

AN INVESTIGATION OF THE (IN)FLEXIBILITY OF THE MINIBUS-TAXI OPERATING LICENSE SYSTEM: THE CASE OF STELLENBOSCH

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ABSTRACT

This research aims to explore the inflexibility of South Africa's operating licensing system and how it affects minibus taxi operations when operating locations change. It also explores the limitations it places on passenger demands when land uses change over time. The study focusses on answering the following research questions: How did the relocation of the rank affect passenger transit conditions? Why did the locations of the ranks change? Is the existing licensing system inflexible? Why were the operating license routes never amended? How did the outdated route description affect post-relocation traffic law enforcement conflict? It also explores what prompted decision-makers at the time to switch from an area-based permit to a route-based operating license by looking at legislative history and attempting to determine how this has influenced the taxi industry's operational dynamics.

The Stellenbosch Municipality's efforts to modernize the town's public transportation network by simplifying and integrating all ranking facilities is investigated, but the effort is complicated by an operational licensing system that assigns permits to precisely specified routes. As a result of the reorganization of ranks, routes have become obsolete, resulting in violations of operational conditions in order to meet passenger demands while also creating law enforcement confrontation.

Six of the Stellenbosch taxi association's ten routes were chosen for investigation. In addition to the literature review, 25 interviews were conducted with the intent of gaining a more in-depth understanding of respondents' attitudes and knowledge of the difficulties surrounding rank rationalization and consolidation. The data was gathered using a mixed method approach, with a qualitative study concentrating on the people affected by the system and a quantitative analysis focusing on the obsolete route descriptions. Taxi drivers, passengers, taxi owners, and municipal officials were interviewed and both open-ended and closed-ended questions formed part of the interview process. The purpose of the route surveying was to see how much the taxis deviate from the initial route description. This is descriptive data displayed in a graphical style via route maps, which were obtained by onboard tracking utilizing smart phone technology and GPS equipment to compare taxi operations to the initial route description in the operating license. Some of the routes mapped were established more than 20 years ago, however while some of the route's elements are still in use, others have become obsolete as land uses have changed. The mapping data was downloaded and converted into a keyhole markup language (KML) track. The analytical results are presented to clearly show the important factors that influenced the research design, which addresses the six research questions. The change in rank has clearly had a negative influence on daily operations and a variety of other factors, in addition to the passengers' travel experience. I learned that studies were conducted that guided the decision on the relocation of the ranks and because routes are not changed even with the aim to improve public transportation, that those critical aspects of the system remain intact making the operating licensing system in Stellenbosch inflexible. I also discuss the ambiguity surrounding why the operating license route description has not changed, as well as what each stakeholder must do to ensure the procedure is completed and offer data to demonstrate the growth in conflict between traffic officers and minibus taxi drivers.

Regulation has its limits, but if the right measures are taken, the operating system may improve. Understanding the needs of passengers is one of the most important parts of public transportation service in order to ensure the long-term success of the industry's routes. Understanding how operating conditions and behavior affect route demand is also critical, and this research is focused on that. As regulations have changed around the world, the operating license system has been altered to provide a more flexible structure that is suited for the intended purpose of the operations. This gives the operating license system information and aids in determining its flexibility. The final chapter concludes the research and presents the findings and recommendations. The objective of this study was to look into the inflexibility of the operating licensing system, specifically how accommodating it is when ranks move and how it affects passenger experience, law enforcement conflict, and route specification.

Keywords

Stellenbosch; operating licensing system; routes; minibus taxi; law enforcement; legislation

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Acronyms and abbreviations

ATC:	Adam Tas Corridor
BRT:	Bus Rapid Transit
CBD:	Central Business District
CITP:	Comprehensive Integrated Transport Plan
CoCT:	City of Cape Town
CoJ:	City of Johannesburg
CoT:	City of Tshwane
CPTR:	Current Public Transport Record
CRTB:	Central Road Transportation Board
CW:	Cape Winelands
CWDM:	Cape Winelands District Municipality
DM:	Drakenstein Municipality
DTPW:	Department of Transport and Public Works
FA:	Financial Agreement
FIFA:	Fédération Internationale de Football Association
GABS:	Golden Arrow Bus Service
GIPTN:	George Integrated Public Transport Network
GIS:	Global Information System
GLM:	George Local Municipality
GMB:	Green Minibus
GPS:	Global Positioning System
IDP:	Integrated Development Plan
IGA:	Inter-Government Agreement
IRPTN:	Integrated Rapid Public Transport Network
ITP:	Integrated Transport Plan
KML:	Keyhole Markup language
KMZ:	Keyhole Markup language Zipped
LM:	Local Municipality
LRTB:	Local Road Transportation Board
MBT:	Minibus Taxi
MR:	Minimum Requirements
MRE:	Municipal Regulatory Entity
NDoT:	National Department of Transport
NLTA:	National Land Transport Act 5 of 2009
NLTAB:	National Land Transport Amendment Bill, 2016
NLTTA:	National Land Transport Transition Act 22 of 2000
NMT:	Non-Motorised Transport

NPTR:	National Public Transport Regulator
NT:	National Treasury
NTC:	National Transport Commission
NTPS:	National Transport Policy Study
NTTT:	National Taxi Task Team
O-D:	Origin - Destination
OL:	Operating licence
OLB:	Operating License Board
OLP:	Operating Licensing Plan
OLS:	Operating Licensing Strategy
OSM:	Open Street Map
PDTPW:	Provincial Department of Transport and Public Works
PLB:	Public Light Buses
POI:	Point of Interest
PRE:	Provincial Regulatory Entity
PSL:	Passenger Service License
PTP:	Public Transport Plan
PUTCO:	The Public Utility Transport Corporation
RMB:	Red Minibus
RSA:	Republic of South Africa
SATC:	South African Transport Conference
SDF:	Spatial Development Framework
SM:	Stellenbosch Municipality
STA:	Stellenbosch Taxi Association
TfL:	Transport for London
TOC:	Taxi Operating Company
TR:	Transport Register
TRT:	Tshwane Rapid Transit
UCT:	University of Cape Town
UK:	United Kingdom
US:	University of Stellenbosch
VOC:	Vehicle Operating Company
WCG:	Western Cape Government

1. INTRODUCTION

The earliest public transport dates back to the 1820's when large numbers of people were moved from home to work and because people had to travel to create a living, public transport developed. Public transportation became the preferred mode of transportation and were preferred by the elderly, the poor, people who could not drive and the young. In South Africa, the public transport industry has changed from being monopolised by buses, trains, and trams to now being dominated by minibuses after deregulation.

The demand for people to travel from poor communities have resulted in the minibus taxi industry establishing as the dominant mode. The amount of minibus taxi vehicles quadrupled since the lapse of the rail and the declining bus service in South Africa. Not all of the operators providing the service are registered with the public regulatory entity (PRE) and also does not have any affiliation with an association or holds a valid legal operating license. In some areas these are endorsed by executives of taxi associations allowing illegal operations on routes for large sums of money. This however puts the industry and especially those that have obtained the operating licences legally under financial pressure.

Owners also set high targets, resulting in aggressive behaviour by operators over passengers. Operators often die when fighting over routes, and innocent people also end up in the crossfire. Due to no government subsidies or incentives, the taxi industry has always operated as a demand-driven service across the country. This has transformed the industry into what it is today. By switching from radius licenses to route licenses, operations have become more regulated by the industry itself, which has created gaps in the network and attracted more competition, which has led to a failing public transport service. Also, public transport modes such as rail have become unsafe and unreliable, leading people to use private cars and taxis more often. Further, allegations of bribery and corruption within government structures hinder the issuance of operating licenses. These challenges remain unresolved as legislation attempts to change the land transportation system for the country, but fails to govern, reform, and regulate the transportation of passengers for reward.

1.1 PROBLEM STATEMENT

The Municipality's efforts to rationalise and consolidate the ranks, hoping to improve public transportation in Stellenbosch, were hampered by an operating licensing system that allocates licenses to defined routes, with changes to the network having a cascading effect on the routes' validity. However, this causes a conflict between the actual route being operated and the licensing route on the operating license, resulting in the operation violating the law and creates conflict between operators and traffic law enforcement. The most dominant mode of public transport in South Africa (Western Cape region inclusive of Stellenbosch Town) is minibus taxis. As a means of ensuring a good public transport service is available to commuters, the route should be aligned so that it directly corresponds with the need for people to travel between preferred origin and destination. There should be adequate facilities along the route, and it should be direct between neighborhoods and public transportation interchanges.

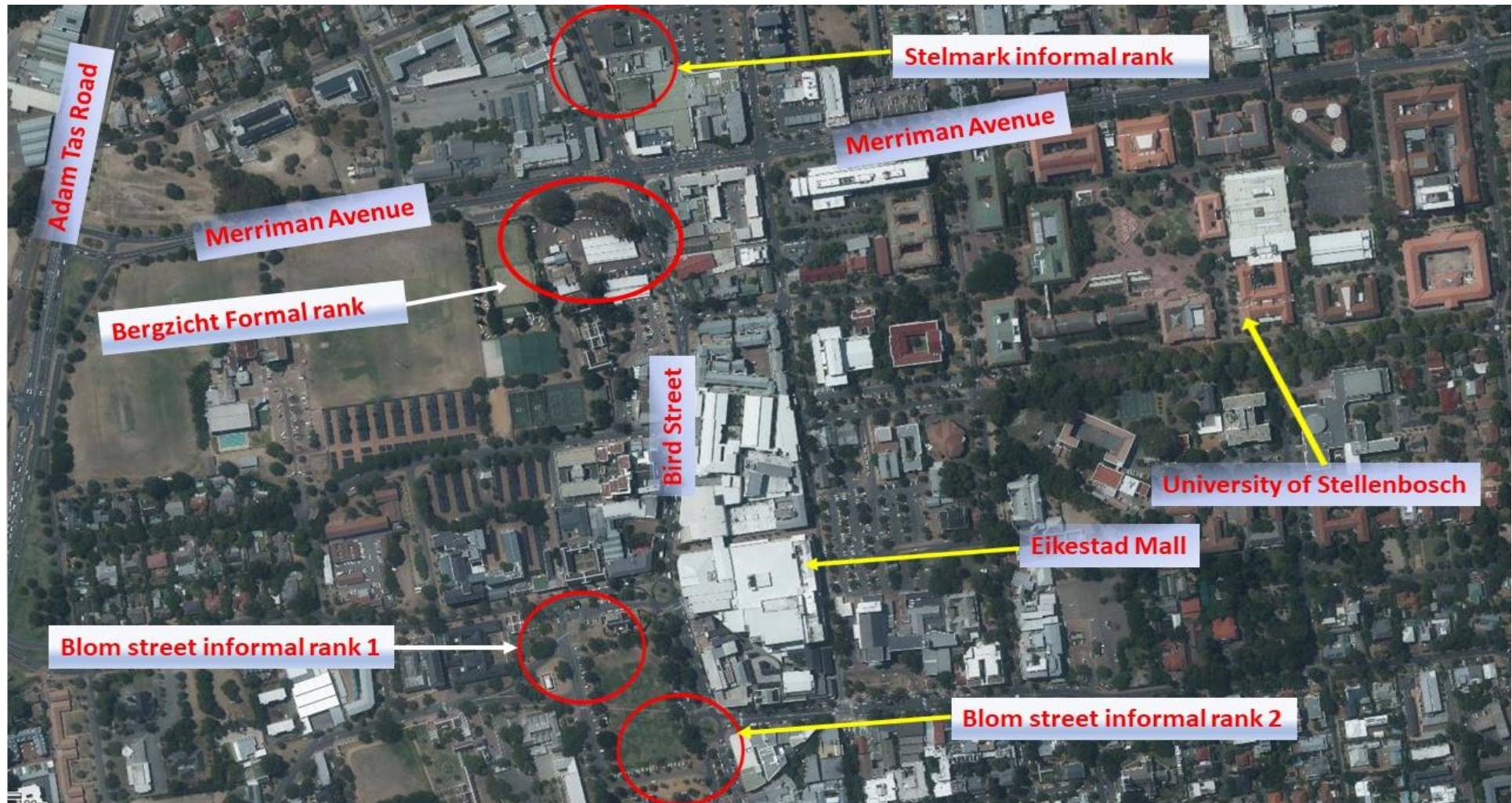


FIGURE 1: MAP OF TAXI RANKS IN TOWN

1.2 OBJECTIVE & RESEARCH QUESTIONS

1.2.1 OBJECTIVE

The primary objective of the dissertation is to investigate the (in)flexibility of the operating license system, especially the impact it has on the route after the relocation of the rank. Furthermore, it seeks to identify the extent to how flexible the license is to ensure an effective public transport service are delivered and to recommend an operating license that will meet the need of the passenger within the context of legislation.

1.2.2 RESEARCH QUESTIONS

The current route description is obsolete and does not reflect a true and realistic representation of the routes being operated, and therefore it needs to be established if the current operating licenses is still valid for the operation. In the light of the route descriptions not being a true representation of the operations what is the impact of the current operations on traffic law enforcement, the operators, passengers and owners?

1. How did the relocation of the rank effect passenger transit conditions?
2. Why did the locations of the ranks change?
3. Is the existing licensing system inflexible?
4. Why were the operating license routes never amended?
5. How did the outdated route description affect post-relocation traffic law enforcement conflict?

1.3 SCOPE AND LIMITATIONS

The scope of this research is limited six out of ten minibus taxi routes that originated from on street ranks in Stellenbosch. The routes are operated by private individuals belonging to the Stellenbosch taxi association. The modus operandi has changed after the rank was relocated by the planning authority but the operating license for these routes remains unchanged making the operation illegal. This research therefore only investigates the circumstance around this and the impact it has on the daily operation but is limited to the selected routes which was never amended.

Limitations of this research are that trains are not operational and normal deviations that are experienced due to passengers need to go to other public transport facilities could not be recorded. Due to the covid-19 pandemic and the lock down restrictions the Stellenbosch university have present most of its classes online, students also utilise the minibus taxi service and due to this the travel patterns of the students could not be mapped. All the routes were also not operational daily and due to the low demand, some routes could only be surveyed on Saturdays, social grant days and during peak periods (06:00am-09:00am & 16:00pm-18:30pm). In some cases, a round trip could not be completed due to low demand and these routes then had to be resurveyed on high demand days. This research excludes services provided by rail and busses in and around Stellenbosch. It is because of the prescribed type of operation which exist in Stellenbosch that the focus was especially for this area.

1.4 DISSERTATION OUTLINE

The dissertation is structured into the following seven chapters and consist of the following:

Chapter 1: The introduction provides an overview of the research, the problem that is being investigated, the objective and the scope and limitations of the research.

