that majority of the respondents (74.3%) were in agreement that the management sector of the industry protected their business interest and facilitated job security during the pandemic. On the issues of

resources, the results indicated that most of the respondents (67.7%) were in agreement that they resources offered by the government were very effective during the pandemic, where M=3.77 and SD = 1.113. On the other hand, 47.4% of the respondents were neutral about the effectiveness of the resources they received from the private sector, while about 34.3% of the respondents were in agreement about the effectiveness of the resources they received from the private sector. In addition, the results revealed that most of the respondents (77.6%) were in agreement that taxi owners were more caring and supportive during the pandemic, where M= 4.10 and SD= 1.002. Therefore, with a total mean score of 42.30 and a standard deviation of 8.311, the descriptive analysis of this study indicates that the supports received by the taxi industry during the pandemic was very effective.

**Table 4.9:** Shows the effectiveness of the support received by the taxi industry during the pandemic (n=152)

| **Factors** | **Strongly Disagreed** | **Disagreed** | **Neutral** | **Agreed** | **Strongly Agreed** | **M** | **SD** |
|---|---|---|---|---|---|---|---|
| The formal training received by the taxi industry to curb the virus was very helpful. | 11 (7.2%) | 11 (7.2%) | 50 (32.9%) | 65 (42.8%) | 15 (9.9%) | 3.41 | 1.012 |
| PPE supplies was constant and regular. | 10 (6.6%) | 13 (8.6%) | 16 (10.5%) | 51 (33.6%) | 62 (40.8%) | 3.93 | 1.205 |
| PPE supplies was very helpful toward curbing the virus. | 5 (3.3%) | 13 (8.6%) | 19 (12.5%) | 38 (25.0%) | 77 (50.7%) | 4.11 | 1.125 |
| The respond provided to impact specific needs (e.g covid-19 policies) were very helpful. | 4 (2.6%) | 5 (3.3%) | 36 (23.7%) | 78 (51.3%) | 29 (19.1%) | 3.81 | 0.874 |
| The regular communications and updates about the pandemic policies within the industry were very helpful. | 1 (0.7%) | 12 (7.9%) | 16 (10.5%) | 51 (33.6%) | 72 (47.4%) | 4.19 | 0.961 |
| The governments' policies mandates outside the industry were very helpful. | 1 (0.7%) | 7 (4.6%) | 26 (17.1%) | 67 (44.1%) | 51 (33.6%) | 4.05 | 0.867 |
| The leaderships of the industry were very effective in regulating the mandates of the industry. | 4 (2.6%) | 8 (5.3%) | 19 (12.5%) | 87 (57.2%) | 34 (22.4%) | 3.91 | 0.891 |
| The management sector of the industry protected our business interest and facilitate job security. | 9 (5.9%) | 10 (6.6%) | 20 (13.2%) | 78 (51.3%) | 35 (23.0%) | 3.79 | 1.059 |
| The resources offered by the government were very effective. | 10 (6.6%) | 8 (5.3%) | 31 (20.4%) | 61 (40.1%) | 42 (27.6%) | 3.77 | 1.113 |
| The resources offered by the private sector were very effective. | 7 (4.6%) | 21 (13.8%) | 72 (47.4%) | 36 (23.7%) | 16 (10.6%) | 3.22 | 0.969 |
| Taxi owners were more caring and supportive during the pandemic. | 5 (3.3%) | 5 (3.3%) | 24 (15.8%) | 54 (35.5%) | 64 (42.1%) | 4.10 | 1.002 |

### 4.3.4 Assessing taxi industry formalisation: Policies and structural changes needed to improve the operational and labour relations in the industry

To accurately assess the taxi industry formalisation, the researcher evaluates the factors affecting the formalisation of the taxi industry and as well as determine what ways can be adopted to facilitate the formalisation of the taxi industry. On the factors affecting the formalisation of the taxi industry, with M= 2.34 and SD= 1.357, most of the respondents (64.4%) strongly disagreed or disagreed that there is a high risk that formalising the industry would cripple the economy of the industry. This result indicates that formalisation is not viewed as an economic threat to the taxi industry by most of the study participants. As such, with a mean score of 4.05 and a standard deviation of 1.019, the majority of the respondents (82.3%) are in agreement that formalising the taxi industry will ensure job security for everyone in the taxi industry. Similarly, when asked if the industry is better off on its own without formalisation, most of the respondents (54.6%) strongly disagreed or disagreed on that. With a mean score of 2.55 and a standard deviation of 1.072, this result indicates that most of the participants believe that the taxi industry needs formalisation to promote integration into the formal economy. In addition, with M= 3.75 and SD= 0.971, most of the respondents (66.4%) are in agreement that lack of government support is affecting the formalisation of the industry. Therefore, these results indicates that most of the participants are open to receiving government support for the facilitation and formalisation of the taxi industry into the formal economy, thereby indicating no resistance to the idea of formalisation in the taxi industry.

On ways to facilitate the formalisation of the taxi industry, the descriptive analysis revealed that majority of the respondents (92.8%) are in agreement that government support and resources are essential towards increasing the level of sustainability in the industry, with M=4.32 and SD=0.713. In a similar fashion, the results revealed that most of the respondents (93.5%) are in agreement that more government support and intervention are required for formalisation, where M=4.48 and SD=0.754. This results also indicate that having government support and resources would be crucial towards formalising the taxi industry. The result of this study further revealed that most of the respondents (87.5%) are in agreement that adopting new technology in handling business transactions and passengers in the taxi industry will facilitate the formalisation of the industry. With M=4.39 and SD= 0.870, this result indicates that the majority of the respondents believe that the adoption of modern technology in handling business transactions in the taxi industry can facilitate formalisation in the industry. As such,

suggesting that technology is crucial to formalising the taxi industry. Furthermore, majority of the respondents (91.5%) are in agreement that subsidizing the taxi industry would be helpful towards formalisation. With M= 4.09 and SD=0.813, the descriptive analysis revealed that most of the respondents (82.2%) are in agreement that the application of management principles and accounting would be helpful towards formalising the taxi industry. Likewise, most of the respondents (69.8%) are also in agreement that incorporating tax laws in the industry would help to formalise the taxi industry, where M=3.80 and SD=0.958. These results indicate that implementing tax returns into the taxi industry is a welcome idea by most of the workers in the industry, mainly because of its ability to foster formalisation of the taxi industry. Consequently, many of the respondents (86.2%) are in agreement that having clarity on subsidy allocation would facilitate the formalisation process easily. This is very critical because having a clear knowledge and understanding the subsidy allocation and how it would be infused and managed within the taxi industry will make it easier for the workers and the industry at large to welcome the idea of formalising the industry. In addition, the results revealed that most of the respondents (72.4%) are in agreement that prioritising public transportation over the used of private cars can also enhance the formalisation of the taxi industry. Similarly, many of the respondents (54.6%) are in agreement that restructuring the current leadership structure in the taxi industry would help towards the formalisation of the industry. Therefore, the findings of this study indicate a positive attitude and acceptance towards formalisation.

**Table 4.10:** Shows the factors affecting the formalisation of the taxi industry and ways to facilitate formalisation in the industry (n=152)

| Factors | Strongly Disagreed | Disagreed | Neutral | Agreed | Strongly Agreed | M | SD |
|---|---|---|---|---|---|---|---|
| **Factors affecting the formalisation of the taxi industry** | | | | | | | |
| There is a high risk that formalising the industry would cripple the economy of the industry. | 54 (35.5%) | 44 (28.9%) | 20 (13.2%) | 17 (11.2%) | 17 (11.2%) | 2.34 | 1.357 |
| Formalisation will ensure job security for everyone in the industry. | 6 (3.9%) | 9 (5.9%) | 12 (7.9%) | 70 (46.1%) | 55 (36.2%) | 4.05 | 1.019 |
| The industry is better off on its own without formalisation. | 22 (14.5%) | 61 (40.1%) | 43 (28.3%) | 16 (10.5%) | 10 (6.6%) | 2.55 | 1.072 |
| Lack of government support affect the formalisation of the industry. | 4 (2.6%) | 12 (7.9%) | 35 (23.0%) | 68 (44.7%) | 33 (21.7%) | 3.75 | 0.971 |
| **Ways to facilitate the formalisation of the taxi industry** | | | | | | | |
| Government support and resources will increase the level of sustainability in the industry. | 1 (0.7%) | 3 (2.0%) | 7 (4.6%) | 77 (50.7%) | 64 (42.1%) | 4.32 | 0.713 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Adoption of new technology in handling the business and passengers can facilitate formalisation in the industry. | 4 (2.6%) | 0 (0.0%) | 15 (9.9%) | 46 (30.3%) | 87 (57.2%) | 4.39 | 0.870 |
| More government support and intervention are required for formalisation. | 2 (1.3%) | 2 (1.3%) | 6 (3.9%) | 53 (34.9%) | 89 (58.6%) | 4.48 | 0.754 |
| Subsidizing the taxi industry would be helpful towards formalisation. | 1 (0.7%) | 1 (0.7%) | 11 (7.2%) | 31 (20.4%) | 108 (71.1%) | 4.61 | 0.711 |
| The application of management principles and accounting would be helpful towards formalisation. | 3 (2.0%) | 1 (0.7%) | 23 (15.1%) | 78 (51.3%) | 47 (30.9%) | 4.09 | 0.813 |
| Incorporating tax laws in the industry would help to formalise the industry. | 4 (2.6%) | 11 (7.2%) | 31 (20.4%) | 72 (47.4%) | 34 (22.4%) | 3.80 | 0.958 |
| Clarity on subsidy allocation would facilitate the formalisation process easily. | 4 (2.6%) | 5 (3.3%) | 12 (7.9%) | 74 (48.7%) | 57 (37.5%) | 4.15 | 0.897 |
| Prioritising public transport over private car use can enhance the formalisation of the taxi industry. | 7 (4.6%) | 8 (5.3%) | 27 (17.8%) | 72 (47.4%) | 38 (25.0%) | 3.83 | 1.015 |
| Restructuring the current leadership structure would help towards the formalisation of the industry. | 4 (2.6%) | 9 (5.9%) | 56 (36.8%) | 55 (36.2%) | 28 (18.4%) | 3.62 | 0.942 |

## 4.4 INFERENTIAL STATISTICS

The researcher employed both bivariate and multivariate analyses to evaluate the impact of Covid-19 pandemic on the taxi industry. Similarly, both bivariate and multivariate analyses were performed to identify the key factors that influences the impact of Covid-19 on the taxi industry. Chi-square ($X^2$) tests and Analysis of Variance (ANOVA) were performed to identify the predictors of economic stability in the taxi industry, significant at $p < 0.05$.

Bivariate and multiple logistic regression modelling were both used to determine the association between total monthly incomes and the independent variables (socio-demographic factors) to determine the impact of Covid-19. Here, all the potential predictors of the impact of Covid-19 in the industry were significant at $p < 0.05$ in bivariate analyses using chi-square ($X^2$) test and One-ANOVA were included in the regression modelling.

The relationship between selected socio demographic factors and the impact of Covid-19 were determined using multiple linear regression modelling. This was performed because the dependent variables the total monthly incomes before, during and post the pandemic were continuous variables. In addition, prior to testing for the association between predictors and the dependent outcomes, the data was cleaned, and outliers removed.

### 4.4.1 Assessing the Impact of Covid-19 on the taxi industry

Here, the researcher seeks to assess the association between socioeconomic factors and the negative impact of Covid-19 in the taxi industry. In other words, the researcher seeks to determine if taxi industry employees' socioeconomic/sociodemographic factors influence the negative impact of Covid-19 pandemic.