Chapter 2: The literature review discusses the evolution of legislation in the South African context for operating road based public transport. Further, it reviews studies conducted internationally on how public transport operations were reformed by regulating it. The legislations provide a backdrop on the role it played with the moulding of the taxi industry and what it became especially when minibus taxi's (MBT) were deregulated along with the regulation of the transport sector over the years.

Chapter 3: The study area is discussed and how the town and minibus taxi operations have developed over time into the current operations which passengers today are familiar with.

Chapter 4: The research approach and methodology utilised are described in this chapter. Further, it focusses on the process used for data collection through semi structured interviews with participants.

Chapter 5: The results and analyses are evaluated in this chapter. The findings are presented in a visually appealing manner and provide answers to all of the research questions.

Chapter 6: This chapter looks at the operating license system and possible improvements that could be made to make it more flexible.

Chapter 7: The final chapter summarizes the dissertation; it highlights other findings and provides recommendations based on the findings.

2. LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides a review of available literature on regulation generally and specifically on taxi licensing. Through this review I hope to determine what regulation is trying to achieve and how government attempts to accomplish this task. I review existing research from other countries and South Africa and would like to illustrate the importance of regulation and how public transport have transformed due to the impact thereof. Section 2.2 of this chapter, I discuss the evolution of South African legislation from the first transportation legislation and the issuing of operating licenses in the 1990s. This chapter also discusses international studies and their implications for regulating public transportation in section 2.3. In part 2.4, I analyse the public transportation reforms that have taken place in South Africa, and section 2.5, summarise this chapter.

2.2 SOUTH AFRICAN PUBLIC TRANSPORT REGULATION

2.2.1 MOTOR CARRIER TRANSPORTATION ACT (NO. 39 OF 1930)

The first law to govern public transport in South Africa was introduced when J.C. Le Roux's motor carrier transportation act was passed in 1930. This act established a centralised road transportation board (CRTB) and ten local road transportation boards (LRTB) to enforce passenger transportation restrictions in designated areas. Local boards were in charge of the licenses, which were referred to as "motor carrier certificates" at the time. These licenses allowed for a maximum of four individuals to be transported. The act's main goal was to create a controlled environment and protect railways from taxi competition. It also mandated that local road transportation boards restrict carrier certificates and impose strict regulations on taxis, particularly in areas with no railways and unlicensed road transportation.

The act established two categories: a common carrier, which provided a service to the general public, and a contract carrier, which involved agreements with a small number of clients or a single customer. The act also made it difficult for new bus companies to enter the market and gain a license, as well as existing bus companies to expand. Without the proper authorization, moving products and people and being compensated for your services becomes illegal. It also made it illegal for black individuals to own or manage transportation facilities. Black people were also refused permits to operate vehicles, preventing them from becoming entrepreneurs in the transit industry. They were forced to surrender their permits and revert to sedans that could blend in with the traffic on the roads. The Road Transportation Board revised the Act (The Motor Carrier Transportation Amendment Act, Act 31 of 1932) in March 1932 to bring taxi operators who are engaging in illegal operations within the scope of the law (Competition Board, 1986).

2.2.2 ROAD TRANSPORT ACT (NO. 74 OF 1977)

The 1970s appear to have brought some changes to public transportation legislation, when operations were conducted using sedans, particularly in poor communities transporting those who lived far from work. These sedan taxis began offering shared services, but they only picked up passengers at authorized pick-up sites and ran between suburban train stations and bus terminals. Due to a rise in customer demand, taxi companies were forced to raise their vehicle capacity from four to a vehicle that could seat more than four passengers, which is when the kombi taxi was introduced. Taxis may now carry more than four people in their vehicles, and the Road Transport Act No. 74 of 1977 was passed.

Vehicles that carried more than nine people for a fee were classified as buses under this act, and all taxi drivers with a taxi that carried more than ten passengers were required to get a permit. However, because the Act failed to define a taxi, the taxi industry was given the ability to operate without violating the law. Despite the fact that the Act states that any individual may apply for a carrier permission, carrier permits were still limited, and operators continued to operate illegally but limited their passengers to nine instead of ten. This permitted them to operate legally within the limits of carrying no more than nine passengers at a time. However, as a result of this, operations have risen and more vehicles have been launched to the market, with numbers nearly doubling within five years. With the rising number of taxis, the government issued the first taxi permit, permitting operators to operate on an area-based permit, allowing taxis to operate within a 100-kilometer radius of a central place. The national transport commission (NTC) and LRTBs were under pressure from the bus businesses not to provide permits to the taxi industry, therefore issuing permits became a burden for them.

The custodians of taxi control were traffic departments within local governments; they were totally responsible for issuing authorization and establishing specific places for minibus taxis to operate. This paved the stage for the development of route-based taxi licences, which limit taxis' ability to operate where they want, particularly in cities.

The permit's purpose was fivefold.

1. *It registers the owner,*
2. *The vehicle particulars,*
3. *Identifies the purpose of the permit,*
4. *It indicates the operational area allowed, and*
5. *Gives the justification for the provision of the proposed service. (Kokernot,1984)*

2.2.3 THE WELGEMOED COMMISSION OF INQUIRY INTO BUS PASSENGER TRANSPORTATION IN THE REPUBLIC OF SOUTH AFRICA

Under the chairmanship of Dr. P.J. Welgemoed, the Welgemoed committee studied bus passenger transport operations in South Africa. The commission looked into the impact of the taxi sector on the bus industry and wanted to make sure that future policies addressed this. The commission developed a

final report, which was published in May 1983. In its study, the commission discussed the implications of the taxi sector on the bus industry (Smith et al, 1994 cited in Jefhtas,2002).

The commission did not hold the taxi industry in high regard, and its suggestion was for a "clampdown" on taxis (Essig, 1985 cited in Jefhtas, 2002), which advocated for the phase-out of taxis carrying more than four passengers. The Commission also proposed that taxis be reclassified as sedans and characterized as metered cars with a capacity of four passengers (Vorster and Britz, 1994 cited in Jefhtas,2002). The recommendation was to make the bus industry more financially sustainable while also safeguarding it from competition from the taxi industry. However, the taxi industry objected, claiming that this would result in a loss of business for operators. By making minibus taxis unlawful and hence not giving any new licences to the taxi business, the commission hoped to address the loophole in Act 74 of 1977. According to Browning (1989, cited in Jefhtas, 2002), the taxi industry existed when the study was made public, and so a number of factors conspired in favour of the industry, making the call for its abolition impractical. This recommendation was widely disputed, with the government and numerous other segments of the transportation industry opposing it.

“The LRTB had the final say about entry into the market, however when applications were made for public road carrier permits, details were published in the Government Gazette where objections or support for the application may be lodge to the LRTB. Permits were valid for 12 months and would be renewed annually at a cost of R10, occasionally a permit was issued for an indefinite period at a cost of R100. These carrier permits also stated that the maximum passenger capacity of eight may be carried by the minibus taxis. The limit of the operation and the type of trip which may be undertaken were define by these permits and was specified by the LRTB for a specific area. The six different distance controls regulating taxi operations that could be granted:

1. *Radius Permit- this permit allowed taxis to operate within a specific radius of the designated rank defined on the permit, radiuses were either five to ten kilometres and was the mostly commonly issued distance control which does not allow for two ended pick up or drop off operation.*
2. *Point to Point- Taxi’s with a point-to-point permit were allowed to operate between two specific locations, in addition distance radius was stipulated within which the taxi must remain.*
3. *Route Permit- Taxis were allowed to operate along a specific route only and may not deviate from that route, no designated distance conditions were attached and allowed for two ended pick up and drop off and was referred to as a dual permit.*
4. *Reciprocal Use Permit- Operators were given the authority to rank at more than one specified rank but had to follow a specific route.*
5. *Zonal Permit- this allowed for taxis to operate within a designated zone and were allowed to utilise any of the official ranks within that zone.*
6. *Casual Permit – this could be granted in addition with any of the aforementioned permits, a radius of thirty-five kilometres were granted and was used for special trips.”*
(Kokernot,1984)

2.2.4 WHITE PAPER ON NATIONAL TRANSPORT POLICY (1987)

Following the publication of the White Paper on National Transport Policy the 15-seater minibus taxis can now legally operate. Road carrier licences were still given under section 12 of the Road Transport Act of 1977 (Act 74 of 1977), but operators could now carry up to 15 passengers, including the driver. With this development, the business has advanced overnight, with operators upgrading their 10-seater vehicles into 14-seater vehicles and applying to the LRTB to amend their license to allow them to lawfully transport the increased number of people after obtaining their fitness certificates (Bassier 1989). The LRTB awarded these licences in accordance with the White Paper on National Transport Policy, which proposed that authorities be devolved to the lowest level of government and that private initiative be encouraged. Permits have been replaced with "Operating Authority," which will be provided if documentation such as vehicle fitness, professional driver's license, and passenger liability insurance have been obtained (Munitz 1991).

2.2.5 TRANSPORT DEREGULATION ACT (NO 80 OF 1988)

By the late 1980s, the minibus taxi sector had grown to the point where, despite being heavily regulated, illegals continued to enter the market and government laws could no longer manage it. The Transport Deregulation Act (No 80 of 1988) stated in section 5 that "the conveyance of goods or persons shall cease to be in force with effect from the date determined by the minister by notice in the Gazette," allowing the minister to deregulate passenger transportation. However, this provision was never fully implemented. The Transport Deregulation Bill of 1988 called for the eventual repeal of the Road Transportation Act in favour of the Road Traffic Act (Act 29, 1989) and the projected Passenger Transport Act, resulting in the deregulation of road transportation (Munitz,1991).

The number of licences issued by the Local Road Transportation Boards (LRTBs) increased throughout South Africa, rising from 3 752 in 1985/86 to 16 800 in 1986/87 and 39 604 in 1987/88. (Ferreira 1992 cited in Jefthas 2002). The deregulation process, however, had consequences for public transportation services since licensed minibus taxi companies opposed it because they were constantly in confrontation with illegal operators and were financially harmed by their operations. The government's LRTBs failed to stop the minibus taxi sector from growing, and by 1989, about 50,000 minibus taxis were operating across the country, with the greatest proportion of the passenger market (Behrens 2019). Because the market is overtraded, profits are down, and operational standards are down, therefore operators have resorted to risky and low-cost techniques of vehicle maintenance to save money (Ferreira 1992 cited in Jefthas 2002).

With Governments attention not being focused on regulation of passenger transport the operators seek to regulate the industry by itself and started forming local taxi associations, where they started regulating loading practices and prices (Jefthas 2002). Deregulation also allowed for the assignment of routes to associations, and encroachment between operators on routes sometimes resulted in deadly collisions, such as straying from your allotted route to fulfil passenger demand.

2.2.6 THE NATIONAL TAXI TASK TEAM (1996)

In 1992, the government founded the National Transport Policy Forum (NTPF), which lasted until 1995. The National Transport Policy Review Panel (NTPR) was established by the then-appointed Minister of Transport to replace the NTPF. Government formed the national taxi task team (NTTT), which included industry stakeholders to assist them in creating answers to the minibus taxi industry's difficulties. The task team was made up of nine taxi representatives, one from each province, nine government officials from various departments, and special advisors who were all selected at the same time at the first meeting. The NTTT's job was to figure out how to re-regulate the industry. The NTTT proposed that the government adopt a strategy for reorganizing, formalizing, and regulating the taxi business (Jefthas 2002).

According to Ahmed (1999), permits previously issued to minibus taxi operators have little relation to the actual route or network of routes where the minibus taxis operate. In order to find a solution, the government enacted legislation that amended the authority of permits, replacing radius operation with a defined route or network of routes. The transportation board could now update all permits to reflect the particular route that permit holders actually operate on through an amendment process.

The following stage required associations to identify all operators and vehicles on routes. This was then compared to information from the LRTB and planning authorities verified if a vehicle has been awarded a rank token which allowed it to operate from a rank. According to the laws, taxis must also have unique permanent marks that specify the route number(s) that the operator is authorized to operate on (Ahmed 1999).

2.2.7 WHITE PAPER ON NATIONAL TRANSPORT POLICY 1996

By 1996, the National Department of Transport (NDOT) had produced and published a Green Paper on National Transport Policy for public comment. The National Transport Policy White Paper was then released, presenting a fresh vision for public transportation. The concept for controlled public transportation competition implies competition for routes or networks of routes rather than competition between different associations operators on the route. Permissions, which were later renamed operating licenses, were to be substituted for permits. Given the importance of minibus taxis in providing public transportation, the White Paper outlined the following goals:

- Transportation policy must be based on concepts of spatial development.
- The requirement that all public transportation operators be registered as formalized commercial enterprises subject to the regulations governing their authorisation to operate.
- Regulated competition for public transportation routes should be encouraged and executed through permits or contracts.
- To ensure that all types of transportation are linked in terms of scheduling, routes, and ticketing systems.

- Devolution of public passenger transportation functions to the appropriate government level.
- Public passenger transportation must be provided efficiently in order to maximize the utilization of public resources.
- As can be seen from the foregoing, the White Paper views public transportation as vital to enhancing mobility and accessibility and believes it should be supplied efficiently, inexpensively, and effectively.

The White Paper has established an important context for operating license control, in which local governments must prepare for operating routes to meet passenger demand while avoiding overtrading.

2.2.8 NATIONAL LAND TRANSPORT TRANSITION ACT (NO 22 OF 2000)

The National Land Transport Transition Act (NLTTA), Act No. 22 of 2000, paved the way for the reorganization of the minibus taxi business and the cleaning up of the operating license system through service withdrawals in the rationalization of public transportation. This Act establishes new government organizations to provide adequate coordination across all areas, including operating licence boards, registrars, national and provincial appeal tribunals. According to the NLTTA, planning authorities must produce integrated transport plans (ITPs) that are updated annually and deal directly with the operating license system by developing operating license strategies. The operating license strategy (OLS) aims to keep information about supply and demand for public transportation services up-to-date, as well as to inform the operating licensing board (OLB) about the extraction and issuance of operating license applications.

Operating license applications must be submitted to OLBs, and these applications are then promulgated for comment by local authorities. The NLTTA indicated that all permits be converted into operating licenses. This was the final request for radius permits to become route-based operating licenses. The NLTTA encouraged taxi associations to register, as part of its aim to formalize the business by forming it into an organization with a constitution and code of conduct that binds members and drivers. Operating licenses become a requirement for operators to provide public transportation services, and they establish some additional legal requirements for getting one, such as being tax-registered and not having a criminal record. The Act also introduces additional enforcement mechanisms, broadening the scope to include other arms of the law and allowing for the confiscation of taxis for offenses involving illegal operations or violations of laws.