#### *4.4.1.1 Bivariate analyses*

The results in **Table 4.11** shows the bivariate analysis with p-values set at <0.05. In it, the correlation analysis indicated that there is a strong significant relationship between gender and total monthly income in post Covid-19, where ($X^2$ = 12.547; p-value = 0.01). Similarly, the correlation computation in **Table 4.11** revealed that there is a strong relationship between racial identity and total monthly income in post Covid-19, where ($X^2$ = 19.056; p-value = 0.01). Therefore, these correlations findings are suggesting that the probability of a respondent earning more post Covid-19 is determined by their gender and racial identity – indicating that male taxi employees and black taxi employees are more likely to earn more in post Covid-19 as compared to their counterparts. This is likely so since the taxi industry as shown in the descriptive analysis is both male and blacks dominated economy.

On level of education, the results in **Table 4.11** shows no correlation between level of education and total monthly income before, during and post Covid-19. This is suggesting that employees' level of education has no significant influence in determining employees' monthly income. However, the results on marital status and monthly incomes shows a significant relationship – suggesting that those married/living together with a partner are more likely to earn more income than their counterparts. The results on respondents age and total monthly income also shows a strongly association. It says here that respondents who are older are more likely to earn more as compared to their younger counterparts. Similarly, the correlation analysis in **Table 4.11** shows that there is a strong relationship between years of experience in the industry and total monthly incomes. Indicating that employees with higher years of experience in the taxi industry are more likely to earn more as compared to those with lower years of experience in the industry. On occupation or employees' position, the results in **Table 4.11** shows that there is strong statistical significance between employees' position and monthly income – suggesting that taxi owners are more likely to earn more as compared to taxi drivers and rank marshals.

**Table 4.11**: Shows the correlation analysis and total monthly income (n=152)

| **Factors** | **Income before Covid-19** | | **Income during Covid-19** | | **Income post Covid-19** | |
|---|---|---|---|---|---|---|
| | $X^2$ | *Likelihood ratio test* | $X^2$ | *Likelihood ratio test* | $X^2$ | *Likelihood ratio test* |
| Gender | 7.624 | 10.340* | 3.573 | 4.281 | 12.547** | 14.827*** |
| Racial Identity | 14.665 | 13.319 | 13.370 | 8.660 | 19.056** | 19.019** |
| Marital status | 21.916* | 26.841*** | 20.246 | 21.861* | 35.488*** | 40.725*** |
| Age | 58.317*** | 61.850*** | 40.443*** | 44.393*** | 64.066*** | 64.488*** |
| Level of education | 19.250 | 20.739 | 9.998 | 10.648 | 14.482 | 16.776 |
| Occupation/Position | 66.908*** | 73.734*** | 25.071*** | 33.669*** | 80.035*** | 91.125*** |
| Years of experience | 56.313*** | 53.933*** | 33.886*** | 35.838*** | 67.387*** | 65.838*** |
| ***Note(s)**: *p < 0.05; **p < 0.01; ***p > 0.001* | | | | | | |

An analysis of variance (ANOVA) was performed to compare mean income scores prior to Covid-19, during Covid-19 and post Covid-19 relative to some selected predictors (racial identity, gender, education, marital status, occupation, age, and years of working experience). The results revealed a statistically significant difference between all groups except for gender and marital as determined by one-way ANOVA, with p-values of 0.001 and 0.01 prior to Covid-19. In addition, a Tukey post-hoc test revealed that employees' average income prior to the pandemic was statistically significantly higher among blacks compare to other race and among older age groups, taxi owners, those with high school education and those with high years of experience compared to their counterparts. More so, the results revealed that the average monthly income prior to the pandemic was statistically significantly lower among rank marshals, taxi drivers and those who have primary education relative to their counterparts. Furthermore, a Tukey post-hoc test also revealed that the average monthly income during the was significantly higher among taxi owners, married respondents, and older age groups as compared to their counterparts. In post Covid-19 pandemic, a Tukey post-hoc test revealed that the average monthly income is significantly higher among male, blacks, taxi owners, married respondents, those with high school education, those with high years of experience, and older age groups as compared to their counterparts. In general, the results here indicated that the average income of taxi owners before, during and post Covid-19 is higher compared to rank marshals and taxi drivers. And when compared between rank marshals and taxi drivers, the rank marshals earn much lower than the taxi drivers. **Table 4.12** shows the results that determine which groups differed from each other before, during and post Covid-19.

**Table 4.12**: Shows the results of the Tukey post-hoc test that measures the Covid-19 impact on livelihood with sociodemographic factors as independent variables (n=152)

| Factors | Income before Covid-19 | | Income during Covid-19 | | Income post Covid-19 | |
|---|---|---|---|---|---|---|
| | *Sum of squares between groups* | *F* | *Sum of squares between groups* | *F* | *Sum of squares between groups* | *F* |
| Gender | 1.238 | 1.941 | 0.580 | 0.885 | 2.037 | 3.307** |
| Racial Identity | 11.086 | 3.256** | 3.261 | 0.901 | 14.727 | 4.455*** |
| Marital status | 5.173 | 1.708 | 9.517 | 3.269** | 10.484 | 3.634*** |
| Age | 59.404 | 13.488*** | 19.199 | 3.492*** | 68.635 | 16.526*** |
| Level of education | 7.144 | 3.953*** | 1.620 | 0.828 | 4.695 | 2.506* |
| Occupation/Position | 25.750 | 23.886*** | 10.288 | 6.864*** | 29.143 | 29.565*** |
| Years of experience | 32.033 | 9.553*** | 8.931 | 2.243 | 37.012 | 11.502*** |
| ***Note(s)**: *p < 0.05; **p < 0.01; ***p > 0.001* | | | | | | |

#### *4.4.1.2 Multivariate analyses*

Table 4.13 shows the results of the models regressing the impact of employees' socioeconomic/sociodemographic factors on total monthly income. Although, model 1 measures the association between employees' socioeconomic factors and monthly income prior to Covid-19, model 2 and 3 measures the impact of employees' socioeconomic factors on monthly income during and post the Covid-19 pandemic. These three models in Table 4.13 seeks to assess the impact of employees' socioeconomic/sociodemographic factors on total monthly income before, during, and post Covid-19 pandemic in the taxi industry. The goal is to determine if the Covid-19 pandemic has a significant change or impact on total monthly incomes of the respondents.

Regressing for total monthly income before the Covid-19 pandemic based on socioeconomic data in model 1, it shows that there is a strong relationship between taxi industry employees' socioeconomic data toward their total monthly income. With p-values of <0.05, the results show that there is a linear relationship between employees' job position and high total monthly income. This is suggesting that taxi owners are more likely to earn more income relative to their counterparts prior to the Covid-19 pandemic. Similarly, taxi drivers are more likely to earn more income compared to rank marshals. The results also suggested that there is a relationship between older age groups and high years of work experience in the industry to earning more income prior to the Covid-19 pandemic. Indicating that earning more in the taxi industry is also associated with older age group and how long the person has been working in the industry. Therefore, at the top of the food chain is the taxi owners, then the taxi drivers and followed by the rank marshals. Furthermore, while controlling for other variables, the results in model 2 show that there is a significant association between taxi industry employees' job position and earning more income during the pandemic. Again, after controlling for other variables, model 3 results show that there is a significant statistical relationship between the

dependent variable (total monthly income) and taxi industry employees' job position, age, years of working experience, and racial identity post Covid-19 pandemic. Therefore, with the negative correlations indicated in model 1-3 between the dependent variables and (occupation/job position) suggest that on average the values of each of the dependent variable is lower for rank marshals in comparison to their counterparts. These results demonstrates that employees' job position in the taxi industry is significantly associated with earning more income before, during and after the Covid-19 pandemic.

**Table 4.13:** Results of the regression analysis that measures the impact of the Covid-19 pandemic on taxi industry livelihood with demographic factors as independent variables (n=152)

| **FACTORS** | **MODEL 1** Before Covid-19 | | **MODEL 2** During Covid-19 | | **MODEL 3** Post Covid-19 | |
|---|---|---|---|---|---|---|
| | *Coefficient* | *Robust S.E.* | *Coefficient* | *Robust S.E.* | *Coefficient* | *Robust S.E.* |
| Racial Identity | 1875.035 | 1228.690 | -291.222 | 678.175 | 3251.585*** | 1113.536 |
| Marital status | -1899.879 | 1464.723 | -1083.301 | 808.454 | -975.006 | 1327.448 |
| Gender | -2944.884 | 3081.602 | -837.375 | 1700.890 | -1978.438 | 2792.791 |
| Level of education | 1700.815 | 1714.829 | -487.764 | 946.500 | 715.524 | 1554.114 |
| Occupation/position | -6275.189*** | 2111.106 | -3250.903*** | 1165.224 | -7054.987*** | 1913.251 |
| Age | 3754.339*** | 1359.953 | 184.888 | 750.626 | 3038.960** | 1232.496 |
| Years of experience | 3503.281* | 1529.227 | 1606.013 | 844.056 | 3370.967** | 1385.906 |
| Constant | 5678.663 | 9178.684 | 10348.986 | 5066.172 | 5014.094 | 8318.448 |
| *F Statistics, df* | *11.331, (7)* | | *3.434, (7)* | | *13.992, (7)* | |
| *R-Square* | *0.355* | | *0.143* | | *0.405* | |
| ***Note:*** **p<0.05; **p<0.01; ***p>0.001* | | | | | | |

## 4.5 DISCUSSIONS OF RESULTS

The findings of this study demonstrates that the Covid-19 pandemic had a negative impact on the taxi industry in South Africa. In agreement with Fabosi (2016) and Karol (2006), the results indicates that the majority of the people in the taxi industry are Black South Africans (88.2%) who are benefiting from the minibus taxi industry, which offers a cost-effective and decentralised alternative to formalised public transportation. Based on this study's descriptive analysis of respondents' highest educational level, it revealed that most respondents (58.6%) hold Secondary School education (High School). In contrast, 28.3% of respondents say their highest educational level is College/University and about 5.9% hold a post-graduate degree. These results seem to contradict the argument in the literature that people from these groups (taxi industry) are marginalised by society due to their poorer economic status, limited education, and likelihood of living in urban areas (Boudrea

ux, 2006). As shown in this study, at least 34.2% of the participants of this study have higher education qualification as their highest levels of education. In addition, the findings of this study did indicate that higher education levels are associated with earning more income in the taxi industry than those with lower education levels. Accordingly, a study conducted in developed countries shows that Covid-19 disproportionately affects women and workers with low education levels (Adams-Prassl et al., 2020). An evaluation of the impact of the Covid-19 pandemic on South Africans' livelihoods during the pandemic lockdown provides a central argument for these arguments. Covid-19 worsened poverty and vulnerability in the country because it was coupled with severe Level 5 lockdown regulations that prevented low-income households from earning a living (Simon & Khambule, 2021). Additionally, those households with low incomes experienced unequal socioeconomic impacts during the pandemic lockdown, including those with low education and low socioeconomic status (Simon & Khambule, 2021).