2.2.9 NATIONAL LAND TRANSPORT ACT (NO 5 OF 2009)

The National Land Transport Act (NLTA), (Act No 5 of 2009) was released in 2009 by the Department of Transportation to continue the process of reforming and reorganizing the national land transport system begun by the National Land Transport Transition Act (NLTTA), Act No.22 of 2000. Government wants to consolidate the land transportation function and move it to the most appropriate sphere of government, allowing bus contracting and operating licensing obligations to be devolved from the provincial to the municipal level. Permits that are valid indefinitely will be replaced by a 7-year period during which operating licenses will lapse and would need to be renewed. The NLTA proposes a new institutional structure in which the Provincial Regulatory Entity (PRE) is in charge of all intra-provincial transportation,

the National Public Transport Regulator (NPTR) is in charge of all inter-provincial and tourism transportation, and the Municipal Regulatory Entity (MRE) is in charge of all transportation operations within a municipality's boundaries. The NLTA further states that permits issued will retain their authority but should be converted to operating licenses, and that if an operating license supplying a service is not in continuous operation for 180 days, it must be cancelled under subsection 78 of the NLTA. Local authorities, on the other hand, will have to verify that operators converting these radius permits to route base operating licenses did so within the last 180 days.

The NLTTA's objective was to institutionalize the business in such a way that it could be regulated in terms of delivering public transportation on behalf of the government.

2.3 PARATRANSIT REFORM IN OTHER COUNTRIES

Reform remains a primary goal for governments in developing countries where a self-regulated paratransit business provides the majority of public transportation in the absence of good transport policies or adequate law enforcement. According to Behrens et al. (2016), paratransit is a non-scheduled method of public transportation that is primarily supplied by small to medium-sized buses. Typically, operators will compete for passengers, as these types of enterprises are not always about providing a decent service, but rather about making a profit. The adoption of Bus Rapid Transit (BRT) to address the paratransit industry's challenges is one of the most common examples of paratransit reform. As a result, I investigate the procedures taken by examining other countries where paratransit reform was undertaken to offer a sufficient, adequate, and reliable service for captive passengers.

2.3.1 PARATRANSIT REFORM IN SANTIAGO

Santiago's public transportation system was informal in the early 2000s and provided an unstable service to its clients. Santiago had shared paratransit, which was comparable to the minibus taxis in South Africa. These vehicles were privately owned and operated at their own expense, with no government assistance. Fares were not integrated or digitized, and when a transfer was performed, payment was required to use the service. Due to the *modus operandi*, the industry prospered in revenues and became appealing as a business.

According to Sectra 2003, the market became overtraded as additional operators entered the market (cited in Gschwender 2006), around 4000 companies ran 8000 buses, with 2500 bus owners owning only one bus and 1000 owning two or three buses. As traffic restrictions were disregarded in order to maximize profit margins, drivers overloaded vehicles and drove recklessly. Prior to 1975, the authority established bus lines, frequency, and fares. Operators were not permitted to make adjustments, and the bus system was extremely rigid (Transantiago 2005 cited in Gschwender 2006). Deregulation then began, and by 1980, the bus system had been deregulated, allowing operators to set their own fares, select the frequency of service, and run new routes without government approval. By 1988, if a bus passed the mechanical test, it could operate on a route with no limits on rates or routes, and it was infrequently denied, (Fernandez cited in Gschwender 2006). The market began to become overtraded, with an oversupply of buses operating on the same routes, and occupancy dropped as a result of the fierce competition. Low-quality buses were frequently used due to the easy criteria set to enter the

market. Due to the intense rivalry, rates constantly increased, and travel routes became long as a result of the high level of congestion between buses. In the 1990s, a shift was made to formalize the public transportation system through route tendering. Private concession schemes were founded by assigning operating rights to operators through tendering, with rates defined for a fixed time period.

The first public transportation concession tender was created for the operators to assure that no new entrants could enter the market, and the market for public transportation was effectively closed because only those operators with buses in operation were allowed to participate. Government improvements to route design were made, but it was recommendations from the operators that were regulated, and tariffs were regulated, but no changes could be made because they were pre-determined. A new ticketing system with a contactless smart card was implemented, allowing for seamless payment. New bus routes with varied vehicle sizes and frequencies were proposed to alleviate the severe competition. For the system, a new public transportation network was planned, allowing for a more widespread operational network. Smart technology logged data on operating routes, directing route design, particularly on central lines, for the authority. Different vehicle sizes improved the system and improved service quality; nonetheless, passengers had to be enticed back to the system due to a significant drop in patronage over the years due to a poor public transportation system. Policy reform has changed the system's operational conditions, increasing profit while simultaneously lowering traffic congestion as people return to public transportation.

The Transantiago was a government-led initiative to improve passenger transportation and, eventually, to construct an integrated public transportation system.

2.3.2 PARATRANSIT REFORM IN HONG KONG

Minibus taxis have been operating illegally in Hong Kong since the 1960s, filling the gaps left by buses. The Hong Kong government approved the Public Light Bus (PLB) in 1969, with a maximum capacity of 14 seats, with the goal of regulating illicit operations (Jennings & Behrens, 2017). The red-top minibuses (RMB) originated from some of these PLBs with a red stripe down the side. In 1972, the government developed the green-top minibuses (GMB), a more formalized minibus system with a predetermined route and fixed-fare structure. The RMB, unlike the GMB, is more flexible; rates can vary even on the same route, and payments are normally made in cash when you exit the minibus. The GMB is a franchising service that met the desire for a higher-quality, more frequent system in places where buses were not cost-effective (Jennings & Behrens, 2017). The GMB provided a more personalized point-to-point service, and payment is normally made with an octopus card when entering. The Hong Kong government launched this service to help the market by granting GMB operators exclusive trading rights on routes that only they may trade on and restricting the use of the RMB on certain routes. Furthermore, since 1976, the government has adopted quantity licenses, limiting the number of PLBs to 4350, of which 3346 are GMBs and 1003 are RMBs. These are reviewed every five years, and license holders are given the option of working as a GMB or RMB operator. The seating capacity was increased to 16 seats in 1988, and the transport advisory committee granted discretion in 2017 to raise seating to 19 seats for

all PLBs. The Hong Kong government controls the GMBs' timetables and tariffs through a passenger service license (PSL); however, the RMBs can establish their own fares to meet demand but do not have the rights or obligations of a PSL.

The GMB operation's routes were created with demand for public transportation in mind, and these routes were then grouped into packages based on considerations such as geographical position and operational profitability. All PLB operators are eligible to bid for the new route packages, which are intended to encourage the conversion of RMBs to GMBs. The PLBs are restricted to guarantee that the current operating environment remains stable, and that competition does not increase in a way that negatively impacts operations. The Hong Kong government has maintained control of the PLB system through franchising, which has systematically formalised their minibus industry. Route packages developed only allowed GMBs to be awarded rights on routes, while RMBs were restricted from operating on these routes but could compete for rights to operate on these routes through a competitive bidding process.

From the abovementioned, it can be inferred that Hong Kong has reform its minibus taxi sector by implementing quantity licensing and route franchising, capping the number of vehicles operating the PLB, and only allowing seating capacity to be raised to meet demand. Furthermore, the government enabled PLB operators to compete for routes through a bidding process, but they had to convert RMBs to GMBs in order to trade on government route packages. This also ensures that operators comply with Hong Kong government rules, so improving the minibus taxi industry's working conditions and passenger service quality. Because of the quantity licensing system, licenses have a monetary value attached to them, and they can be sold at a profit by the operator. This also ensures that service quality is increased because service providers will be able to buy high-class vehicles that attract consumers, allowing them to provide a more reliable and comfortable service by using the license as a form of insurance to seek financial aid. Quantity licensing can help set a lid on market competitiveness, ensuring that costs are kept low while operating requirements are maintained.

2.4 ROAD BASED PUBLIC TRANSPORT REFORM IN SOUTH AFRICA

South Africa has attempted constantly over the years to establish a good public transportation system for its citizens. In 2003, the National Department of Transportation conducted a National Household Travel Survey in all nine provinces to better understand people's travel patterns so that transportation planning and policy design might be improved. However, public transportation in South Africa has always been a point of contention amongst the various modes, as there are various forms of public transportation services available. Minibuses have been the most dominant means of public transportation in recent years. These minibus taxis have had an impact on not only daily commute routes, but also scheduled long distance, scholar services, charter tours, interprovincial, and cross-border travel, with riders shifting from other public modes to minibus taxis. As the minibus taxi sector has grown, the quality of services provided has deteriorated as drivers compete for passengers.

According to Schalekamp (2015), this appears to be a challenge because the industry's operators have always exhibited reluctance because little has been done to recognize their perspectives on public

transportation and how it could be improved. Public transportation buses also operate on fixed routes only during peak hours in the morning and afternoon, leaving the market un-serviced during off-peak periods, allowing the minibus taxis to fill the gap. By filling in these gaps, the market has progressed to the point where routes have spread, guaranteeing that passenger demand is met. Buses provide public transportation on a timetable that is established by the government in collaboration with bus operators, and the majority of these routes are subsidized by the provinces' transportation authorities.

Public Utility Transport Corporation (PUTCO), which runs primarily in Gauteng and Mpumalanga, and Golden Arrow Bus Services (GABS), which operates in the Western Cape, each have over 1000 buses on subsidised routes. The government has allowed for interim contracts for existing services and has given provinces the authority to establish bidding requirements for public transportation services. On the termination or expiration of these contracts, licenses had to be presented to local authorities, and authorization to perform services under a contract system would replace these permits (Naude 1999). Tenders were held in a competitive method that was open to the public. Contracts were awarded for a three-year period with no competition from other bus services on the routes, however minibus taxis and other public transportation services were permitted.

South Africa has implemented the Bus Rapid Transit (BRT) system, which was approved by the government in 2007 when it adopted the public transportation plan, allowing for the installation of Integrated Rapid Public Transportation Networks (IRPTN), particularly in metros. Bus Rapid Transit (BRT) is a first-class bus public transport system that is designed to move large numbers of people through the provision of segregated right-of-way infrastructure, rapid, frequent operations and excellent customer service. The government's goal is for the BRT system to be able to accommodate everyone, including passengers with special requirements, such as the elderly and people with disabilities, who can be readily accommodated and linked to different parts of a city via BRT networks. The government has unveiled its initial plan to make it a public-private partnership in which cities construct and maintain the infrastructure, including stations, depots, control centres, and a fare collection system. The BRT system will allow private operators to become operational businesses that will own and run the buses that would offer service on routes. BRT is also considered as having the advantages of rail with the flexibility of road-based transportation and is thought to be easier and faster to construct than a light rail system.

2.4.1 THE CITY OF CAPE TOWN'S MYCITI

In 2011, one year after the 2010 World Cup, the City of Cape Town (CoCT) launched the first complete phase of the MyCiTi BRT service, which includes both feeder and trunk routes. This is seen as a service that will improve road-based public transportation while also allowing existing MBT operators to operate on routes where BRT would take their place. This was done to ensure that job opportunities remained stable (City of Cape Town, 2007; Schalekamp & Behrens, 2013; Schalekamp & McLachlan, 2016; Siyongwana & Binza, 2012, cited in Plano, 2020).

As a result, negotiations have been postponed, prompting the CoCT to propose a new model that will engage paratransit operators in service delivery. The operational scenarios differ between minibus taxi operations and those of a BRT system, as the taxis flexibility would be more appealing to some passengers than the BRT's fixed routes. A MyCiti service can only be accessed at an official stop along the route or a transfer station, but a minibus taxi service can be accessed from anywhere within a township or along a route. The CoCT, on the other hand, has been successful in purchasing several operating licenses on routes where operators were offered considerable sums of money to terminate their operating licenses. Over the years, the CoCT has learnt that replacing all taxis on feeder routes with buses is not always desirable, as minibus taxis can provide a more frequent and adaptive service (Jennings and Behrens 2017). Taxi associations would be transformed into transport operating companies (TOCs) under a new operating model proposal, allowing the company to own operating permits previously held by individual members of the associations.

The creation of TOCs is expected to open up more job prospects in the transportation sector, as they will be able to provide government with other outsourced services.

2.4.2 CITY OF JOHANNESBURG'S REA VAYA

The City of Johannesburg (CoJ) has begun a process of overhauling its paratransit industry, similar to the CoCT's BRT, with the installation of the Rea Vaya phased BRT service. The service prioritized improving access and service quality for current and potential public transportation users and described the creation of a Strategic Public Transport Network (SPTN), a system of highly serviced transportation corridors connecting residential and other nodes. Although the SPTN was designed to be mode-agnostic in theory, it would have relied mostly on traditional buses in fact, with some supported infrastructure such as dedicated lanes. It more explicitly evokes some of the aspects of Johannesburg's subsequent plans, such as 'corridor densification and infilling' and 'rationalisation of transit and housing policies', in the section 'Land-use reform' (City of Johannesburg, 2003, p. 337 cited in Klopp, Harber & Quarshie 2019). Cabinet decisions have also played a key role in the reforming of the paratransit industry, leading the National Department of Transportation (NDoT) to provide a large capital grant for BRT developments. Rea Vaya bus system was introduced and began operations in 2009, three years after it was introduced. Phase 1A was inaugurated by an interim business with 40 buses. According to surveys conducted previous to the introduction, price would be more important than trip time in attracting users from private automobiles to the BRT system (Jennings and Behrens 2017). Residents of Soweto and the southern sections of Johannesburg can access the central business district and its environs with this service. Dedicated bus lanes increase the quality of road-based public transportation by allowing for faster operations and ensuring that buses run at regular intervals with minimal to no delays. It has also demonstrated that the method is more cost effective for passengers by exceeding daily targets.

The BRT is funded by the CoJ, while the Gautrain is funded by the province. The taxi sector in the late 2000s, according to Venter (2013, quoted in Klopp, Harber, & Quarshle 2019), was stagnating and embraced the BRT as a route to increased growth and profitability for road-based public transportation. In phase 1A, 30 Rea Vaya stations were operational, resulting in almost 6000 job opportunities and the

removal of 585 taxis from the road. With the deployment of Phase 1B, additional 18 stations were added to the system, resulting in the removal of another 312 taxis from the roads. The CoJ has succeeded in implementing a system that includes dedicated lanes, is dependable, and runs on a timetable with stations and on-route bus stops. Due to the operation of the Rea Vaya, the CoJ was obligated to compensate impacted minibus taxi operators, and with the growth of the phase 1A service, additional owners got compensation as per the agreements signed until earnings from the shares in the VOC were accrued. Ongoing negotiations between the CoJ and the taxi industry permitted service to continue despite the lack of a settlement, and it was through this that the taxi industry was established into a formalised VOC to render the service (CoJ 2011 cited in Manuel 2019).