The findings of this study further revealed that most of the respondents in this study are taxi owners (73.0%). In addition, a comparison of the levels of education and job position of the study participants revealed that those with higher levels of education (e.g College/University and post-graduate degrees) are more likely to be taxi owners. As such, it is hard to argue that lack of employment (particularly good jobs) is the major cause of many people make a living by working in the taxi business (Seekings & Nattrass, 2008) since some of the taxi owners appears to have other jobs that provide income for them. Of course, this is not to say that its distribution does not creates jobs for those who are currently excluded from getting employment opportunities (Lucas et al., 2016; Fabosi, 2016, Boudreaux, 2006). It is therefore important to point out that it is hard to argue that the industry lack human capital (the necessary skills and social connections to succeed in today's job market), financial capital (money), and social capital (connections) as argued by Seekings and Nattrass (2008). In spite of this, the findings of this study support the argument that taxi drivers, taxi owners, marshals, cooks, car washers, and mechanics are among the people employed by the taxi industry (Boudreaux, 2006). It is critical because most of these people would probably be in dire straits without it, let alone being able to feed themselves. Therefore, the results of this study support the argument that people are gradually being able to escape the vicious circle of poverty in urban areas through the taxi industry in the country (Lucas et al., 2016; Boudreaux, 2006). A key component of the taxi industry is the provision of self-employment opportunities. In light of the high rate of unemployment, self-employment remains an important strategy for survival. In addition to working for themselves, owning a taxi business offers entrepreneurs/operators the

chance to accumulate capital and grow their business expertise (Lucas et al., 2016; Boudreaux, 2006). Besides creating wealth and providing transportation, the taxi industry is relatively inexpensive compared to government-run services.

Though the industry accounts for a larger percentage of work travel than trains and buses, it remains unsubsidized by the government. Reports from other studies revealed that each year, it earns approximately R90 billion or USD 6.1 billion from its fares across the country (Competition Commission, 2018). The taxi associations comprised of individual operators, number around 123 000 in South Africa. It is estimated that the industry spends R39 billion on fuel every year. Insurance costs the industry about R2 billion per year, according to the Competition Commission (2018). While the industry generates R90 billion in revenue, it only pays R5 million in taxes (IOL Reporter, 2021). These are clear indications that the taxi industry generates a lot of revenue. These findings are backed by the descriptive analysis of this study. Here, an analysis of the monthly income of this study's participants revealed that the average take-home income prior to the pandemic was R21499.87, during the pandemic was R6911.54, and post pandemic was R19419.36. However, the standard deviation of this average monthly incomes indicates that there is a huge gap in the average income value across the sample within the taxi industry, before, during and after the heat of the Covid-19 Pandemic.

Although the result of this current study indicates that the pandemic had a huge negative impact on the average income, the post-pandemic income analysis indicates that the industry is recovery from the negative impact of the pandemic. In the post-pandemic income analysis, it is revealed that, although the taxi industry has recovered (more than partially) from the impact of the pandemic, it is not fully recovered. Here, the negative impact of the pandemic can be seen where most of the study participants (52.6%) were earning not more than R5000, with others earning nothing during the pandemic. This is not surprising since previous study revealed that there were a number of taxi industry employees complained that the lockdown caused them to lose money during the Covid-19 pandemic (Fobosi, 2021b). Taxi drivers also complained that the collected fares generated less income (noting that they paid part of the collected fares to taxi owners and saved the remainder for petrol) (Fobosi, 2021b). Similarly, the descriptive analysis of this study revealed that most of the respondents (92.8%) reported that the taxi industry experienced loss of income during the heat of the pandemic. As for job insecurity being elevated during the pandemic, the results showed that (38.8%) of respondents were neutral about their responses, but (38.8%) were equally in agreement that it was elevated.

Despite the descriptive results indicating that many (71%) participants did not lose their jobs during the pandemic, the analysis revealed that the majority (57.2%) feared losing their businesses and/or jobs during the pandemic. In addition, there was agreement among most respondents (91.5%) that the pandemic resulted in a loss of taxi drivers and operators.

According to the results, most respondents (83.5%) agreed that the pandemic also led to losses in vehicles/repossessions of taxis owing to poor revenues. According to a study conducted during the lockdown in 2020, Nomjana (2020) postulates that in addition to losing income and jobs, the lockdown may also prevent some taxi operators from repaying their loans to banks – resulting in their taxis being repossessed. As such, the findings of this study revealed that most participants (68.9%) indicates that the pandemic greatly affected their livelihoods negatively. Similarly, most participants (92.8%) indicated that shortage of passengers was a big challenge during the pandemic and majority of the participants (94.1%) also indicated that the pandemic affects the number of passengers per load. Here, Browning (2018) argues that the industry is considered profitable when there are a lot of commuters. However, due to the pandemic lockdown, this was not possible. Therefore, the Covid-19 pandemic exacerbated the challenges minibus taxis face, despite their significant contribution to South Africa's economy. Taxi minibuses were limited in terms of the number of passengers they could carry and the number of hours they could operate (Fobosi, 2021b). Unfortunately, the taxi industry remains excluded from employment benefits such as UIF, despite the difficult economic conditions such as Covid-19 and unemployment (Fobosi, 2021b). Since the taxi industry remains undeveloped, taxi marshals and drivers do not receive benefits, which highlights their precarious employment conditions (Fobosi, 2021b).

As there has been little support from the government for the industry in the past, it is understandable that the industry did not receive much assistance during the Covid-19 shutdown. The sector receives no operational subsidies during the pandemic, which is something that the government has difficulty changing because of its informal nature (Fobosi, 2021b). Due to this neglect, the industry is in a precarious state (Mhlangu, 2002). The findings from the literature indicate that the government has allocated R1.135 billion for a one-off ex gratia relief package to taxi operators in the whole country (Nomjana, 2020). SANTACO has urged government to increase this amount in order to prevent taxi operators from going out of business. Regardless of the limited support received during the pandemic, the findings of this study did indicate that the few supports the industry received were considered by most

participants to be very effective. Here, the results of this study revealed that 77.7% of the participants considered the governments' policies mandates outside the industry during the pandemic were helpful. Similarly, most of the participants (67.7%) considered the resources offered by the government during the pandemic to be very effective.

On formalisation, the pictures painted in the literature review tells a different story in contrast to the ones revealed from the current study. The findings from the literature review, for the most part, are that attempts to formalise the taxi industry are often made by resistance from the taxi industry employees. Government subsidies may be available for this industry, but the formalization process has been difficult (Fobosi, 2021b). Also, the lack of government supports in the industry through subsidies is argued to be mainly influence by its informal nature (Fobosi, 2021b; Nomjana, 2020; Mhlangu, 2002). In the wake of the Coronavirus pandemic, the government has relied heavily on the taxi industry to provide public transportation (Fobosi, 2020b,c). Consequently, the government has declared that greater formalization will be necessary to achieve subsidies (Luke, 2020). Subsidizing minibus taxis and regulating them leave the rest of public transportation untouched. The transport sector is crucial for the economy to function, but it is also affected by any changes in economic activity. The Coronavirus disease has thus highlighted the importance of transportation in a post-Covid-19 world. Given the history of under-subsidisation of public transport services (Luke, 2020), and the informal nature and fierce independence of the industry, it is still unclear whether a program of this type is affordable, feasible, or even desirable, given the failure of formalization in the past. Well, the findings of this study for example, suggested that most of the respondents (64.4%) strongly disagreed or disagreed that there is a high risk that formalising the industry would cripple the economy of the industry. Based on this result, the majority of the participants do not see formalisation as a threat to the taxi industry from an economic perspective. Similarly, most of the participants (54.6%) disagreed that the industry is better off on its own without formalisation. Consequently, the majority of the respondents (82.3%) are in agreement that formalising the taxi industry will ensure job security for everyone in the taxi industry. Therefore, these results indicates that most of the participants believe that the taxi industry needs formalisation to promote integration into the formal economy, thereby promoting job security and reducing the precarious nature of the industry by promoting healthy labour relations and policies that protect its workers. The descriptive analysis also revealed that majority of the respondents (92.8%) are in agreement that government support and resources are essential towards increasing the level of sustainability in the industry. The results further

suggest that most of the participants (93.5%) are in agreement that more government support and intervention are required for formalisation. These results also indicate that having government support and resources would be crucial towards formalising the taxi industry. Likewise, most of the respondents (69.8%) are also in agreement that incorporating tax laws in the industry would help to formalise the taxi industry. Based on these results, implementing tax returns into the taxi industry is a welcome idea by most of the workforce, mostly because it can help formalize the industry.

Previous studies revealed that taxi drivers and taxi marshals continue to face precarious working conditions as a result of the recent pandemic (Fobosi, 2021b). Taxi drivers and owners have been engaged in exploitative labour agreements since the taxi industry was introduced in South Africa, which appear to maximize profits at all costs. According to Mahlangu (2002), this is due to the lack of formalized work contracts. The informal way of doing business was maintained by lowering labour costs and ignoring safety in general. Because taxi drivers work in poor conditions, the Basic Conditions of Employment Act (Mmadi, 2012) does not apply to them. Studies suggest that most minibus taxi operations are unregulated and informal (Selekane, 2014; Mmadi, 2012). It is evident, for instance, in the quota system still in place in the industry. When taxi drivers and rank marshals face financial hardships such as Covid-19 and unemployment, they do not qualify for the Unemployment Insurance Fund (UIF). The precarious employment conditions of taxi drivers and taxi marshals are increased by the lack of benefits, as minibus taxis continue to be neglected and unsubsidized (Fobosi, 2021b). This is very evident in the currently study. This study revealed that taxi owners are more likely to earn more as compared to taxi drivers and rank marshals. In summary, the findings of this study (based on a Chi-square test and ANOVA) indicated that the average income of taxi owners before, during and post Covid-19 is higher compared to rank marshals and taxi drivers. When rank marshals and taxi drivers are compared, rank marshals earn much less than taxi drivers. These findings were further supported by the results of the regression analysis that measures the impact of the Covid-19 pandemic on taxi industry livelihood with demographic factors as independent variables. On average, the results revealed that the values of monthly income before, during and post Covid-19 are lower for rank marshals in comparison to their counterparts based on the negative correlations indicated in model 1-3 between the monthly income variables and (occupation/job position). The results of this study demonstrate that taxi owner have a higher income before, during, and after the Covid-19 pandemic, thus earning more incomes in the industry is depending on their job position. Therefore, at the top of the

food chain is the taxi owners, then the taxi drivers and followed by the rank marshals. These results suggests that rank marshals and taxi drivers are placed in a position of precarity because of the nature of their work. The result is that taxi drivers are subjected to poor working conditions that do not conform with the Basic Conditions of Employment Act (Mmadi, 2012). Therefore, due to the precarious working conditions in the taxi industry, the precariat suffers from the following types of insecurity. The precariat experiences insecure work conditions either because of a lack of work; low incomes leading to poor and insecure living conditions; and unsecure representation due to the absence of unions (Paret, 2013).

Considering that black workers in South Africa have no job security, this emphasizes the precarious nature of their work in the taxi industry. Unlike job security, employment security is mainly suited to a flexible labour market, which is the opposite of job security. The concept of employment security refers to having access to employment throughout one's career, in contrast to job security, which refers to staying with the same employer (Fobosi, 2021b). Based on a study of Brazilian taxi drivers' work ability and quality of life, Sanchez et al (2019) found that urban transport drivers, particularly taxi and motorcycle taxi drivers, are exposed to a number of environmental, societal, and health risks related to their occupation. South African taxi drivers and marshal experience the same precarious working conditions as those described by Sanchez et al (2019) in Brazil's taxi ranks. This is quantifiably supported by the findings of this current study as demonstrate in the results sections. It is generally true that workers without contracts (such as rank marshals and taxi drivers), as well as temporary or flexible workers, are more likely to be precarious. Additionally, precarious work is characterized by a lack of certainty in contract duration (Bhorat et al., 2016), which is very common in the South African taxi industry. Therefore, a high probability of precariousness exists when workers are subject to low wages, job insecurity, stress, illness, limited career development and training, and low collective rights similar to those reported in this study.

## 4.6 CHAPTER SUMMARY

The findings of this study demonstrate how the pandemic exposed the precarious working conditions faced by taxi drivers and taxi marshals. The phenomenon is not new, but for the first time in the speculation of this phenomenon, the current study was able to quantify the extend this phenomenon has on rank marshals and taxi drivers. Unfortunately, taxi owners and taxi drivers have a long history of exploitative labour arrangements in South Africa's minibus taxi industry, which seems to maximize profits at all costs for taxi owners at the detriment of the

rank marshals who are at the lowest rank of the food chain followed by taxi drivers. A lack of formal work contracts was one of the primary reasons for this.

Since minibus taxis operate in the informal sector and do not receive subsidies, it is not possible to implement subsidies within the industry without an accounting system. Thus, this study revealed that most of the respondents are in agreement that incorporating management, accounting and taxation models in the taxi industry would influence the formalisation of the taxi industry. In this regard, a recovery of the economy and its formalisation will be difficult without a clear economic policy and without a solid transport sector backed by government support. This entails that those at the lower ends of the food chain will continue to be victims of the precarious nature of the industry with no job security. Therefore, in the post-Covid-19 era, it would be important to realize the importance of transportation for socioeconomic development, to hold strong discussions, to promote public and private participation, to develop strategic directions to promote development and transformation, and to make hard decisions with strong political will.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## 5.1 INTRODUCTION

Following the analysis and discussion of results in the previous chapter, this chapter presents a summary of the findings, conclusions, and recommendations based on the data examined in the previous chapter. Conclusions are drawn based on major findings of the research and a review of the literature. In addition, some limitations have been identified. The last section of the chapter presents the chapter summary.

## 5.2 SUMMARY OF THE RESEARCH

The overriding purpose of this study was to determine the impact of the Covid-19 pandemic on the taxi industry in South Africa. To accomplish that goal the researcher deemed it necessary to reach some prerequisite goals. Determining what socioeconomic factors, labour relations, organisational factors and policies in the industry that are associated with economic outcomes in the industry. This assumed a high degree of importance during the literature review conducted for this research. In relation to that effort, it became essential to reach an understanding about the nature and concept of the taxi industry in South Africa. Hence, both the background and the introduction of the study in chapter one, and as well as the literature review in chapter two were done by studying the literature on the phenomenon both internationally and nationally. After these fundamental steps were achieved to a certain degree, this research was able to go forward. Therefore, using a sample of 152 taxi industry employees in the Free State province in South Africa, this study explored and studied the impact of the Covid-19 pandemic on the taxi industry. In it, the study also unravelled how socioeconomic factors impacts on the economic outcomes of the industry.

The study was an exploratory, descriptive and quantitative study. Thus, the researcher adopted a non-experimental quantitative research approach for extracting the required data for this study. Using an explanatory research approach allowed the researcher to provide an in-depth evaluation, investigation, understanding and insight analysis about the impact of the pandemic on the South African taxi industry. This was significant toward achieving the research objectives. Therefore, the chosen research approach was appropriate because it allowed the researcher to compare and establish the degree to which the findings from this study are similar

or dissimilar with other findings (Kumar, 2014; Engel & Schutt, 2013; Creswell, 2013; Tolmie et al., 2011; McMillan & Schumacher, 2010; Burns & Grove, 1993). Since data collection is a systematic and precise gathering of information that are deem necessary and specific for research purposes (Grove et al., 2013), this study used a primary data to answer the research questions. Therefore, because of its significance to the primary goal of this study and how it fit well with the methodology of this study, the researcher used a well-structured researcher questionnaire with high levels of reliability score values to achieve the research objectives. Therefore, through the use of a questionnaire for this study, data were collected, cleaned and analysed to address the research problems posed in chapter one. The results of this study are therefore presented and discussed relative to the reviewed literatures in chapter four.

## 5.3 CONCLUSIONS

The conclusions section presents a bird-view of the results from the quantitative study that assessed the impact of the Covid-19 pandemic on the taxi industry in South Africa. These conclusions are presented based on the literature review and the research's major findings.

### 5.3.1 Conclusion on the Literature Review

There is limited scientific literature, quantitively documenting the impacts of the Covid-19 pandemic on the taxi industry in South Africa. Of the studies that do documents the impact of the Covid-19 pandemic in the country, they are mainly qualitative in nature. On the labour relations and nature of the industry, the literature revealed that this industry has historically featured an explorative business model where employers and employees have negotiated exploitative labour contracts to maximize profits at all costs. Fabolsi (2016) explains that informal business models have thrived by minimizing labour costs and disregarding safety regulations. A major challenge for the Department of Transportation is subsidizing the industry. However, since the 1994 democratic elections, there have been efforts to formalize or regulate the industry. In order to achieve this, we must provide safe and affordable transportation, well-trained drivers, reasonable profits (not excessive profits), and acceptable employment relationships (Mahlangu, 2002). Additionally, there is 'Sectoral Determination 11: Taxi Sector' (Department of Labour, 2011) that regulates the taxi industry in the country. Those in the taxi industry fall within the scope of the Sectoral Determination. A driver, for example, works 48 hours a week, is entitled to overtime income and lunch breaks, and has the right to annual leave (Department of Labour, 2011). This determination entails regulations for

minimum wages, work hours, leave, prohibiting the employment of children, terminating jobs, and other general provisions on the taxi industry. Despite these regulations, studies have shown that taxi owners usually sidestep them to keep labour costs low or avoid them altogether (Fobosi, 2021a, 2020a, 2019; Fobosi & Fobosi, 2019; Mahlangu, 2002).

In order to understand the taxi industry, we must take into account its dynamics, its dangers, and the difficulty of understanding it (Mahlangu, 2002). This industry is extremely complex in terms of how work is organized. There is no doubt that taxi drivers do not know how to exercise their right to work. Unlike subsidised buses, minibus taxis operate very decentralised, much like roadside hawkers. Taxi owners and drivers function independently in this industry (Fobosi, 2021a, 2020, 2019; Fobosi & Fobosi, 2019). Drivers make decisions every day about how to run their businesses so that they can make the most money. In the taxi industry, drivers are expected to earn as much money as possible. Making the taxi drivers' work much less structured and regulated than that of formalized public transport such as trains and buses. It is basically a commission-based system for taxi drivers. Essentially, taxis are commission-based businesses. According to the commission scheme, a taxi owner/operator will tell the taxi driver they have to collect a certain amount of money in their pocket for the day, and how they make that amount is up to the taxi driver – suggesting that the driver decides how much to make. Thus, the industry's nature makes it difficult to enforce the Sectoral Determination. As a result, it is not unusual for taxi owners/operators to hire someone today and then another the next day. This is just one of the many challenges employees face in this industry - someone today, another tomorrow.

From the literature review, there seems to be a consensus that the government does not subsidise the taxi industry and they do not have dedicated lanes for priority (Bruun et al., 2015). Following the Coronavirus pandemic, the government has resorted to minibus taxis as a means of filling the void in public transportation (Fobosi, 2020b,c). Government officials have responded by pointing out that this highlights the need for subsidies, which can be achieved only through greater formalization (Luke, 2020). It is unclear whether such a program is affordable, feasible, or even desirable given the history of under-subsidising public transportation services (Luke, 2020), due to the failure of formalization in the past and the informal nature of the industry and fierce independence. Due to its role in bridging the economy as a whole, transportation is essential for the economy to function, yet it is also affected by any changes in economic activity. As a consequence, public transportation services in low-income

and developing countries are usually poorly regulated, lack adequate safety and hygiene standards, and are not subsidized, resulting in a largely dependent income for drivers (Tirachini 2019; Gwilliam 1999). Thus, the findings from the literature review indicates that there were a number of taxi owners/operators who complained that the lockdown caused them to lose money during the Covid-19 pandemic (Fobosi, 2021b). In the same way, taxi drivers complained that fares were now generating less revenue (noting that they kept about half of the fares collected and paid the rest to the taxi owners) (Fobosi, 2021b). Furthermore, some taxi owners/operators were unable to repay their banks' loans during the lockdown, thereby resulting to the repossession of their taxis (Nomjana, 2020). Given the lack of government support the industry has received in the past, it is understandable that it received limited support during the Covid-19 lockdown. Because of this neglect, the industry suffers from precarious conditions (Fobosi, 2021b,c; Nomjana, 2020; Tirachini 2019; Mhlangu, 2002; Gwilliam 1999). As an informal sector, the sector does not receive operational subsidies, which the government finds difficult to change due to the informal nature of the industry (Fobosi, 2021b). Regardless, the government can provide subsidies to the industry, but the formalization process has been problematic.

The recent pandemic also revealed that taxi drivers and taxi marshals continue to work in precarious conditions (Fobosi, 2021b). It is important to note, however, that these conditions are not new. It seems that exploitative labour agreements have characterized the taxi industry in South African since minibus taxis were introduced, which maximize profits at any cost. This is attributed to the lack of formalized work contracts, according to Mahlangu (2002). Keeping informal business in place was achieved by lowering labour costs and disregarding labour relations safety generally. Consequently, taxi drivers and rank marshals are not covered by the Basic Conditions of Employment Act (Mmadi, 2012). Based on this study's literature review, state intervention and taxi industry willingness to change are key to the industry transformation's success. It is crucial to develop the public transport system in South Africa since it is of utmost importance in the country’s economy. Providing subsidised public transport services may provide new opportunities for the industry by integrating it into a larger public transport network that offers job security especially for taxi drivers and rank marshals. Government subsidies are therefore dependent on whether or not the taxi industry changes its business model.

### 5.3.2 Conclusions on the Research's Findings in Line with the Study's Objectives.

#### *5.3.2.1 The impact of Covid-19 pandemic on the taxi industry through the lived experience of taxi owners, taxi drivers and rank marshals in the Free State province.*

When asked whether Covid-19 affected the wellbeing of the taxi industry personnel, the descriptive computation of this study revealed that about (n=46; 30.3%) of the respondents reported that they agreed and (n=88; 57.9%) reported that they strongly agreed. With M= 4.36 and SD= 0.986, this result indicates that most of the participants (88.2%) are in agreement that the pandemic affect the wellbeing of the taxi industry personnel. Similarly, with a mean score of 4.59 and a standard deviation of 0.784, the descriptive computation of this study revealed that most of the respondents (n= 108; 71.1%) reported that they strongly agreed that the taxi industry experienced loss of income during the heat of the pandemic and (n=33; 21.7%) also agreed to that. This is suggesting that the majority of the respondents (92.8%) are in agreement that the industry incurred economic loss during the heat of the pandemic. On losing their jobs during the pandemic, the results revealed that about (n= 61; 40.1%) of the respondents disagreed about losing their job during the pandemic, which is also echoed by (n= 47; 30.9%) of the respondents who strongly disagreed about losing their jobs. With M= 2.26 and SD= 1.259, the result here suggests that most of the respondents (71%) reported not losing their jobs during the pandemic. On job insecurity being elevated during the pandemic, the results indicated that while (n=59; 38.8%) were neutral about their responds, about (n= 59; 38.8%) of the respondents were equally in agreement that the pandemic elevated job insecurity in the taxi industry.