2.4.3 CITY OF TSHWANE'S RAPID TRANSIT

The City of Tshwane (CoT) has also launched a rapid transit system called Tshwane Rapid Transit (TRT) (A Re Yeng), which began operations in April 2014 with a 7-kilometer line. TRT is a government project that is managed and run by a private enterprise, although priority operational regions are determined by CoT in collaboration with the minibus sector. They set out to ensure the implementation of a safe, high-quality, yet inexpensive, and universally accessible road-based public transportation system. The 56-kilometer trunk route, which features BRT buses in dedicated lanes that stop at dedicated stations, and passengers delivered to trunk route stations by complementing or feeder routes. The BRT system operates in a u-shaped route through the city, connecting Kopanong in the north-west to Denneboom in the north-east. Around 30 buses travel on the 7-kilometer Phase 1A route from the CBD to Hatfield. Phase 1A of the system was projected to transport 7 800 passengers per day, with the entire system capable of transporting 136 000 passengers per day.

Phases 1B and 1C stretch from Hatfield to Menlyn and the CBD to Rainbow Junction, respectively. The Tshwane BRT consists of 18 m articulated buses with a capacity of 90 passengers and 12 m buses with a capacity of 60 passengers. The BRT system uses a smartcard for payment, which should be interoperable with other public transportation smartcard systems. 48 Taxi drivers, chosen from a pool of 75 applicants for bus driver positions, are put through extensive training to operate the new public transportation vehicles.

The buses were purchased by Tshwane Rapid Transit (TRT), an interim organisation representing affected bus and taxi businesses, while the City of Tshwane provided bus specifications to match the A Re Yeng service and stations. The Tshwane Metropolitan Police Department host the A Re Yeng control centre, which oversee all communications related to the A Re Yeng trunk line. The buses, which run on a high-tech system that rely on an intelligence transportation system and offer free WiFi, can accommodate 33 sitting and 35 standing passengers. As the BRT future phases proceed, more drivers will be hired and trained to operate the busses.

2.4.4 GEORGE INTEGRATED PUBLIC TRANSPORT NETWORK (GO GEORGE)

The Go George, led by the Western Cape government (WCG) in collaboration with the George local council, aims to create a public transportation system that is accessible to all. When the planning began, it was referred to as a mobility strategy, but it was eventually called the George Integrated Public Transportation Network (GIPTN). When the service started, it used a paper-based ticketing system until transitioning to an electronic smart card system, which has improved the system's operations. The lessons learnt from deploying BRT in cities have been essential in engaging the taxi industry and guiding the system's planning to construct a smaller-scale network similar to those deployed in the aforementioned cities. The first phase of the GIPTN was started in 2014, over three years later than planned, but the government has remained committed to completing the project. The George Local Municipality (GLM) had to take a back seat due to legislation, as the NLTTA only authorized Provinces, Cities, or contracting/transport authorities to engage and negotiate with public transportation service providers who had existing contracts at the time.

The WCG signed two agreements with the GLM to form a partnership: the Inter-government Agreement (IGA) and the Financial Agreement (FA). The negotiations that preceded the accords lasted two years, beginning in 2009 and ending in April 2011. (Cited in Manuel 2019, Mooiman and Esson, 2013; GIPTN consultant, personal communication, 2017, October 2). To operate the GIPTN system, the GLM received engineering, financial, town planning, legal, and institutional information from the WCG. The WCG agreed to subsidize the GIPTN's operational shortfalls through the FA (Cited in Manuel 2019, George Local Municipality [GLM], 2011; Mooiman & Esson, 2013). The initial concept presented to the industry during the engagements in 2007 did not include remuneration for operating licenses. The agreement was that the industry would give up its operating licenses in exchange for firm shares, employment perks, and training. However, by 2010, the municipalities of Cape Town, Johannesburg, Tshwane, and Nelson Mandela Bay had agreed to reimburse the industry for its IPTN operating licenses (Manuel 2019). This established a precedent for operator license compensation, which the industry in George demanded (cited in Manuel 2019, Mooiman and Esson, 2013; Aboo and Robertson, 2016; GIPTN consultant, personal communication, 2017, October 2).

While negotiations were still ongoing, a VOC was established to outline the Go George's operations. National Treasury (NT) granted permission for the local authority to procure the fleet for the VOC, with the vehicles being transferred only when their useful life expired (cited in Manuel 2019, GIPTN consultant, personal communication, 2017). With the continued rise of private vehicular usage as the preferred mode of transportation and passenger dissatisfaction with a poor-quality transportation system, the goal of providing a scheduled, safe, reliable, and universally accessible public transportation system was met.

2.5 CHAPTER SUMMARY

The purpose of this review is to demonstrate that the current route-based operating licence system that we have in South Africa has a long history. It began as a method to defend the country's bus and rail monopolies by preventing the emergence of informal minibus taxi services. However, when it does de-regulate and make space for minibuses to operate legally, it does it in a way that is highly damaging. Permits are issued to anyone who applies for them, and there is no demand-supply relationship. These licenses are also given out by area, which leads to the taxi violence that erupted in the early 1990s.

In relation to the chapter's second purpose, I look into overseas research to see how other countries went about changing paratransit and what lessons may be learned that can be applied to South Africa's operating licensing system. The final segment of the chapter looks at what South Africa has done to reform the minibus taxi industry, including attempts to improve the operating licensing system to provide a more appealing service to passengers.

Now that I have concluded the literature review, I will move on to the next chapter, which will outline the research area.

3. STUDY AREA

3.1 INTRODUCTION

Section 3.2 of this chapter provides a brief history of the area, while section 3.3 discusses the town's characteristics, including demographics, geography, and financial income levels. Section 3.4 provide a full review of the chapter, demonstrating how the area's public transportation system has grown and how the operating license strategy has changed operating circumstances and section 3.5 provide a summary to conclude the chapter.

3.2 HISTORICAL BACKGROUND

In the year 1679, Simon van der Stel discovered Stellenbosch and decided to create a new colony in the Wildebosch Valley. The first farmer lived on the river's embankments less than a month after the place was renamed. The area's population swiftly swelled, and by 1683, landowners had signed a petition demanding that the Colony build a school. However, there was little thought put into the construction of the town roadways, which were solely used at the time to allow animal-drawn carts to reach the center of the region where the church stood.

By the end of the 18th century, 70 houses had been built, and the road network had expanded parallel to the town's "eerste river "(Mackintosh and colleagues, 1973). The town grew swiftly, and with the addition of rail service connecting it to other cities, its footprint grew to include the valley's northern, eastern, and western sides. In the 1900s, more roads were developed as private vehicles became a popular form of transportation, connecting Stellenbosch and the Franschhoek valley. With the transformation of Victoria college into the university of Stellenbosch (US) in April 1918, the town became a desirable place to live for many people due to the abundance of work opportunities. This resulted in the town expanding, necessitating the implementation of public transportation to accommodate the need for people to commute between districts and in and out of Stellenbosch.

3.3 (THE) PROFILE OF STELLENBOSCH

Stellenbosch has been selected as the research location, with a focus on the local minibus taxi business. Within the local municipality (LM), three taxi associations have been registered: Stellenbosch, Kayamandi, and Franschhoek taxi associations. Stellenbosch, which is part of the Cape Winelands (CW), has various locations that extend outside the city centre, which serves as the hub for all adjacent small towns. The rationale for choosing Stellenbosch is to look into the flexibility of the Stellenbosch minibus taxis' operations, as they are currently operating with route descriptions that differ from those on their operating licenses. Stellenbosch has a total area of around 830 km².

It includes the town of, Franschhoek and settlements such as Cloeteville, Idasvalley, Klappmuts, Kylemore, Kayamandi, Pniel, Jamestown, Vloffenburg, Devonvalley, Elsenburg, Jonkershoek and Raithby. Stellenbosch is 50 kilometers east of Cape Town and, after Cape Town, South Africa's oldest

town. It stretches as far as the urban limit of the Cape Town metropolitan region to the west and southwest, while mountain ranges surround it to the east and southeast. The town's development is still ongoing, and the population is constantly increasing, with 192 879 people and 52374 households today (Stellenbosch IDP 2021).

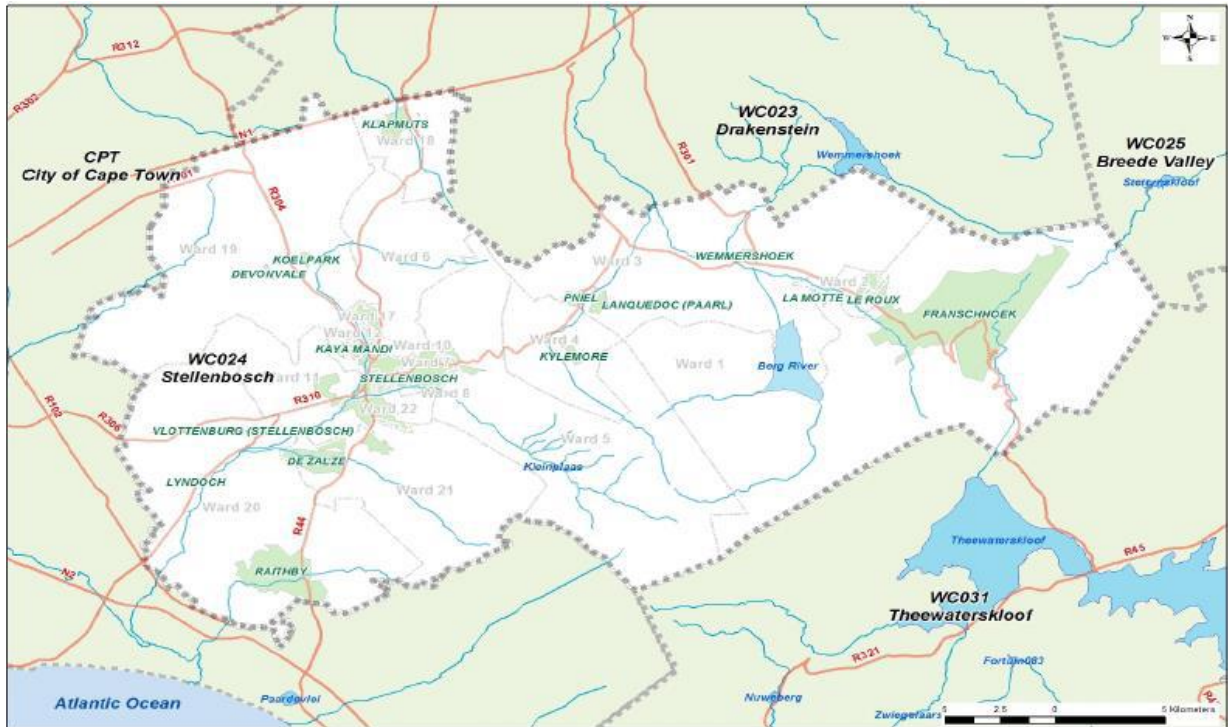


FIGURE 2: LOCALITY MAP OF STELLENBOSCH (SOURCE STELLENBOSCH IDP)

Understanding the demand for public transportation in Stellenbosch is crucial for MBT routes in the area. Public transportation demand refers to the number of individuals who travel between two points. There are numerous factors that drive demand, including:

- Land Use Patterns and Demographics, which include spatial structure, which determines where people live and work, as well as land use mix and housing or population density.
- Economic progress, such as income and employment levels.
- Accessibility to PT services and transportation options (private vehicles, public transportation, cycling, and walking).
- Service quality (comfort, dependability, safety, security, and affordability).

In Stellenbosch, income inequality stayed stable between 2010 and 2013, but fell to 0.62 between 2014 and 2016. Despite the fact that minibus taxis are the most efficient means of transportation, many

people are hesitant to use them for a variety of reasons. Between 2014 and 2016, the number of indigents in Stellenbosch grew, reflecting a higher demand for job possibilities and extra government support for utilities. With a GDP of R13.5 billion in 2015, Stellenbosch is the second largest local economy in the CW. The tertiary sector is well-developed, but the manufacturing sector also contributes to the local economy. The retail trade, catering and accommodation sector, the finance, insurance, real estate and business services sector, and the manufacturing sector all contributed R8.0 billion (58.8%) to the Stellenbosch economy, making these sectors the economic drivers in the area.

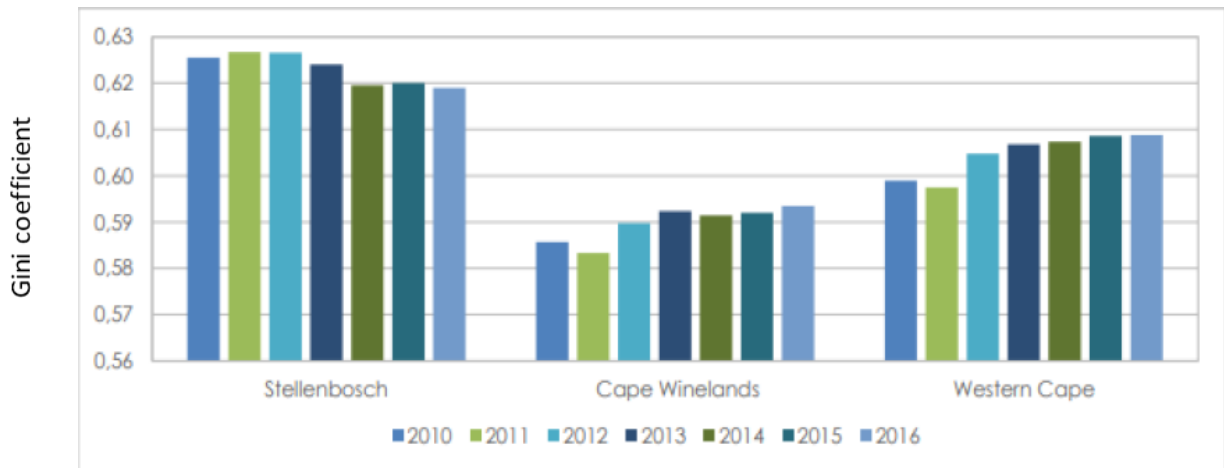


FIGURE 3: INCOME INEQUALITY LEVELS FOR STELLENBOSCH (GLOBAL INSIGHT 2017 SOURCE: STELLENBOSCH CITP 2020)

Stellenbosch's economy has yet to fully recover from the recession, with five-year average growth rates falling short of 10-year average growth rates. Since 2011, year-on-year growth has slowed to 0.5 percent in 2016, the lowest level since the recession, when the local economy dropped by 2.9 percent. The primary and secondary industries, with the exception of construction, are the biggest contributors to the fall in growth in 2016. (Stellenbosch CITP 2020).