Although the results indicate that most of the respondents (57.2%) disagreed about running out of money to buy food during the pandemic, most of the respondents (88.9%) reported that the pandemic greatly affected their livelihoods. The descriptive analysis further revealed that the majority of the respondents (93.4%) were in agreement that they were afraid of getting infected by the Covid-19 virus. Similarly, the descriptive statistics also revealed that about (94.1%) of the respondents reported having concerns for their families and customers during the heat of the pandemic. Even though the descriptive results indicates that most of the participants (71%) did not lose their jobs during the pandemic, the analysis revealed that most of the respondents (57.2%) were afraid of losing their jobs and/or business during the pandemic where M= 3.52 and SD=1.223.

On increase of fuel prices being disruptive during the pandemic for the taxi industry, only about (45.4%) of the respondents were in agreement that it had a negative impact in the taxi industry and 30.3% of the respondents were neutral about it. With M=4.41 and SD= 0.833, the descriptive analysis indicates that the majority of the respondents (92.8%) were in agreement that the shortage of passengers was a big challenge during the pandemic. Similarly, with M=4.45 and SD= 0.744, the results also revealed that majority of the respondents (91.1%) were in agreement that it takes longer time to get the required number of passengers during the pandemic. In the same fashion, most of the respondents (94.1%) were equally in agreement that the pandemic affects the number of passengers per load, where M=4.61 and SD= 0.884. Furthermore, the majority of the respondents (91.5%) were in agreement that the pandemic resulted in the loss of taxi drivers and taxi operators with M=4.18 and SD= 0.710. Similarly, the results revealed that most of the respondents (83.5%) were in agreement that the pandemic also resulted in the loss of vehicles/repossessions of taxi due to poor revenues, with M=4.12 and SD=0.745. Therefore, with a total mean score of 65.18 and a standard deviation of 6.98, the descriptive analysis of this study indicates that the Covid-19 pandemic impact negatively on the taxi industry, where the median score is 64.00.

The recent pandemic also revealed that taxi drivers and taxi marshals continue to work in precarious conditions (Fobosi, 2021b). It is important to note, however, that these conditions are not new. It seems that exploitative labour agreements have characterized the taxi industry in South African since minibus taxis were introduced, which maximize profits at any cost.

The findings of this study estimated that in the years prior to the pandemic, the average take-home income was R21499.87 and the standard deviation was R16936.554, with the median income at R1500 and the maximum income at R90,000. During the Covid-19 pandemic, the average take-home income was R6911.54 and the standard deviation was 8109.045, with a median income of R5000 and a minimum and maximum incomes of R0.00 and R65000 respectively. Based on the descriptive computation conducted between October and November 2023 during the post Covid-19 pandemic, total income was averaged R19419.36, with a standard deviation of R15976.714, such that the median total income was R15000, with a minimum income of R1242 and a maximum income of R80000. It must be noted, however, that although the taxi industry has recovered somewhat from the pandemic's negative impact (to a greater extent), it still has not fully recovered from what it used to be prior to the Covid-19 pandemic. As a result, the standard deviations in this study showed a large gap in the average

income value within the taxi industry before, during, and after the Covid-19 pandemic. Accordingly, this study's descriptive results indicate that the Covid-19 pandemic negatively affected the taxi industry, thereby negatively affecting its economic growth.

In addition, based on this study's results, most respondents (92.8%) reported that the taxi industry suffered income losses during the pandemic. This indicates that most respondents (92.8%) agree that the industry suffered economic losses during the pandemic. However, the results revealed most of the respondents of this study (71.0%) did not lose their jobs during the pandemic. While most respondents (71%) did not lose their jobs during the pandemic, the analysis revealed that most respondents (57.2%) were afraid of losing their jobs and/or businesses. More so, as shown by the descriptive analysis, most respondents (92.8%) agreed that the shortage of passengers was a major problem during the pandemic. The results also revealed that most respondents (91.1%) agreed that getting the necessary number of passengers takes longer during the pandemic. Furthermore, most respondents (94.1%) agreed that the pandemic affects the number of passengers per load. Similarly, most respondents (91.5%) agreed that taxi drivers and taxi operators lost their jobs as a result of the pandemic. The results also revealed that most respondents (83.5%) agreed that poor revenues resulted in the loss of vehicles and repossessions of taxis due to poor revenue during the pandemic. In summary, the Covid-19 pandemic negatively affected the taxi industry based on the descriptive analysis of this study.

#### *5.2.2.2 The efficiency of types of support the taxi industry received during the pandemic in the Free State.*

On the type of support received during the Covid-19 pandemic, the descriptive analysis, indicates that there were 683 total responses, with the response percentages ranging between 0.0% to 22.3%. The percentages of the cases indicates that 93.4% of the respondents reported that they received **formal training** to curb the virus, all the respondents (100%) reported that they received **personal protective equipment (PPE)** supplies during the pandemic, 99.3% of the respondents reported that they received supports in the form of respond to impact-specific needs (e.g Covid-19 policies), 98.7% of the respondents reported receiving **regular communications** and updates about the pandemic polices, and 57.9% of the respondents reported receiving crowd funding to control job insecurity. However, the results indicated that none of the respondents received **food supplies** during the pandemic. Therefore, the findings

of this study indicates that the taxi industry did receive some support during the pandemic to assist the industry to function adequately during the pandemic.

In this study, the descriptive analysis of this study indicates that the supports received by the taxi industry during the pandemic was very effective. Here, as determined by the results of the survey (mean score 3.81, standard deviation 0.874), the majority (70.4%) of respondents agreed that the responds provided to impact specific needs within the taxi industry were very helpful. Additionally, most respondents (77.7%) agreed that **government policies and mandates** outside the taxi industry helped keep the taxi industry's business afloat during the pandemic. Over 74.3% of respondents agreed that the **management sector of the industry** protected their business interests and ensured job security during the pandemic. Most respondents (67.7%) also believed that the **resources** provided by the government during the pandemic were very effective.

#### *5.3.2.3 Possible policies and structural changes needed to improve the operational and labour relations in the industry.*

It is of paramount important that policies that would be a guiding tool for the operation in the taxi industry for local, short and long distance routes. Currently, there are no policies except practices that permit holders agreed upon which in most cases, they are difficult to implement and lead to conflicts in most routes. The government and SANTACO should ensure that these policies are developed and implemented to ensure smooth operation in all routes, leading to an efficient formalisation process.

To accurately assess the taxi industry formalisation, the researcher evaluates the factors affecting the formalisation of the taxi industry and as well as determine what ways can be adopted to facilitate the formalisation of the taxi industry. On the factors affecting the formalisation of the taxi industry, with M= 2.34 and SD= 1.357, most of the respondents (64.4%) strongly disagreed or disagreed that there is a high risk that formalising the industry would cripple the economy of the industry. This result indicates that formalisation is not viewed as an economic threat to the taxi industry by most of the study participants. As such, with a mean score of 4.05 and a standard deviation of 1.019, the majority of the respondents (82.3%) are in agreement that formalising the taxi industry will ensure job security for everyone in the taxi industry. Similarly, when asked if the industry is better off on its own without formalisation, most of the respondents (54.6%) strongly disagreed or disagreed on that. With a

mean score of 2.55 and a standard deviation of 1.072, this result indicates that most of the participants believe that the taxi industry needs formalisation to promote integration into the formal economy. In addition, with M= 3.75 and SD= 0.971, most of the respondents (66.4%) are in agreement that lack of government support is affecting the formalisation of the industry. Therefore, these results indicates that most of the participants are open to receiving government support for the facilitation and formalisation of the taxi industry into the formal economy, thereby indicating no resistance to the idea of formalisation in the taxi industry.

On ways to facilitate the formalisation of the taxi industry, the descriptive analysis revealed that majority of the respondents (92.8%) are in agreement that government support and resources are essential towards increasing the level of sustainability in the industry, with M=4.32 and SD=0.713. In a similar fashion, the results revealed that most of the respondents (93.5%) are in agreement that more government support and intervention are required for formalisation, where M=4.48 and SD=0.754. This results also indicate that having government support and resources would be crucial towards formalising the taxi industry. Furthermore, majority of the respondents (91.5%) are in agreement that subsidizing the taxi industry would be helpful towards formalisation. Likewise, most of the respondents (69.8%) are also in agreement that incorporating tax laws in the industry would help to formalise the taxi industry, where M=3.80 and SD=0.958. These results indicate that implementing tax returns into the taxi industry is a welcome idea by most of the workers in the industry, mainly because of its ability to foster formalisation of the taxi industry.

Concerning the formalisation of the taxi industry, the majority (64.4%) of respondents strongly disagreed or disagreed that formalising the industry would cripple its economy. The results of the study indicate that the majority of study participants do not see formalisation as an economic threat. Consequently, the majority of respondents (82.3%) believe that formalizing the taxi industry will ensure job security for all. Hence, the majority of the respondents (54.6%) strongly disagreed or disagreed when asked if the industry would be better off without formalisation. Also, according to the majority of the respondents (66.4%), government support is preventing the formalisation of the industry. The results also revealed that the majority of respondents (93.5%) agree that more government intervention and support are needed for formalisation. As shown by the descriptive analysis, 92.8% of respondents are in agreement that government support and resources are necessary for the industry to increase sustainability. It is also noted that majority of the respondents (91.5%) support subsidizing the taxi industry

in order to formalize it. Consequently, these results suggest that most participants are open to receiving government support in order to facilitate and formalise the taxi industry into a formal economy, thus indicating no opposition to formalisation. Therefore, the results of this study demonstrate that most participants agree that formalization will promote integration of the taxi industry into the formal economy. In addition, based on the descriptive analysis, the majority of respondents (82.2%) agree that applying management principles and accounting would help formalize the taxi industry. Furthermore, 69.8% of respondents agree that incorporating tax laws into the taxi industry would help to formalize it. As shown by these results, most workers in the taxi industry support introducing tax returns, primarily because they can help formalize the industry.

#### *5.3.2.4 Suggested mechanisms to ameliorate Covid-19's effect on taxis.*

**Formalisation:** With a mean score of 2.55 and a standard deviation of 1.072, this result indicates that most of the participants believe that the taxi industry needs formalisation to promote integration into the formal economy. It there important that the Government, SANTACO and Taxi Alliance develop a policy whereby permit holders must have VAT registration number. Secondly, permit holders must be compelled to provide an annual financial statement, the auditors based on the PI score should advise the permit holder to accordingly.

**Subsidisation:** The majority of the respondents (91.5%) agree that subsidising the taxi industry would be helpful towards formalisation. The Government, SANTACO and Taxi Alliance should agree on the model, percentage of subsidisation should be based on the number of trips and the capacity of the car as it appears on the data base of the Department of transport. The percentage of subsidisation will differ according to the local, short and long-distance trips.

**Technology:** The result of this study further revealed that most of the respondents (87.5%) agree that adopting new technology in handling business transactions and passengers in the taxi industry will facilitate the formalisation of the industry. With M=4.39 and SD= 0.870, this result indicates that the majority of the respondents believe that the adoption of modern technology in handling business transactions in the taxi industry can facilitate formalisation in the industry. As such, suggesting that technology is crucial to formalising the taxi industry.

It should be a must that all legal taxis with permits install the following devices:

(a) Tracker to determine the number of trips to and from the taxi rank.
(b) Passenger sensors to determine the number of passengers per trip, and in case of local routes, to determine how may passenger off loaded and loaded before the taxi reach the taxi rank or destination.
(c) Cameras to record the activities in the taxi and for security purposes.
(d) Pay point machine for payment, and in case of cash payment, other devices will assist to show how may cash payments were made.
(e) Each province should have data centres based on the cities and towns, where the electronic information will be fed into, the permit holder will receive information daily at the end of the business depending on the route. Data centres may be a secured place near the taxi ranks or in police station in towns.
(f) Report of number of trips and amount generated per trip will be sent daily to the permit holder, and government will use this information to pay subsidy percentage monthly to the permit holder's account.

In order to achieve these, government should remove all illegal taxis and this will create more job opportunities for law enforcement in all the provinces.

**Management Principles:** With M= 4.09 and SD=0.813, the descriptive analysis revealed that most of the respondents (82.2%) agree that the application of management principles and accounting would be helpful towards formalising the taxi industry. Governance, leadership and management are of paramount important in the taxi industry. Informality has been the corner stone of the taxi industry for years, hence the are always conflict over routes. Formalisation will change how things are done in the industry because management principles would be key.

**Tax Laws:** Likewise, most of the respondents (69.8%) are also in agreement that incorporating tax laws in the industry would help to formalise the taxi industry, where M=3.80 and SD=0.958. These results indicate that implementing tax returns into the taxi industry is a welcome idea by most of the workers in the industry, mainly because of its ability to foster formalisation of the taxi industry.

When taxi permit holders pay tax, this would enable the government to generate more income through tax to subsidise the industry.

**Restructuring Leadership:** Many of the respondents (54.6%) agree that restructuring the current leadership structure in the taxi industry would help towards the formalisation of the

industry. Therefore, the findings of this study indicate a positive attitude and acceptance towards formalisation.

When restructuring leadership, there must be perquisites to be in the leadership of any structure of the taxi industry, e.g., minimum level of education which will enable position holder to have in order to lead, manage and have clear understanding or interpretation of policies and relevant statutes.

**Prioritisation of Public Transport:** The results revealed that most of the respondents (72.4%) agree that prioritising public transportation over the use of private cars can also enhance the formalisation of the taxi industry. Similarly, many of the respondents (54.6%) agree that restructuring the current leadership structure in the taxi industry would help towards the formalisation of the industry. Therefore, the findings of this study indicate a positive attitude and acceptance towards formalisation.

The use of private cars without permits is illegal. There are many sedan and mini buses that are operating as taxis on number of routes, and some are owned by the same permit holders.

#### *5.3.2.5 Recommendations for a strategic approach towards subsidisation and improving labour relations in the industry.*

Concerning subsidisation, majority of the respondents (91.5%) agree that subsidizing the taxi industry would be helpful towards formalisation. Likewise, most of the respondents (69.8%) are also in agreement that incorporating tax laws in the industry would help to formalise the taxi industry, where M=3.80 and SD=0.958. These results indicate that implementing tax returns into the taxi industry is a welcome idea by most of the workers in the industry, mainly because of its ability to foster formalisation of the taxi industry. Consequently, many of the respondents (86.2%) agree that having clarity on subsidy allocation would facilitate the formalisation process easily. This is very critical because having a clear knowledge and understanding the subsidy allocation and how it would be infused and managed within the taxi industry will make it easier for the workers and the industry at large to welcome the idea of formalising the industry. Therefore, the findings of this study indicate a positive attitude and acceptance towards formalisation which will eventually lead to subsidisation.

Strategic approach would therefore be to develop policies, enforce relevant statutes including labour and tax laws in the taxi industry to pave way for formalisation and subsequently subsidisation.

## 5.4 LIMITATIONS

The following are limitations of this study:

- Because this study only studied a sample of 152 respondents, the generalization of some of the findings from this study is limited by it sample size.
- The lack of knowing the actual population size of the target population limits the accurate estimation of the study sample size.

## 5.5 RECOMMENDATIONS

The following recommendations are offered for interventions and further research in the field of informal economy in the transport system:

- The results from this study express the need for comprehensive research and longitudinal studies of taxi industry employees to understand how the labour contracts affect job security and economic development especially among rank marshals and taxi drivers. In relation to interventions, rank marshals and taxi drivers require protection from the department of labour.
- To understand the connection between job position and monthly income in the taxi industry, social policies beneficial to employees in the industry need to be taken urgently. The important social policies suggested by the researcher include improving minimum wages (especially for rank marshals and taxi drivers), balancing economic development and wealth (resource) distribution in the industry, creation of unions for rank marshals, and focusing on formalisation.
- As noted throughout this study, most of the respondents expressed no resistance to formalization of the taxi industry. Thus, the promotion of subsidies, formalization, tax laws, and management and accounting principles should be a collective social responsibility in South Africa. Hence, government support and financial investment are

required in the taxi industry to promote, protect and support job security through formalisation.

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# APPENDICES

## Appendix A: Ethical Clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

16 January 2023

**Thabo Olehile Zacharia Moeng (220063762)**
**School of Management, IT & Governance**
**Westville Campus**

Dear OTZ Moeng,

**Protocol reference number:** HSSREC/00004888/2022
**Project title:** The impact of coronavirus pandemic in the taxi industry in South Africa
**Degree:** Masters

### Approval Notification – Expedited Application

This letter serves to notify you that your application received on 12 October 2022 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

**Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.**

This approval is valid until 16 January 2024.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

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**Professor Dipane Hlalele (Chair)**

**/dd**

**Appendix B: SANTACO permission letter**

SANTACO FREE STATE

Provincial Taxi Council

Date: 21st July 2022

Mr. TOZ Moeng (SN 220063762)
School of Management, IT and Governance
College of Law and Management Studies
Westville Campus UKZN
Email: 220063762@stu.ukzn.ac.za

Dear Mr. Moeng

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the Motheo District and Mangaung Metropolitan Municipality for your postgraduate studies. We note the title of your research project is:

**"The impact of the COVID-19 pandemic on the Taxi Industry in South Africa."**

It is noted that you will be constituting your sample by conducting interviews among the taxi drivers, taxi operators, commuters or passengers, and the executive members of associations, district and provincial councils who reside and/or work in the Free State province (Motheo District and Mangaung Metropolitan Municipality). The data subjects' information must be kept confidential and may not be disclosed to anyone except to your Supervisor and the University of KwaZulu-Natal.

Yours Sincerely

[redacted]

**M. E. Mthimkulu**
**Provincial Chairperson**
**SANTACO**
**Free State Province**

Santaco House
37 Kenneth Kaunda Drive • Bayswater • Bloemfontein • 9300
P. O. Box 7165 • Bloemfontein • 9300
Tel: +27 (0) 51 436 3810 • email: info@santacofs.co.za

**Appendix C: Questionnaires**

# RESEARCH QUESTIONNAIRE

# DIPOTSO TSA PHUPUTSO

**The impact of coronavirus pandemic in the Taxi Industry in South Africa**

**Sekgahla sa sewa sa corona hodima Indasteri ya Ditekesi Afrika Borwa**

*The study you are participating in is about the taxi industry in South Africa. The prime purpose of this study is to explore the impact of Covid-19 pandemic on the taxi industry in South Africa.*

*Phuputso eo o nkang karolo ho yona e mabapi le indasteri ya ditekesi Afrika Borwa. Sepheo se ka sehloohong sa phuputso ena ke ho lekola sekgahla sa Covid-19 hodima indasteri ya ditekesi Afrika Borwa.*

**The survey will take no more than 15 minutes to complete.□**

**Tekolo ena e tla o nka ho sa feteng metsotso e 15 ho e phethela.□**

1

**DM: DEMOGRAPHICS** *(Please tick [√] or circle the appropriate box)*
**DM: SEBOPEHO SA SETJHABA** *(Ka kopo tshwaya [√] fkapa o etse sedikadikwe lebokoseng le tshwanetseng)*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DM-01 | What is your **age**? Dilemo tsa hao di kae? | | DM-02 | What is your **race**? Morabe wa hao ke ofe? | African[1] Moafrika[1] | White[2] Lekgowa[2] | Indian[3] Moindia[3] | Coloured[4] Lekhalate[4] | Other[5] Ho hong [5] |

| | | | | | |
|---|---|---|---|---|---|
| DM-03 | What is your **marital status**? Boemo ba hao ba lenyalo ke bofe? | Single [1] Ha ke a nyala/nyalwa[1] | Married/living together [2] Nyetse/Nyetswe/Phedisana mmoho [2] | Widowed [3] Mohlolohadi [3] | Separated/Divorced [4] Arohane/ Hlalane [4] |

| DM-04: Gender/Sex: Bong | |
|---|---|
| Male [1] Monna [1] | Female [2] Mosadi [2] |

| DM-05: Level of Education Attained: Boemo ba thuto bo fihletsweng | | | | |
|---|---|---|---|---|
| No Education [0] Ha ke a kena sekolo [0] | Primary [1] Poraemari[1] | High school [2] Sekolo se Phahameng [2] | College/University [3] Koletjhe/Yunivesithi [3] | Post-graduate [4] Lengolo le ka hodimo la yunivesithi [4] |

| DM-06: Years in the taxi industry Dilemo o le indastereng ya ditekesi |
|---|
| |

| DM-07: Occupation/Mosebetsi | | |
|---|---|---|
| Taxi owner [1] Monga tekesi [1] | Taxi Driver [2] Mokganni wa tekesi [2] | Rank Marshal [3] Mothusi wa bapalami renkeng [3] |

**CI: Covid-19 Impact on the Taxi Industry** *(Please tick [√] or circle the appropriate box)*
**Sekgahla sa Covid-19 hodima Indasteri ya Ditekesi** *(Ka kopo tshwa [√]kapa o etse sedikadikwe lebokoseng le tshwanetseng)*

| IC-02: Total Monthly income before Covid-19/Kuno Yohle ya Kgwedi le Kgwedi pele ho Covid-19 | IC-02: Total Monthly income during Covid-19/Kuno Yohle ya Kgwedi leKgwedi nakong ya Covid-19 | IC-03: Total Monthly income post Covid-19/Kuno Yohle ya Kgwedi le Kgwedi kamora Covid-19 |
|---|---|---|
| R | R | R |

| CI | Please rate your level of agreement with the following statements/Ka kopo lekanya boemo ba hao ba ho dumellana le dipolelo tse latelang | *Strongly Disagreed/Ke Hanana ka Matla* | *Disagreed/Ha ke Dumellane* | *Neutral/Ha ke Hanane kapa ha ke Dumellane* | *Agreed/Ke a Dumela* | *Strongly Agreed/Ke Dumela ka Matla* |
|---|---|---|---|---|---|---|
| CI-01 | Covid-19 affected the wellbeing of the taxi industry personnel. Covid-19 a amme tshebetso e ntle ya basebetsi ba indasteri ya ditekesi. | 1 | 2 | 3 | 4 | 5 |
| CI-02 | Taxi industry experienced a loss of income during the pandemic. Indasteri ya ditekesi e bile le tahleheloya kuno nakong ya sewa. | 1 | 2 | 3 | 4 | 5 |
| CI-03 | I lost my job during the Covid-19 pandemic. Ke ile ka lahlehelwa ke mosebetsi nakong ya sewa sa Covid-19. | 1 | 2 | 3 | 4 | 5 |
| CI-04 | Job security during the pandemic was elevated. Tshireletso ya mosebetsi nakong ya sewa e ile ya phahama. | 1 | 2 | 3 | 4 | 5 |
| CI-05 | I run out of money to buy food during the pandemic. Ke ile ka fellwa ke tjhelete ya ho reka dijo nakong ya sewa. | 1 | 2 | 3 | 4 | 5 |