3.4 EVOLUTION OF PUBLIC TRANSPORT IN STELLENBOSCH

Stellenbosch had three public transportation modes for moving the masses. For local travel, the bus was preferred, whereas for regional travel, the train was selected. The bus service in Stellenbosch was run from a Cape Town office, and it mostly served black and coloured populations. The routes typically ran between town and non-white residential regions, such as the outskirts of Stellenbosch and industrial zones. Because the demand for travel was limited, trips were mostly made just during peak periods and not throughout the day. There were pick-up stations along main routes, and there were no alternate routes or excursions, therefore it was the most cost-effective way of transportation.

However, as the town grew and new residential areas developed further away from the centre, the white population, particularly those attending the University (students), became more reliant on public transportation. Buses provided an exclusive service for whites only, but demand for passenger capacity

was limited, and the bus could not transport these tiny groups of individuals. This is when a more appealing means of transport was introduced, and this is where the private car or hired motor taxi started. Car taxis became a popular means of transportation for persons going between origin and destination, drastically altering the dynamics of travel. Stellenbosch has seen the rise of the minibus taxi since new rules were authorised in 1987. Buses and car taxis continued to operate, but this mode of transportation became more appealing and a better means to travel between locations. Minibuses and buses both operated on routes, but minibus taxis could stop at any time when passengers wanted to board or depart, and could move into smaller streets if necessary, making their operation somewhat more flexible than that of the bus. Buses, on the other hand, exclusively stopped at bus stops along the route and did not have the freedom to branch off and pick up passengers on other routes. The town of Stellenbosch had many on-street public transportation ranks serving various destinations. Routes serving the south were placed on the "Braak's" eastern side, while routes serving the north were located in the parking lot close to the pick and pay shopping centre. All farm routes were operated from an embayment next to Merriman Avenue, and Idasvalley and Cloetesville were operated from a parking space across the Rhenish Reformed Church. The other destinations were served from a small compact rank next to the Bergzicht informal trading area on Bird Street, which had no proper toilet facilities for operators or commuters.

During the preparation for the 2010 Fédération Internationale de Football Association (FIFA) world with the emphasis to improve public transport infrastructure in South Africa the Bergzicht trading area was identified as a possible rank. The National Department of Transport has made funding available to towns to improve public transportation, and the Western Cape Department of Transport has identified Stellenbosch. In the 2006/2007 financial year, the WCG gave a ten-million-rand contribution to the Stellenbosch municipality to co-fund the facility's construction. The planning authority overlooked the fact that the current operating permits were related to a route description that did not include the identified location as a facility to operate to and from, resulting in the operation becoming illegal when the operators were relocated to the new facility. Following the completion of the Bergzicht Public Transport facility, taxi operators at these other sites were instructed to relocate, since all other facilities were closed, and minibus taxi operations at these facilities had to be ceased. All activities were shifted to the Bergzicht public transportation facility, where they proceeded without a change in route description. The local government has produced integrated transportation plans, but none of them have addressed the current illegal operations.

Currently, there are more than 50 commuter routes operating in Stellenbosch, providing service to passengers within the town, between towns, to farms, and to locations outside of town. On weekdays and weekends, during both morning and afternoon peaks, high passenger flows occur between residential areas and Stellenbosch town. The town's commuter bus service has ceased, as the minibus taxi sector has supplanted it as the preferred means of road-based public transportation. Buses in the area are still running, but they only transport scholars through a contract with the education department and charters to private or public institutions. The local authority does not operate any public transportation services in the Stellenbosch area.

The table below summarizes the number of ranking facilities per town as well as the major origins and destinations served locally, inter-town, and inter-municipally (Stellenbosch CITP 2020).

Town	Ranks	Local	Inter-town	Inter-Municipal	Long Distance
Stellenbosch	4	Kayamandi, Idasvalley, Cloetesville, Jamestown, Koelenhof, Vlottenburg, Lynedoch, Devon Valley, Jonkershoek, Elsenburg,	Franschhoek, Klapmuts, Pniel	Paarl, Cape Town, Kuilsriver, Khayelitsha, Delft, Eersteriver, Mfuleni Somerset West, Worcester, Robertson, Ashton, Montagu, Hermanus	Idutywa, Lusikisiki, Willowvale, Cala, Butterworth, Sterkspruit, Mount Fletcher, Umtata, East London, Port Elizabeth, George, Matatiele, Bizzana, Keiskamahoek, Johannesburg, St Marks
Franschhoek	1	Local feed and distribute, Franschhoek farms	Stellenbosch, Pniel Klappmuts	Paarl, Paarl Mall	
Klapmuts	2	Local feed and distribute; Simondium, Muldersvlei, Elsenburg	Stellenbosch	Paarl, Dandarach Farms	
Pniel	0	Kylemore, Lanquedoch	Franschhoek, Stellenbosch		

TABLE 1: MINIBUS TAXI FACILITIES AND ROUTE DESTINATIONS PER TOWN (SOURCE: STELLENBOSCH CITP 2020)

Stellenbosch's vision: is to implement a transportation system that meets people's basic mobility needs, supports a thriving economy, and works smoothly within and across municipal boundaries (Stellenbosch CITP 2016). On weekdays and weekends, the planned system will run on a regular timetable with specified stops operating for 18 hours per day (04:00 – 22:00) with a minimum walking distance of 400 meters to the nearest stop (Stellenbosch CITP 2016).

Currently, the taxi business handles all operations; the table below illustrates their operational regions by association.

#	Taxi Associations	Areas Served
1.	Stellenbosch Taxi Association	Stellenbosch neighbourhoods around town of Stellenbosch e.g., Cloetesville, Idasvalley, Jonkershoek, Jamestown, etc.
2.	Franschhoek Taxi Association	Farm and residential areas around Franschhoek, Klapmuts, Paarl, Stellenbosch
3.	Kayamandi Taxi Association	CDB town of Stellenbosch, some intermunicipal services in Cape Town and long distance to Eastern Cape

TABLE 2: TAXI ASSOCIATIONS RANKS AND AREAS SERVED (SOURCE: STELLENBOSCH CITP 2020)



FIGURE 4: BERGZICHT MARKET STELLENBOSCH. (SOURCE: STELLENBOSCH MUSEUM)



FIGURE 6: STELMARK RANK (SOURCE: GAIBE 2009)



FIGURE 7: BLOM STREET RANK THE BRAAK (SOURCE GAIBE 2009)

Bergzicht taxi rank serves approximately 15000 to 17000 passengers per day. However, as a result of the Covid-19 pandemic, there has been a drop in ridership, which has an influence on the public transportation industry. Bergzicht, out of all the other Stellenbosch facilities, is considered the busiest,

with the greatest number of departures. Days of social grants, harvest season and month-end weekends, the rank sees an influx of commuters, and the service remains popular to the poor.

The table below shows the routes' origins and destinations, as well as the route numbers and rates for a one-way travel.

Taxi Association	Route Origin-Destination	Route Numbers	No	Fare
Stellenbosch Taxi Association	Stellenbosch – Idasvalley	630,631,632,633, 634,635	1	R 10
	Stellenbosch – Cloeteville	636, 637,	2	R 10
	Stellenbosch – Pniel/ Kylemore	667, 668,	3	R 15
	Stellenbosch – Somerset West	741 ,669	4	R 17
	Stellenbosch – Jamestown	670, 671,	5	R 10
	Stellenbosch – Elsenburg	673, 674,	6	R 12

TABLE 3: LIST OF ROUTES BEING INVESTIGATED



FIGURE 8: THE NEW BERGZICHT RANK

3.5 CHAPTER SUMMARY

In this chapter, I discussed the history of Stellenbosch as a settlement as well as how the town has evolved through time. The area's public transportation system is described, as well as how it got to where it is now. The chapter also includes a list of local and regional taxi routes as well as additional taxi associations. It also mentions the Stellenbosch University's student & staff service before moving on to the following chapter, which will detail the method I utilised to investigate my research questions.

4. APPROACH AND METHODOLOGY

4.1 INTRODUCTION

In chapter 4 the research methodology and approach used in the study are discussed. The goal of this methodology is to meet the objective stated in Chapter 1 Section 1.2.1. Section 4.2 lists the approach used to conduct the investigation, as well as a brief background on how the steps were carried out for the study. The procedure and equipment used are described in Section 4.3, and the study constraints and concerns are discussed in Section 4.4.

4.2 APPROACH

Only six of the ten routes operated by the Stellenbosch taxi association were chosen to be examined. The purpose was to study the operating license system's (in)flexibility for public transportation services, therefore onboard data for unplanned services was collected to acquire a better understanding of the MBT's operations on routes. I needed the participants' permission before I could begin the research. In Annexure B, you'll find the consent form.

The investigation was done by executing the following steps:

1. Detail Research Planning
2. Review of policies, legislation and methods to regulate and reform public transport
3. Route Identification and Selection
4. Liaison with identified participants
5. The development and design the of questionnaires and interview questions to collect data from the participants and stakeholders
6. Identifying and selecting the correct instruments and technology tools to be utilised for onboard data collection.
7. Conduct Pilots
8. The actual collection of data and conducting interviews with identified participants
9. The conducting of on-board surveys
10. Capturing of Data
11. The review and analysing and compilation of all data collected
12. The comparison of the data samples and existing information
13. Representation of Results
14. The writing up of the dissertation and preparing a conclusion and recommendation.

The surveying of the routes was to determine how much the taxis deviate from the original route description. This will be descriptive statistics presented in a graphical format by mapping the route. I did an onboard survey and used Global Positioning System (GPS) tracking equipment to compare what I mapped to the operating license's initial route description. This enables me to see how the nature of the operation is influenced by the needs of the people on the route. Being present while the vehicle was moving allowed me to better understand the dynamics of how drivers make decisions in the vehicle to retain the passenger's loyalty. Some of the routes mapped were formed more than 20 years ago, but while some elements of the route are still in use, others have become obsolete as land uses have changed over time.

The investigation will be a statistical representation, but rather will involve interviewing a small number of respondents, such as minibus taxi owners, drivers, and municipal officials, to gain insight and reasons for certain decisions and why the planning authority moved the ranks and operations. The investigation will also include passenger interviews using a questionnaire to assess the impact of the modifications on their daily travel. The type of information sought will include passengers experience related to time before and after the rank was moved. How frequently minibus taxi drivers deviate from the route description, the impact of operational changes and the challenges the planning authority faced, particularly when drivers deviate from their original route descriptions. The first step in the interview was to obtain consent from the participants by describing the aim of the interview and assuring them that their personal information would be kept private.

Through these interviews, I hope to answer the research questions. All information was transcribed from the questionnaire and interview sheets and represents the participants' perspectives and experiences. However, the data collected signifies only a small sample size and does not reflect the views and experiences of the full population of Stellenbosch. Some of the interviews with passengers were conducted while they were waiting for a vehicle, while others were conducted while they were traveling in a vehicle.

4.3 METHODOLOGY

4.3.1 IDENTIFICATION OF ROUTES AND ROUTE DATA

Any trip taken by a person has an origin and a destination point, and it may be necessary to use one or more modes to complete the journey. The existing public transportation operation can be mapped to get an idea of where to and how people travel. As a result, examining present operations to reveal the operating license system's (in)flexibility. Routes were chosen based on their descriptions; routes whose descriptions remained unchanged but were moved from on-street amenities to Bergzicht rank comprised the research's data sample. The on-board mapping identifies how they now operate and where they are operating off route. The NLTA does allow for route adjustments, however this is a process that must be coordinated with the taxi industry. The route number becomes obsolete once an amendment is completed, and a new number is allocated to the route. Before an adjusted procedure is

deemed genuine, it must receive dual permission from both industry and authority; if one of the parties cannot agree on the adjustment, the process will be halted.

MBT onboardings were undertaken from the 5th to the 7th of August 2021, 25th to the 28th of August 2021, and from the 6th to the 9th of September 2021. The onboardings were conducted at set intervals on the identified routes, including a morning, lunchtime, and afternoon trip. This was done to see whether there were any substantial operational variations based on the time of day. It was also discovered that different demographic groups use the service at certain times. During morning trips, it was clear that people were hurried, and some were irritated by my presence, while others were kind and curious.

At midday, there was a casual atmosphere, as if passengers had agreed to lengthier waiting times. The afternoon journeys were expected to have a more varied vibe, with some passengers being hyper and others drained and just wanting to get to their destination. The surveys were carried out in order to document the route alignment and map it to the operation.

Taxi Association	Route Origin-Destination	Route Authorities/numbers	No.	Dates
Stellenbosch (6 routes that was surveyed)	Stellenbosch – Idasvalley	630 631, 632,633,634,635,	1	2021/08/05-2021/08/07
	Stellenbosch – Cloeteville	636, 637	2	2021/08/05-2021/08/07
	Stellenbosch – Pniel/ Kylemore	667, 668,	3	2021/08/25-2021/08/28
	Stellenbosch – Somerset West	669,741	4	2021/08/25-2021/08/28
	Stellenbosch – Jamestown	670, 671	5	2021/09/06-2021/09/09
	Stellenbosch – Elsenburg	673, 674	6	2021/09/06-2021/09/09

TABLE 4: ROUTES AND SURVEY DATES

4.3.2 ROUTE MAPPING DEVICE

During the route mapping pilot, two techniques were investigated: a handheld GPS device and a Smartphone with a tracking application, in order to determine the most appropriate method and equipment for data gathering. The goal of the pilot was to test the devices and make sure they could perform what they were supposed to. The pilot was run after the morning peak period on a weekday in August 2021. The android-based smart mobile tracking application using GPS technology was the technique of choice to map the routes. OSMTracker (Open Street Map) is the application that was used during the mapping, and it stores positional (latitude/longitude) and non-positional data of points of interest (POI).

The reason for going with the smart mobile application was that the handheld device lost satellite coverage when traveling through certain areas and battery life did not allow for multiple routes to be surveyed on one day. OSMTracker data is saved as a GPS exchange file, which may be exported and extracted as a Keyhole Markup Language Zipped (KMZ) format, which can then be displayed in Google Earth or a Geographic Information System (GIS). Despite the fact that the application includes a variety of functions and alternatives for collecting data, the mapping/tracking option was the only one utilised in the data gathering process. The handheld device lost satellite coverage when traveling through specific places, and battery life did not allow for numerous routes to be surveyed in one day, hence the smart mobile application option was the preferred choice.