2

| | | | | | | |
|---|---|---|---|---|---|---|
| CI-06 | The pandemic greatly affected my livelihood. Sewa se ile sa ama mokgwa wa ka wa ho iphedisa. | 1 | 2 | 3 | 4 | 5 |
| CI-07 | I was afraid of the virus, and fear of infection. Ke ne ke tshaba vaerase, le ho tshaba tshwaetso. | 1 | 2 | 3 | 4 | 5 |
| CI-08 | I was concern about my family and customers. Ke ne ke ngongorehile ka lelapa la ka le dikhastomara tsa ka. | 1 | 2 | 3 | 4 | 5 |
| CI-09 | I was afraid of losing my job/business. Ke ne ke tshaba hore ke tla lahlehelwa ke mosebetsi/ kgwebo ya ka. | 1 | 2 | 3 | 4 | 5 |
| CI-10 | Increase of fuel price disrupted business. Ho nyoloha ha theko ya mafura ho ile ha sitisa kgwebo ya ka. | 1 | 2 | 3 | 4 | 5 |
| CI-11 | Shortage of passengers was a big challenge during the pandemic. Ho fokotseha ha bapalami e bile phepetso e kgolo nakong ya sewa | 1 | 2 | 3 | 4 | 5 |
| CI-12 | The pandemic increased competition from other drivers. Sewa se ile sa eketsa tlhadisano ho hlaha ho bakganni ba bang. | 1 | 2 | 3 | 4 | 5 |
| CI-13 | The pandemic increased competition from other means of public transportation (e.g Meter taxi, Uber, Bolt). Sewa se ile sa eketsa phehisano ho hlaha mefuteng e meng ya dipalangwang tsa setjhaba (mohl. Meter taxi, Uber, Bolt). | 1 | 2 | 3 | 4 | 5 |
| CI-14 | It takes longer time to get required number of passengers during the pandemic. Ho nka nako e telele ho fumana palo e hlokehang ya bapalami nakong ya sewa. | 1 | 2 | 3 | 4 | 5 |
| CI-15 | The pandemic affects the number of passengers per load. Sewa se ama palo ya bapalami ho tlatsa ditulo. | 1 | 2 | 3 | 4 | 5 |
| CI-16 | The pandemic resulted in the loss of taxi drivers and taxi operators. Sewa se ile sa baka tahlehelo ya bakganni le beng ba ditekesi. | 1 | 2 | 3 | 4 | 5 |
| CI-17 | The pandemic resulted in the increase of repossessions of taxis due to poor revenue generated. Sewa se ile sa eketsa ho nkwa ha ditekesi ke dibanka ka lebaka la kuno e fokolang e neng e etswa. | 1 | 2 | 3 | 4 | 5 |

## ST: Support received by the taxi industry (*Please tick [√] or circle the appropriate box)*

**What type of support did the taxi industry received during the pandemic? (***Please tick [√] or circle all the options that applies to you***)**

**Ke tshehetso ya mofuta ofe eo indasteri ya ditekesi e ileng ya e fumana nakong ya sewa?(***Ka kopo tshwaya [√] kapa o etse sedikadikwe dikgethong tsohle tse amang le wena***)**

1. **Formal training to curb the virus./ Thupelo ya semmuso ho fokotsa vaerase.**
2. **PPE supplies. /Phano ya PPE. [Thepa ya Ho itshireletsa Kgahlano le Tshwaetso ya Covid-19].**
3. **Respond to impact-specific needs (e.g covid-19 policies)./ Karabelo e amanang le ditlhoko tsa sekgahla ka ho ikgethileng (mohl. Maano a Covid-19 ).**
4. **Regular communications and updates about the pandemic policies./ Dipuisano tsa kamehla le dintho tsa moraorao tse mabapi lemaano a sewa.**
5. **Crowd funding to control job security./ Matlole a letshwele ho laola tshireletso ya mosebetsi.**
6. **Food supplies./ Phumantsho ya dijo**

| ST | Please rate the following statements Ka kopo lekanya boemo ba hao ba ho dumellana le dipolelo tse latelang | *Strongly Disagreed/ Ke Hanana ka Matla* | *Disagreed/Ha ke Dumellane* | *Neutral/Ha ke Hanane kapa ha ke Dumellane* | *AgreedKe a Dumela* | *Strongly Agreed/Ke Dumela ka Matla* |
|---|---|---|---|---|---|---|
| ST-01 | The formal training received by the taxi industry to curb the virus was very helpful. Thupello ya semmuso e ileng ya fumanwa ke indasteri ya ditekisi ho fokotsa vaerase e bile le thuso e kgolo. | 1 | 2 | 3 | 4 | 5 |
| ST-02 | PPE supplies was constant and regular. Phano ya PPE e ne e fumaneha ka ho lekana mme e fumaneha kamehla. | 1 | 2 | 3 | 4 | 5 |
| ST-03 | PPE supplies was very helpful toward curbing the virus. Phano ya PPE e ne e thusa haholo ho fokotsa vaerase. | 1 | 2 | 3 | 4 | 5 |
| ST-04 | The respond provided to impact specific needs (e.g covid-19 policies) were very helpful. Karabelo eo ho ile ha fanwa ka yona ya ditlhoko tsa sekgahla ka ho ikgethileng (mohl. Maano a Covid-19) a bile le thuso e kgolo. | 1 | 2 | 3 | 4 | 5 |
| ST-05 | The regular communications and updates about the pandemic policies within the industry were very helpful. Dipuisano tsa kamehla le dintlafatso tsa moraorao mabapi le maano a sewa a kahare ho indasteri a ile a ba le thuso e kgolo. | 1 | 2 | 3 | 4 | 5 |
| ST-06 | The governments' policies mandates outside the industry were very helpful. Maano a mawa a mmuso kantle ho indasteri a ile a ba le thuso e kgolo. | 1 | 2 | 3 | 4 | 5 |
| ST-07 | The leaderships of the industry were very effective in regulating the mandates of the industry. Ketapele ya indasteri e ne e sebetsa hantle ho laola mawa a indasteri. | 1 | 2 | 3 | 4 | 5 |
| ST-08 | The management sector of the industry protected our business interest and facilitate job security. Bolaodi ba karolo ya indasteri bo ile ba sireletsa ditabatabelo tsa kgwebo ya rona le ho bebofatsa tshireletso ya mosebetsi. | 1 | 2 | 3 | 4 | 5 |
| ST-09 | The resources offered by the government were very effective. Mehlodi e fanweng ke mmuso e ile ya sebetsa hantle. | 1 | 2 | 3 | 4 | 5 |
| ST-10 | The resources offered by the private sector were very effective. Mehlodi e fanweng ke karolo ya poraefete e ne e sebetsa hantle. | 1 | 2 | 3 | 4 | 5 |
| ST-11 | Taxi owners were more caring and supportive during the pandemic. Beng ba ditekesi ba ne ba tsotella haholo le ho tshehetsa nakong ya sewa. | 1 | 2 | 3 | 4 | 5 |

**TF: Taxi Industry Formalisation, Subsidization, Policies and Structural Changes Needed** *(Please tick [√] or circle the appropriate box)/* **Ho Sebetsa Semmuso (Formalisation) ha Indasteri ya Ditekesi, Tshehetso ka Ditjhelete, Diphetoho Maano le Dibopeho tse Hlokahalang** (Ka kopo tshwa *[√]kapa o etse sedikadikwe lebokoseng le tshwanetseng)*

| TF | Please rate your level of agreement *(factors affecting formalisation)*/Ka kopo lekanyentsa boemo ba hao ba ho dumellana le dipolelo tse latelang (dintlha tse amang ho sebetsa semmuso) | *Strongly Disagreed/ Ke Hanana ka Matla* | *Disagreed/Ha ke Dumellane* | *Neutral/Ha ke Hanane kapa ha ke Dumellane* | *Agreed/Ke a Dumela* | *Strongly Agreed/Ke Dumela ka Matla* |
|---|---|---|---|---|---|---|
| TF-01 | There is a high risk that formalising the industry would cripple the economy of the industry. Ho na le kotsi e kgolo ya hore ho sebetsa semmuso ha indasteri ho tla thefula moruo wa indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-02 | Formalisation will ensure job security for everyone in the industry. Ho sebetsa semmuso ho tla netefatsa tshireletso ya mesebetsi bakeng sa bohle ba indastering. | 1 | 2 | 3 | 4 | 5 |
| TF-03 | The industry is better off on its own without formalisation. Indasteri e sebetsa betere ka boyona ntle le ho sebetsa semmuso. | 1 | 2 | 3 | 4 | 5 |
| TF-04 | Lack of government support affect the formalisation of the industry. Tlhokeho ya tshehetso ya mmuso e ama ho sebetsa ha indasteri semmuso. | 1 | 2 | 3 | 4 | 5 |
| | Please rate your level of agreement *(ways to facilitate formalisation)*/Ka kopo lekanyentsa boemo ba hao ba ho dumellana le dipolelelo tse latelang *(ditsela tsa ho bebofatsa ho sebetsa semmuso)* | *Strongly Disagreed/ Ke Hanana ka Matla* | *Disagreed/Ha ke Dumellane* | *Neutral/Ha ke Hanane kapa ha ke Dumellane* | *Agreed/Ke a Dumela* | *Strongly Agreed/Ke Dumela ka Matla* |
| TF-05 | Government support and resources will increase the level of sustainability in the industry. Tshehetso ya mmuso le mehlodi e tla eketsa boemo ba botsetsi kahare ho indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-06 | Adoption of new technology in handling the business and passengers can facilitate formalisation in the industry. Kamohelo ya theknoloji e ntjha ya ho tsamaisa kgwebo le bapalami e ka bebofatsa ho sebetsa semmuso kahare ho indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-07 | More government support and intervention are required for formalisation. Tshehetso e eketsehileng le bokenadipakeng ha mmuso di a hlokahala bakeng sa ho sebetsa semmuso ha indasteri. Tshehetso ya ditjhelete indastering ya ditekesi e ka ba le thuso ho lebisa ho sebetseng semmuso ha indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-08 | Subsidizing the taxi industry would be helpful towards formalisation. | 1 | 2 | 3 | 4 | 5 |
| TF-09 | The application of management principles and accounting would be helpful towards formalisation. Ho kenya tshebetsong ha ditsela tse loketseng tsa taolo le tshwaro ya dibuka ho ka thusa haholo ho lebiseng ho sebetsa semmuso ha indasteri ya ditekesi. | 1 | 2 | 3 | 4 | 5 |
| TF-10 | Incorporating tax laws in the industry would help to formalise the industry. Kenyeletso ya melao ya lekgetho kahare ho indasteri ho ka thusa ho sebetsa semmuso ha indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-11 | Clarity on subsidy allocation would facilitate the formalisation process easily. Tlhakiso ya tshehetso ya ditjhelete e ka | 1 | 2 | 3 | 4 | 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | bebofatsa tshebetso e bonolo ya ho sebetsa semmuso indastering. | | | | | |
| TF-12 | Prioritising public transport over private car use can enhance the formalisation of the taxi industry. Ho hlophisa seo e leng sa bohlokwa pele ho dipalangwang tsa setjhaba bakeng sa ho sebedisa makoloi a poraevete ho ka ntlafatsa ho sebetsa semmuso ha indasteri ya ditekesi. | 1 | 2 | 3 | 4 | 5 |
| TF-13 | Restructuring the current leadership structure would help towards the formalisation of the industry. Thehobotjha ya sebopeho sa jwale sa ketapele ho ka thusa ho lebiseng ha ho sebetsa semmuso ha indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-14 | Restructuring the current employment practices within the taxi industry would be essential towards formalising the industry. Thehobotjha ha ditlwaelo tsa jwale tsa mosebetsi kahare ho indasteri ya ditekesi ho ka ba hlokolotsi ho lebiseng ho sebetsa semmuso ha indasteri. | 1 | 2 | 3 | 4 | 5 |
| TF-15 | Restructuring the current system of issuing taxi permits and technologically link a taxi permit per route(s) to determine the number of passengers and trips for subsidy purposes. Thehobotjha ha mokgwa wa jwale wa ho ntsha diphemiti le diphemiti tse hokahantsweng ka theknoloji bakeng sa marangrang a ditsela tsa ditekesi ho etsa qeto ya bapalami le maeto bakeng sa sepheo sa tshehetso ka ditjhelete. | 1 | 2 | 3 | 4 | 5 |

**Thank you for your time and cooperation!**

**Re leboha nako ya hao le tshebedisanommoho!**

## Appendix D: Informed Consent

# UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

**APPLICATION FOR ETHICS APPROVAL**

**For research with human participants**

Information Sheet and Consent to Participate in Research (Kitsiso le tumelelo ya go tsaya karolo mo dipatlisisong)

Date: 12 January 2023

Letlha: 12 Ferekgong 2023

Greetings (Madume),

My name is Thabo Olehile Zacharia Moeng from the University of KwaZulu Natal, College of Law and Management Studies, contact number 0783351613, email: 220063762@stu.ukzn.ac.za **(Ka leina ke Thabo Olehile Zaharia Moeng gotswa Yunifesiting ya KwaZulu-Natal, Lefepha la boithuti ba Molao le Tsamaiso, mogala 0783351613, emaile 220063762@stu.ukzn.ac.za).**

You are being invited to consider participating in a study that involves research on the Impact of COVID-19 pandemic on the Taxi Industry in South Africa. The aim and purpose of this research is to explore the Impact of COVID-19 pandemic on the Taxi Industry in South Africa, the study will be conducted in the Mangaung Metropolitan Municipality in the Free State Province. **(O lalediwa go ka tsaya karolo mo boithuting bo bo batlisisang Tsotsumetso ya leroborobo la kofiti-19 mo dipalangweng tsa botlhe tsa ditekesi mo Masepaleng Mogolo wa Mangaung, mo Profensing ya Foreisetata)**

The purpose is to determine the extent of damage caused by COVID-19 pandemic in the Taxi industry in South Africa; to explore what measures are required to formalise the taxi industry; and to assess how formalization would stimulate new thinking in the taxi industry, and establish the equitable manner to subsidize the taxi operators. The study is expected to include 50 to 100 participants. Mangaung Metropolitan Municipality is formed by 7 towns, from these Towns the researcher will select 2 to 5 taxi commuters from each town. Each town has a Taxi Association, except three towns that belong to one association, and the researcher will interview 2 members of the Executive Committee. The researcher will also interview two members of the Motheo Regional Taxi Council, and two members of the Provincial Taxi Council, and two officials from the Department Transport, Road and Police in the Free State Province. **(Maitlhomo magolo ke go ka netefatsa katlabalo ya ditshenyegelo tse di bakilweng**

**ke kofiti-19 mo kgwebong ya ditekesi mo Aforika Borwa, le go sinolola megato ee tlokegang go ka beya kgwebo ya ditekesi mo taolong, le go ka netefatsa gore taolo e ka se tsose tlhase ya mogopolo a montsha mo kgwebong ya ditekesi, le go ka tlisa mokgwa wa tshiamo go ka thusa borra kgwebo ka madi.Boithuti bo lebeletswe go ka nna le ba tsaya karolo ba 50 goya 100. Masepala Mogolo wa Mgaung o nale ditoropo tse 7, mme mobatlisisi o tla tlhopa manamedi ba ba 2 goya go 5 go tswa mo topopong ngwe le ngwe go ba botsa dipotso ba lebane. Toropo ngwe le ngwe e nale kgobokanyo ya ditekesi, ntle le ditoropo tse tharo tse di naleng kgobanyo e le ngwe.Mobatlisisi o tla botsa dipotso ba lebane go ba babedi maketapele, ba babedi ba ketabele ya tikologo ya Motheo, Tikologo kgolo ya Foreistata le ba Lefapha la Dijanaga, Mebila le Sepodisa mo tikologong ya Foreitata**

The study will utilise interview schedules,emails, field notes, public documents, journal articles, newspaper articles and magazines about the Taxi Industry as the tools to gather key information. The interviewer will use audiotapes, handwritten notes to record data and will also keep a journal. **(Boithuti bot la dirisa dipotsiso le lebane, mafatlhatla a emeile, lokwalonyana, makwalo a bothe, makwalo a boithuti, dikoranta jaaka sehihi go ka kgobokanya kitso).**

The duration of your participation if you choose to participate and remain in the study is expected to be 10 to 25 mins. **(Nako ya go ka tsaya karolo ha dumela go tsaya karolo e lebeletswe go ka nna 10 goya go 25 ya metsotso)**

At present, we do not see any risk of harm from your participation. The risks associated with participation in this study are no greater than those encountered in daily life. There are no immediate benefits to you from participating in this study. However, this study will be extremely helpful to us in that we hope it will promote understanding of the Taxi Industry and the impact of COVID-19 pandemic in the Mangaung Metropolitan Municipality. **(Ga jaana go go bonagale kgwetlo ya tshenyegelo ya go ka tsaya karolo. Kgwetlo ya tshenyegelo e e ka amangwang le go tsaya karolo mo dipatlisoshong ga e fete bogolo jo go thulanang le bone tsatsi lengwe le lengwe. Ga gona thusho/dikatso ha o tsaya karolo, mme go tsaya karolo gag ago,go tla thusa ga golo go ka tsweletsa kotlisisho mo kgwebong ya ditekesi le tshushumetso ya kofiti-19 mo Masepaleng Mogolo wa Mangaung)**

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee. **(Boithuti/dipatlisiso di salotse maitswaro a mantle ebile amogetswe di siame ke lefapha le lemaleba la yunifesithi)**

In the event of any problems or concerns/questions you may contact the researcher at (220063762@stu.ukzn.ac.za, cell 0783351613) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows: **(Ha go ka nna le bothata kgotsa matshwenygo/dipotso, O ka ikgolaganya le mo batlisisi mo mogaleng wa 0783351613 kgotsa lefapha la maitshwaro a mantle a yunifesithi)**

**HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION**

**Research Office, Westville Campus**

**Govan Mbeki Building**

**PrivateBagX54001**

**Durban 4000 KwaZulu-Natal, SOUTH AFRICA**

**Tel: 27 31 2604557- Fax: 27 31 2604609**

Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses). You may refuse to participate or opt to remain anonymous or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study. **(Go tsaya karolo mo boithuting ke ka botswapelo, ebile botsaya karolo, O neyelana ka tumelello go mo batlisisi go dirisa dikarabo tsa gago. O ka nna wa gana go tsaya karolo, kgotsa, wa nna tlhokaina, kgotsa o ka inkgogela morago mo boithuting nako ngwngwe le ngwe ntle le go ka tlisa dipholo tse di sa itumediseng.Ha gona tuelo ya madi go tsaya karolo mo boithuting. Botlhokaina ba gago bo tla nna sephira sa mobatlisisi le Sekolo sa Botsamaisi, Kakanyo ya Tegeniki le Bolaudi, mme dikarobo tsa gago ga dina go dirisetswa maitlhomo a mang kwa thoko go boithuti jo).**

All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed **(kgobokanyo yothe ya kitso kana dipalopalo, e eleng mo mafafatheng kana mo bokaneng, e thal tlhokomelwa, mme ya bewa mo bolokeng dingwaga tse tlhano, morago ya sengwa).**

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above **(ha o nale dipotso kana ngongorego ka go tsaya karolo mo boithuting/ dipalisisong, ka tswetswe, ikgolaganye le nna Kgotso mookamedi wa dipatlisiso mo megalaeng ee boletsweng fa godimo).**

Sincerely

[redacted]

Olehile Moeng

**CONSENT TO PARTICIPATE**

TUMELO YA GO KA TSAYA KAROLO

I(**Nna**)…… (Name/**Leina**) have been informed about the study entitled The Impact of COVID-19 pandemic in the Taxi Industry in South Africa with particular reference to the Mangaung Metropolitan Municipality by Olehile Moeng.**(Ke tlhaloseditswe ke Rre Olehile Moeng ka boituti ba setlhogo se sereng Tshutshumetso ya reroboroba la Kofiti-19 mo dipalangweng tsa botlhe tsa di tekesi mo Aferika Borwa, se golo jaang mo Masepaleng mogolo wa Mangaung)**.

I understand the purpose and procedures of the study are to explore The Impact of COVID-19 pandemic in the Taxi Industry in South Africa, with particular reference to Mangaung Metropolitan Municipality, focusing on to explore what measures are required to formalize the taxi industry; and to assess how formalization would stimulate new thinking in the taxi industry, and establish the equitable manner to subsidize the taxi operators. I have been given an opportunity to ask questions about the study and have had answers to my satisfaction. **(Ke utlwisisa maitlhomo le mokgwa wa tsamaiso ya boithuti go ka batlisisa kgatlamelo ya leroborobo la kofiti-19 mo dipalangweng tsa bottle tsa ditekesi mo Afrika Borwa, se golo jaang mo Masepalemg Mogolo wa Mangaung, go lebeletswe o batlisisa ditekanyetso difeng tse di tlhokahalang go ka tlisa popego ya semolao mo dipalangweng tsa botlhe tsa ditekesi, le go ka seka seka mokgwa wa go ka bopa popego ya semolao ee ka tsosolosang dikakanyo tse di ntsha mo dipalangweng tsa botlhe tsa ditekesi, le go tlhomamisa mokgwa wa tshiamelo ya go ka thusa borro kgwebo ya dopolngwa tsa botlhe tsa ditekesi ka madi. Ke filwe tshono ya go ka botsa dipotso ka boithuti e bile ke arabilwe go ka kgotsofala).**

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting the study. **(Ke tlhomamisa gore go tsaya karolo ga me mo boithuting ke ka botswa pelo e bile ke ka ikgogela morago nako ngwe le ngwe ntle le go ka senya).**

I have been informed that will be no compensation to participate in the study.**(Ke itsisitswe gore ga gona dituelo go tsaya karolo mo boithuting).**

If I have any further questions/concerns or queries related to the study, I understand that I may contact the researcher at 0783351613, email: 220063762@stu.ukzn.ac.za. **(Ga go nale dipotso kgotsa matshwenyego mabapi le boithuti, ke utlwisisa gore nka ikopanya le mo batlisisi mo 0783351613, email: 220063762@stu.ukzn.ac.za).**

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact: **(Ga ke nale dipotso or matshwenyego ka ditokelo jaaka motsaya karolo mo boithuting, kgotsa matshwenyego ka dikarolo dingwe tsa boithuti kgotsa bo batlisisi, nka ikgolaganya le:**

## Appendix E: DATA EXTRACTION FORM

| | |
|---|---|
| Data extraction No. | |
| Reference | |
| Author & year | |
| Title | |
| Country | |
| Objective | |
| Dependent variables | |
| Quality assessment | |
| Outcome | |
| Comments | |