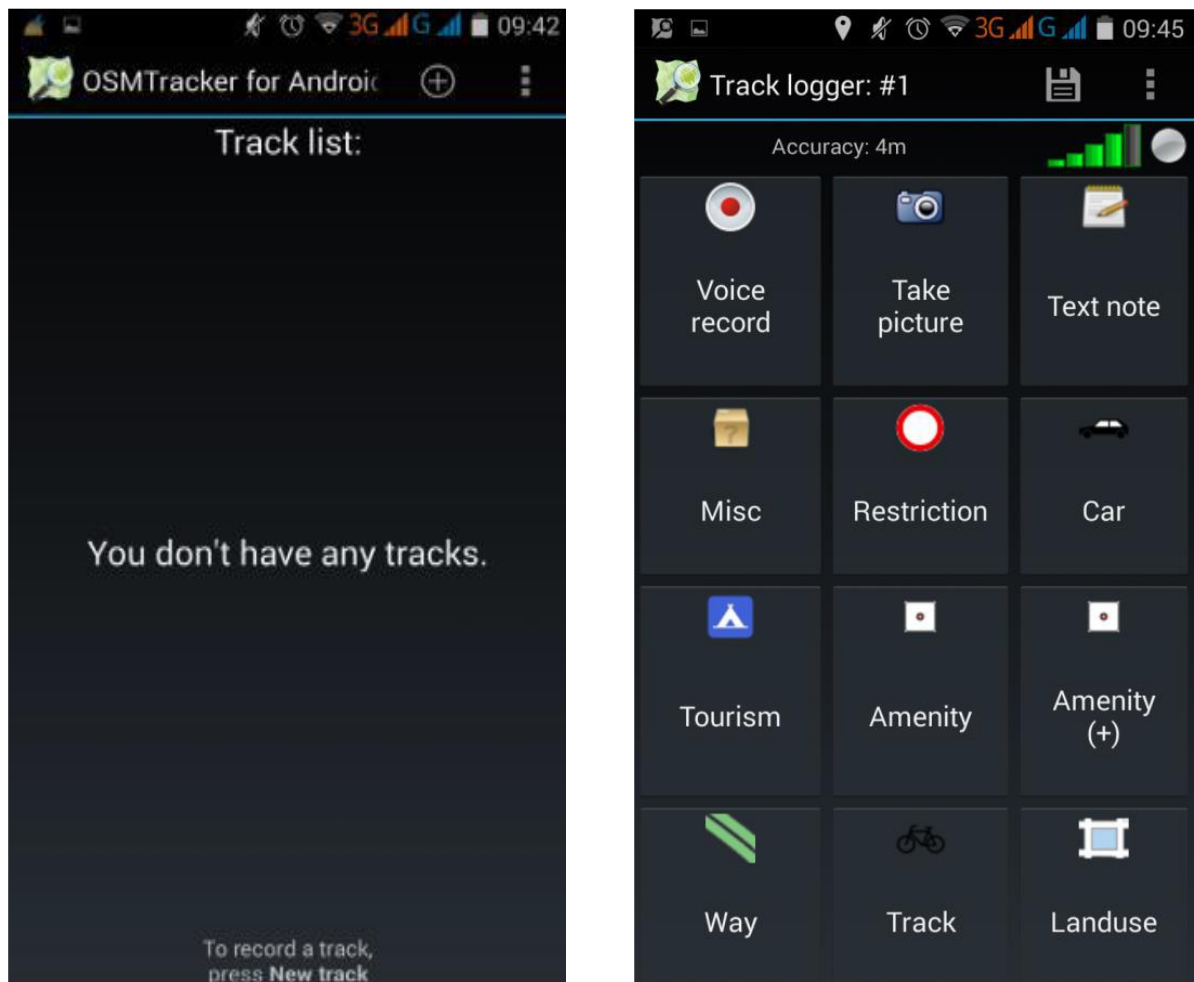


FIGURE 9: EXAMPLE OF INTERFACE BEFORE AND AFTER GPS FIXES (SOURCE OSM TRACKER MANUAL)

The onboard surveys determined how vehicles were currently operating and which sections of the routes were no longer being traded on, indicating if there was sufficient demand for those routes or whether they should be consolidated with another route.

4.3.3 TAXI INDUSTRY LIAISON

The liaison with the taxi industry has proven to be a significant part of the study. A meeting was organized before to the start the on-board surveys to seek industry consent. I simply shared the method and purpose for the probe since I have an excellent working relationship with the industry. The interviews with the drivers took place at the rank, while the interviews with the owners took place at the association's offices. Six drivers were interviewed, one for each route, and four owners, as some of them own vehicles on multiple routes.

The interviews for drivers focus on:

- Passenger Demand
- Issues with passengers
- Conflict between drivers
- Deviating from the route & Conflict with law enforcement
- Flexibility of the operating license
- Type of operating license preferred

Route	Years on route	Interview Dates
Idasvalley	20 years +	28/08/2021
Cloetesville	20 years +	19/07/2021
Pniel/ Kylemore	15-20 years	04/08/2021
Somerset West	20 years +	26/07/2021
Jamestown	20 years +	19/07/2021
Elsenburg	20 years +	19/07/2021

TABLE 5: DATES WHEN INTERVIEWS WERE CONDUCTED WITH DRIVERS

The interviews for owners focus on:

- Decision to relocate & Location Identification
- Disposition to change operating license
- Demands for drivers to deviate
- Flexibility of the operating license
- Type of operating license preferred

Route	Years in the industry	Interview Dates
Idasvalley	37 Years	26/08/2021
Cloetesville	37 Years	26/08/2021
Pniel/ Kylemore	35 Years	08/09/2021
Somerset West	26 Years	26/07/2021
Jamestown	26 Years	26/07/2021
Elsenburg	20 Years	26/07/2021

TABLE 6: DATES WHEN INTERVIEWS WERE CONDUCTED WITH OWNERS

4.3.4 MUNICIPAL OFFICIALS LIAISON

Three officials from the municipality were interviewed, one through Skype and the other in person. It was set up as a meeting, with the questions being presented to the participants in order to get comprehensive verbal responses and better understand their motivations. The dates when interviews were done with officials and the delegation, they had at the time the rank was shifted are summarized in table 6 below.

The interviews for officials focus on:

- Industry consultation on relocation
- Objective of the relocation of rank
- Identification of new location
- Undertaking to amend route descriptions
- Flexibility of the operating license
- Law enforcement after relocation

Delegation of official	Interview Dates
Head: Public Transport	30/09/2021
Traffic officer: Taxi Unit	27/07/2021
Respondent requested that delegation should not be recorded	12/07/2021

TABLE 7: DATES WHEN INTERVIEWS WERE CONDUCTED WITH MUNICIPAL OFFICIALS

4.3.5 PASSENGER LIAISON

A total of 12 passengers were interviewed on the 6 routes surveyed, with two people per route receiving a Questionnaire. Many were hesitant to engage but were willing to express their opinions about the industry and its operations. According to the data below, the majority of passengers who are familiar with the older facility only travel on grant days or at month end.

The interviews for officials focus on:

- Most common trip made by minibus taxi
- In vehicle journey time
- Ease of travel before and after relocation of rank
- Personal experience on condition & safety of facilities before and after relocation of rank

Route Name	Passengers	Interview Dates
Idasvalley	Participant 1	26/07/2021
	Participant 2	26/07/2021
Cloetesville	Participant 1	04/08/2021
	Participant 2	04/08/2021

Pniel/ Kylemore	Participant 1	26/07/2021
	Participant 2	05/08/2021
Somerset West	Participant 1	26/07/2021
	Participant 2	05/08/2021
Jamestown	Participant 1	22/07/2021
	Participant 2	26/08/2021
Elsenburg	Participant 1	04/08/2021
	Participant 2	04/08/2021

TABLE 8: DATES WHEN INTERVIEWS WERE CONDUCTED PASSENGERS

4.3.6 DOWNLOADING OF DATA

After the route was mapped, it was easy to download the file, because once Google Earth was loaded, the file could be opened, and Google Earth would prompt to import it and construct a Keyhole Markup Language (KML) track. A screenshot was taken after a route was displayed on Google Earth to capture it as an image.

4.4 LIMITATIONS AND PROBLEMS ENCOUNTERED

The questionnaire was intended so that participants could complete it on their own, but due to the Covid-19 pandemic, they were hesitant to do so, thus an interview technique was used, which were time consuming. Some passengers only participate because they believed they would be compensated for their time, but upon informing them that no compensation would be given, they would abandon the process. All of the interviews were recorded on the various data collection forms, and some participants responses would deviate off-topic and had to be reminded of the original question. Drivers would operate as per the route description and adhere to speed limits and road rules during off-peak periods due to my presence, but passengers would question why they are so meticulous during this time and why they do not take different routes as usual.

4.5 CHAPTER SUMMARY

The strategies used to gather the data needed for the study were detailed in this chapter. The first section of the chapter highlights the procedure and actions taken, while the second section identifies the tools and approaches used to acquire data for the routes. The information gathered is an important aspect of the research process in determining the research's outcome, which will provide answers to the research questions. From here on I will be moving on to the following chapter, which will discuss the analysis and results.

5. DATA ANALYSIS & RESULTS

5.1 INTRODUCTION

In order to answer the research questions given in Section 1.2.2 of Chapter 1, this chapter evaluates the data analysis and results of the research and provides an interpretation of the findings. The subsections of this chapter contain a list of pertinent research questions. Section 5.2 examines the impact of the rank relocation on passenger travel circumstances, section 5.3 discusses the cause for the change in location. Section 5.4 examines whether the existing operating license system is inflexible, section 5.5 examines why route descriptions have never been amended, section 5.6 examines the influence of obsolete route descriptions on law enforcement-taxi conflict, and section 5.7 summarizes the chapter.

5.2 HOW DID THE RELOCATION OF THE RANK EFFECT PASSENGER TRANSIT CONDITIONS?

Answering research question 1

A total of twelve passengers were interviewed, two per route, this was to establish if they have different perspectives. No specific gender or age was sought; only individuals who fit the initial criteria were considered. The majority of the respondents interviewed said that the minibus taxi is their primary form of transportation from home to work. The analysis was for the selected routes to depicts the responses of the participants to the research question on their experiences before and after the ranks was relocated. After the rank was relocated, the time spent walking to the rank, the in-vehicle time, and waiting has increased (see figure 10). Walking time rose as the distance between destinations and the rank became longer. In-vehicle time and waiting time when transferring have also increased, though some have indicated that it remained the same.



FIGURE 10: PASSENGER EXPERIENCES IN TERMS OF TIME BEFORE AND AFTER RANK MOVED

Participants' viewpoints vary, as seen in the graph below (see figures 11), with the majority indicating that their travel situation has worsened as a result of the relocation, while others have suggested an improvement.

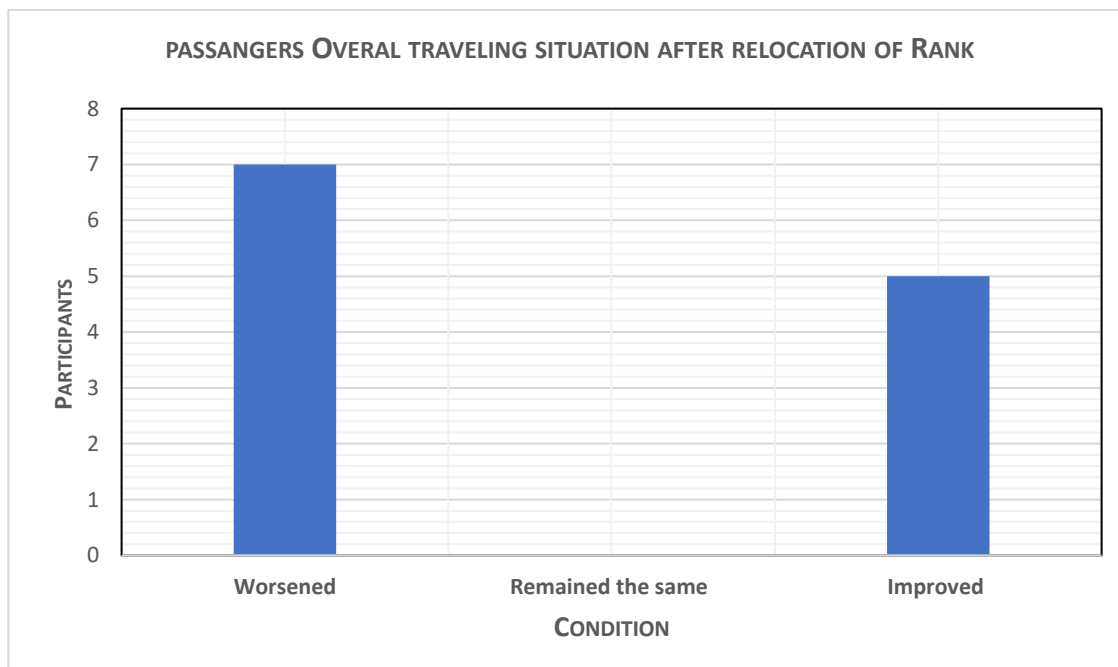


FIGURE 11: TRAVELING CONDITION AFTER RANK MOVED

Figure 12 shows that the ease of traveling has also reduced following the relocation, with the majority of participants claiming that traveling was easy before to the relocation but has become difficult since then.

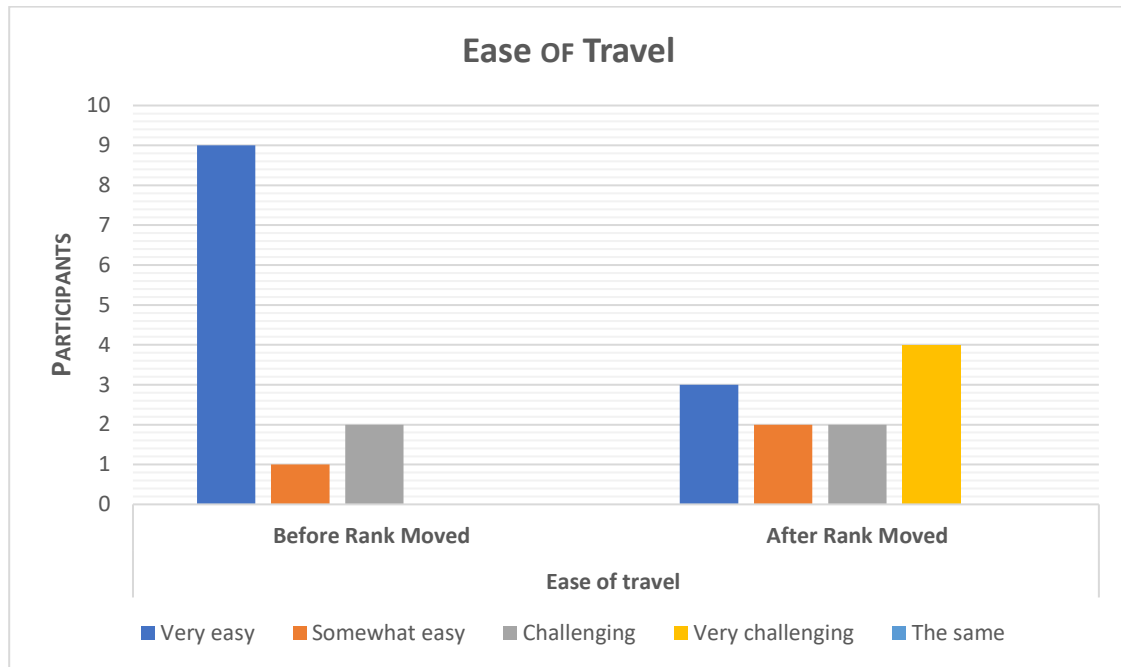


FIGURE 12: COMPARISON OF THE EASE OF TRAVEL

The graphs below (figures 13 to 16) present how passengers felt about facilities at the previous ranks compared to current rank. The four categories in which participants were asked to report their perceptions before and after the rank move were weathering factors, seating comfort, bathroom facilities, and safety & security.

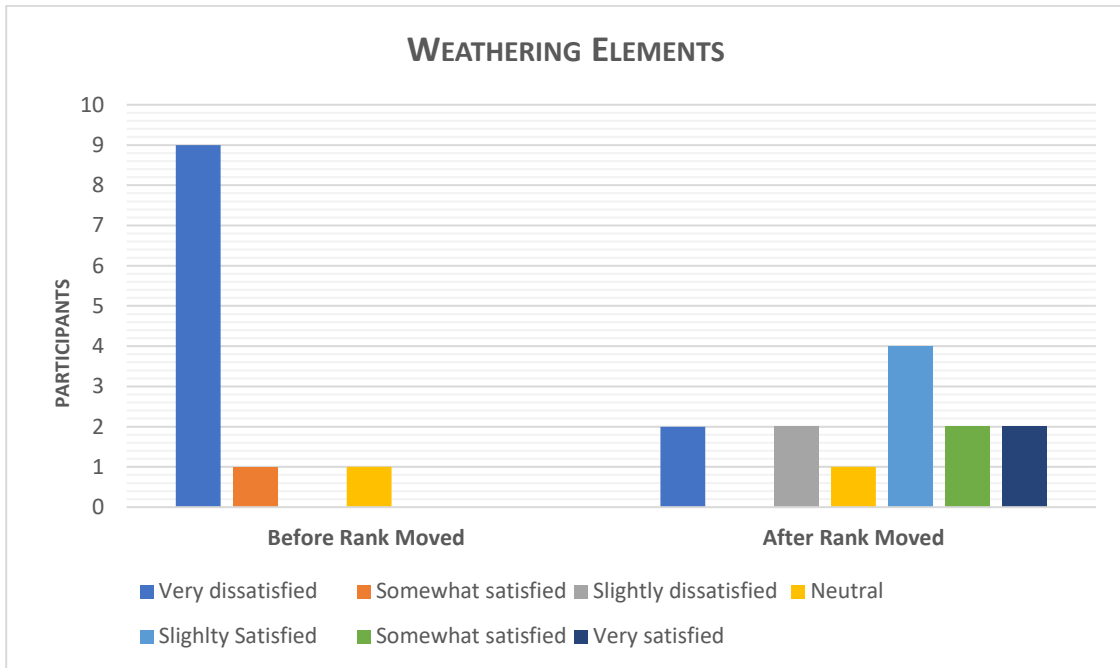


FIGURE 13: COMPARISON BETWEEN WEATHERING ELEMENTS

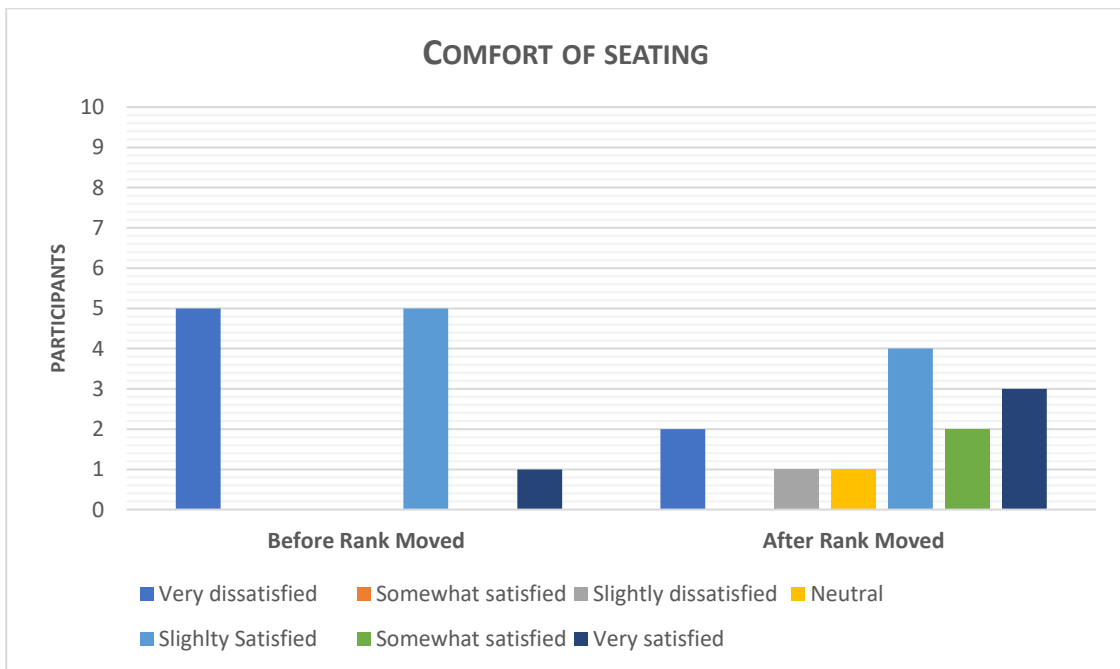


FIGURE 14: COMFORT OF SEATING COMPARISON

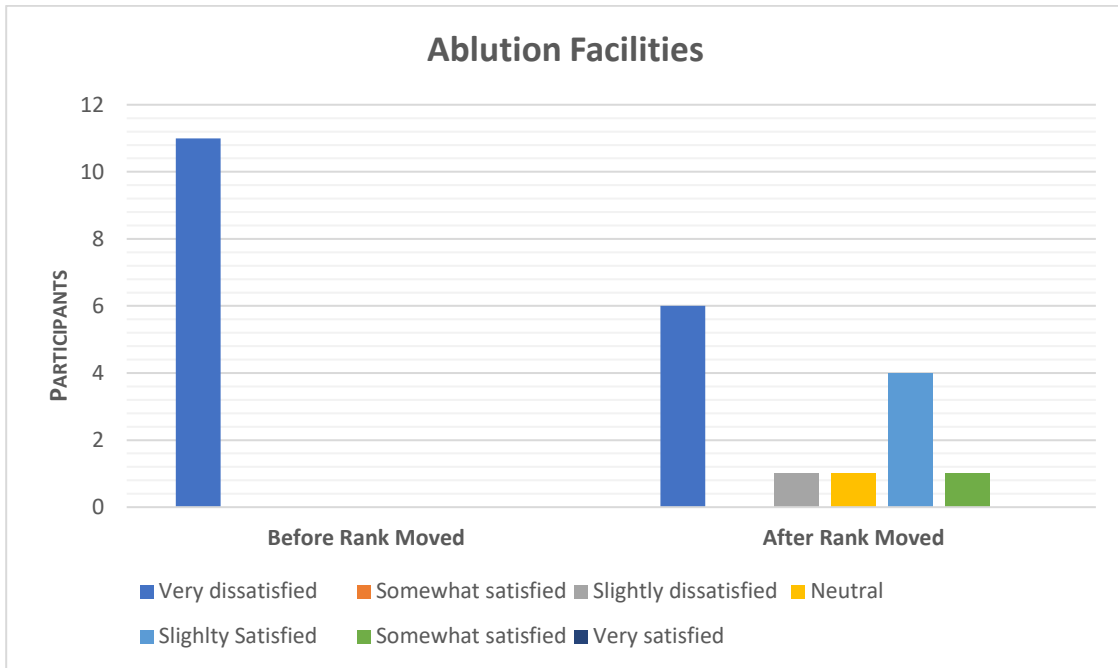


FIGURE 15: ABLUTION FACILITIES COMPARISON

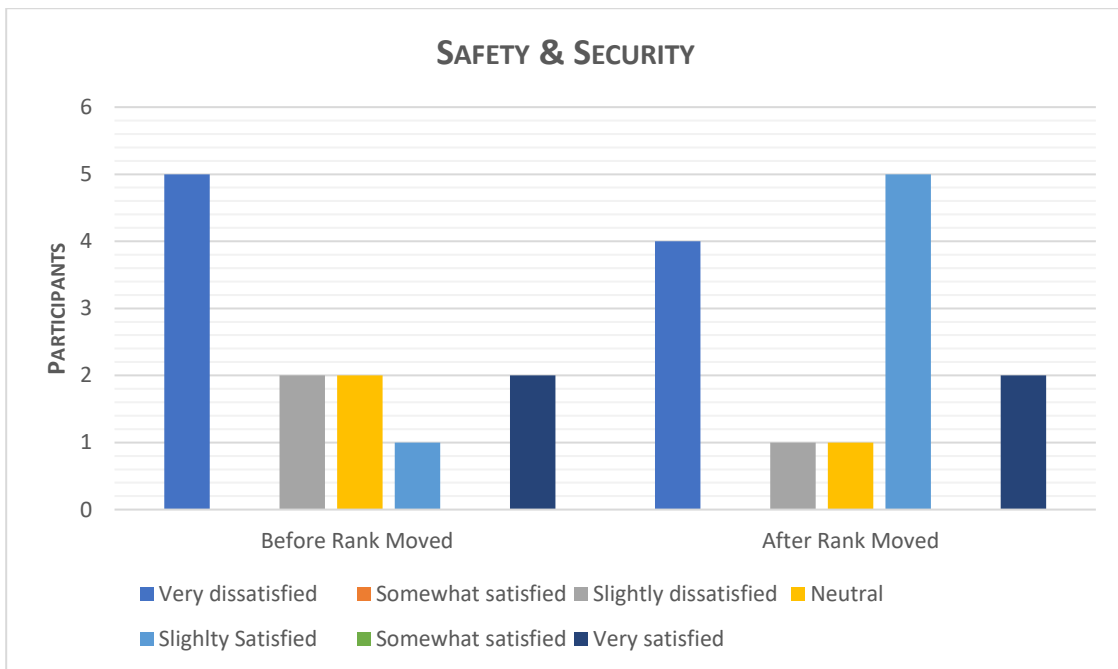


FIGURE 16: SAFETY AND SECURITY CONDITIONS

Based on the above displays, it can be inferred that the passenger experience suffered when the ranks was shifted to a new site, which is not a positive thing and may stop people from using the minibus taxi service.

5.3 WHY DID THE LOCATIONS OF THE RANKS CHANGE?

Answering research question 2

In an attempt to improve the public transportation network by consolidating all the ranks the municipality conducted an inquiry to find a suitable area for the new rank to be built. The Bergzicht site was chosen as the optimum location to create the rank based on their analysis and a conceptual design process. The location was already being used by taxis and had facilities that simply needed to be upgraded in terms of infrastructure. The property's size allowed all of the CBD's informal ranks to be consolidated into one facility, which attempted to improved public transportation operations. The property also featured additional commodities, such as informal trading, and was better geographically positioned near main routes, allowing taxis to get to their destinations faster by avoiding traffic during peak hours. In addition to the foregoing, the absence of suitable amenities at the informal ranks led to public and business concerns about how the taxi industry did business at these locations. As a result of this, the planning authority, in collaboration with the taxi association, decided to shift the ranks to Bergzicht, which would benefit everyone.

5.4 IS THE EXISTING LICENSING SYSTEM INFLEXIBLE?

Answering research question 3

Yes, the existing licensing system is Inflexible, as aforementioned, drivers were requested to relate their experiences from the past to the current situation, which is also influenced by the nature of the existing operating license system. There is still a need for the same type of route specification to prevent some of the issues that have been connected with radius-based permits in the past. However, should it return to radius-based permits without fundamentally altering the nature of how associations function and how they are organized, which is a challenging, if not impossible task. The issue that encouraged the country's legislators to change from a radius-based permit to a route-based permit will remerge. Unfortunately, the system is unsatisfactory but there may be reasons to switch to a more flexible system. However, switching to a more flexible system may not be practicable, and the industry may continue to agree that the route base approach has value.

To ensure that the operating licensing system was more accommodating to their type of operation, drivers and owners were asked to suggest what type of licensing system they would find suitable for their needs. There were ten participants in total, six of whom were taxi drivers and five of whom were taxi owners, and figure 17 below depicts their responses.

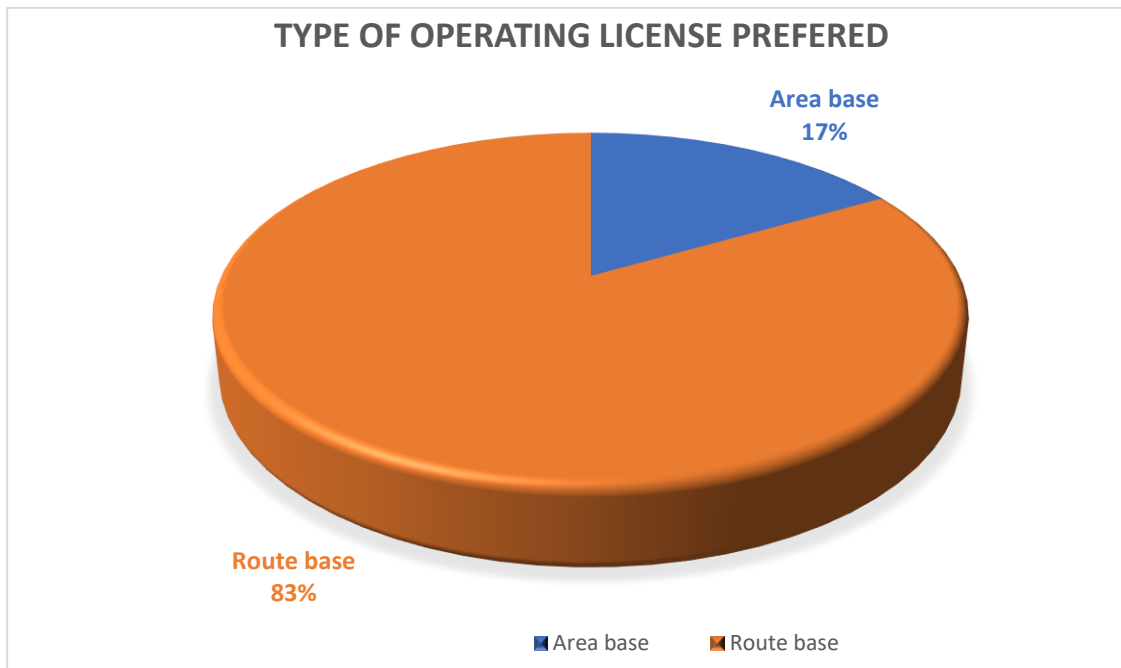


FIGURE 17: PREFERRED OPERATING LICENSE

Because switching to a more flexible operating licensing system with a route specification element is impossible, mechanisms must be put in place within a route base system to allow the license to be updated to avoid the problems of being forced to run on an illegal route. As a result of the foregoing, the operating license system lacks the procedures that would allow it to be more flexible without infringing the law, and the public transit operating license system remains inflexible.

5.5 WHY WERE THE OPERATING LICENCES ROUTES NEVER AMENDED?

Answering research question 4

One of the items agreed upon in the verbal agreement, according to both the planning authority and the taxi owners, was that after the rank was constructed, the municipality would update the route descriptions to coincide with the actual operation and assure that no operator would be fined. However, management at the association and, as a result, at the municipality has changed over time. Those who agreed have left, and those who have taken up their positions have failed to complete the formal agreement.

The taxi industry, on the other hand, believes they are not responsible for the cost of the change, and the municipality has stated that they attempted to change the routes at the time of the relocation, but the administrative process was stymied by the provincial board due to the ownership of the operating license being with the taxi industry. If the planning authority wants to change the routes, it will need official written authorization from each operating license holder, as well as a written agreement stating

that the owner and association agree with the new route description and only after full payment is made to the PRE the routes will be amended. The routes remain intact, as does the difficulty it poses to operators and traffic law enforcement.

5.6 HOW DID THE OUTDATED ROUTE DESCRIPTION AFFECT POST-RELOCATION TRAFFIC LAW ENFORCEMENT CONFLICT?

Answering research question 5

Several route descriptions are no longer valid or operated as described on the operating licenses. Land uses have changed throughout time, new places have developed, street names and directions have shifted, but the operating route license remains unchanged. The fact that there are multiple route numbers for the same origin and destination adds to the confusion and also increase traffic law enforcement conflict, it is standard practice in the taxi industry to travel the shortest distance and in the quickest time feasible by avoiding congested routes and busy intersections. This also means that choosing these shorter routes violates the operating conditions, resulting in confrontations between taxis and law enforcement officers. Taxi Drivers mentioned that traffic law enforcement know why they deviate and that routes changed based on passenger requests.

Figure 18 depicts a typical example of one of the six routes; when comparing the mapped route to the description on the operating license, it is clear how the driver deviates from the route to keep passengers happy to the point where the operation encroaches on other routes that are not within his authority, resulting in infractions that lead to law enforcement disputes; table 9 highlights the differences between the current operating description and the operating license description, Please see Annexure D for all the other routes. Furthermore, figure 19 reveal that over 80% of the drivers interviewed on the six routes deviate from their initial operating license description in order to be financially viable, and figure 20 shows that conflict with law enforcement has escalated as a result of the relocation.

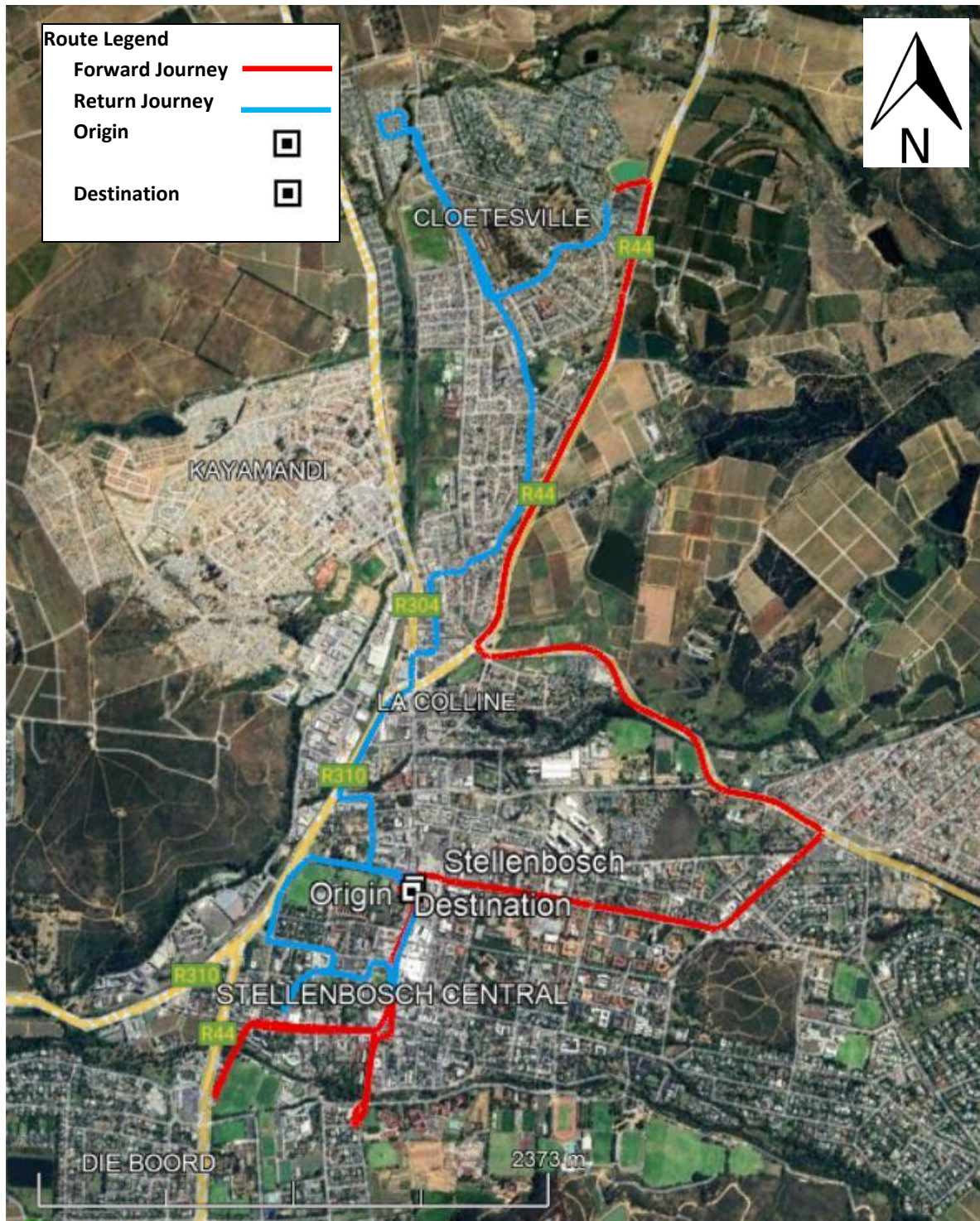


Figure 18: Forward and Return Journey Cloetesville Route (Source: Google Earth)

Route Name	Stellenbosch – Cloeteville
Route Numbers Affected	636, 637,
Old Route Description	<p>636: From Taxi rank at Blom Street (inside) Stellenbosch, left into Bird Street right into R44, left into Langsuid Street to Cloeteville residential area and back as follows: right into R44 to Stellenbosch business district subject to the following conditions: 1. Passengers must at all times be loaded at allocated places; 2. No passengers may be picked up in the town center (Bird Street); 3. Passengers may be picked up at Du Toit Railway Station; 4. Passengers must be picked up at allotted parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>637: From Taxi Rank at Blom Street (inside) Stellenbosch, left in Bird Street to Du Toit Station, right in Bell Street, left in Tennant Street, to Cloeteville residential area and back as follows: right in Bell Street, left Bird Street to the central business district and surrounding residential areas namely: Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial Area and Devonvalley Industrial Area subject to the following conditions: 1. Passengers must be picked up at the allocated places at all times; 2. No passengers may be picked up in the town center (Bird Street); 3. Passengers may be picked up at Du Toit Railway Station; 4. Passengers must be picked up at agreed places at all times, except the times in between.</p>
Route Description as per on board data collected	From Taxi rank at Bergzicht Stellenbosch, right in Bird Street left into Dorp street, left into aan dewagen until turn around point, right into Dorp street, right in Piet Retief, turn around at Paul Roos Spar, straight into Bird street, right into Merimman Avenue, left into Cluver Street, Left into Helshoogte road, right at R44, left into Hendrickse Street to Cloeteville residential area and back as follows: right in Bell Street, left Bird Street, right into R44 to the central business district, left into Molteno Road, right in Hofman road left into Merriman till Bergzicht Taxi rank.

TABLE 9: COMPARISON OF ROUTE DESCRIPTION ON CLOETESVILLE ROUTE

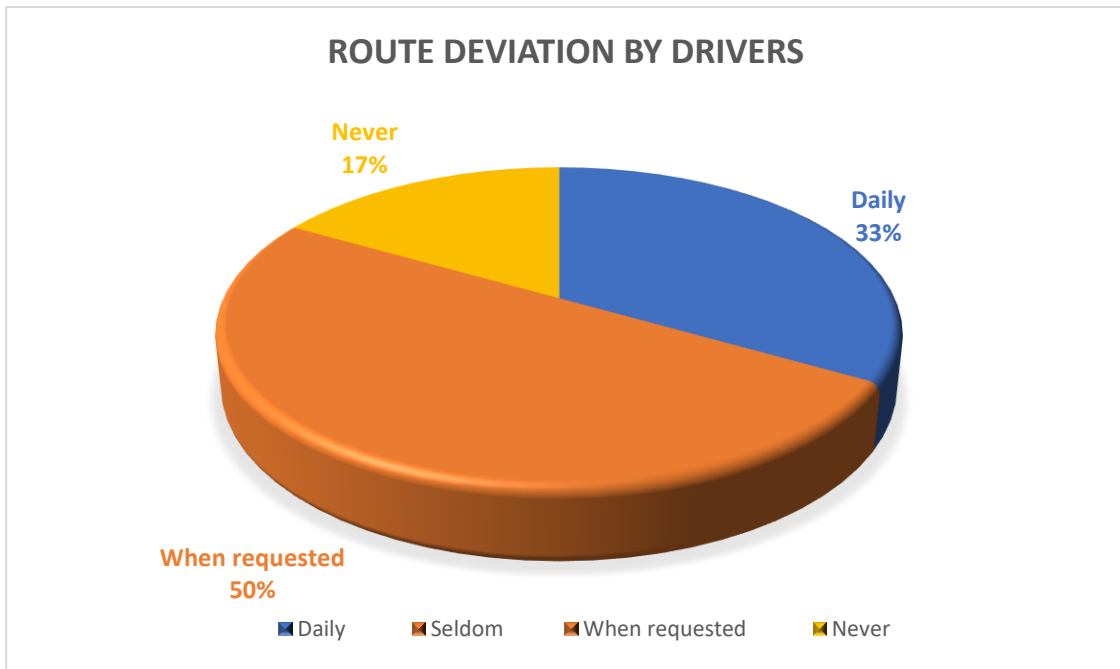


FIGURE 19: ROUTE DEVIATIONS

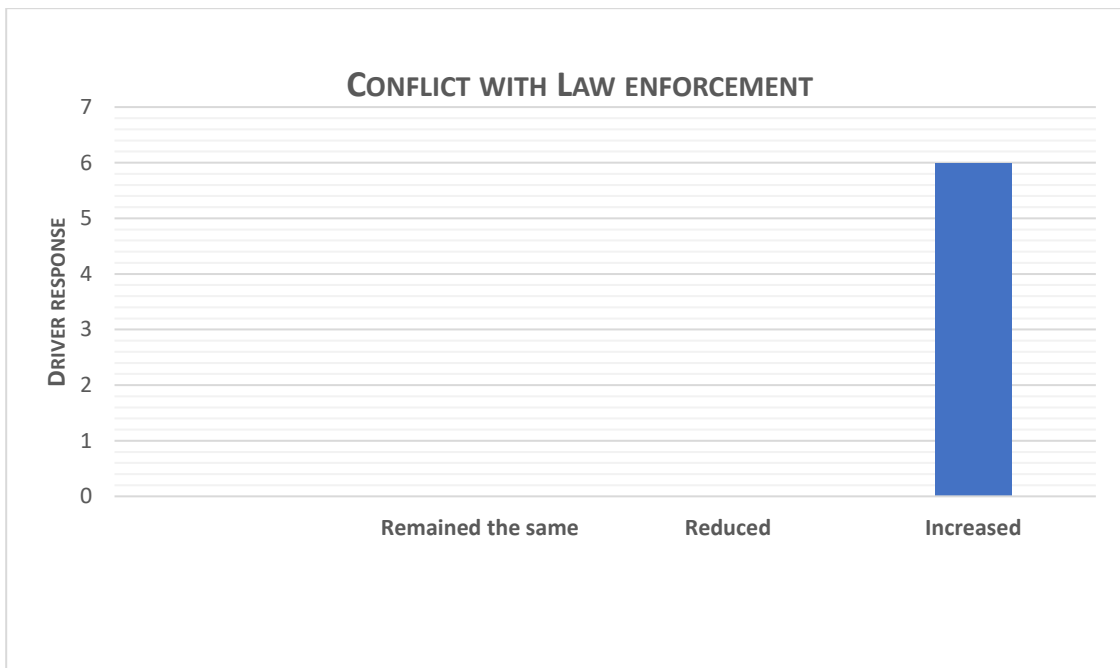


FIGURE 20: LAW ENFORCEMENT CONFLICT

The relocation has made deviating a norm for some drivers and thus increasing the conflict with law enforcement. However, the industry remains opposed to changing from route base to an area-based

operating license because they believe it will confuse things even more. A map of all the routes that were surveyed is shown in Figure 21.

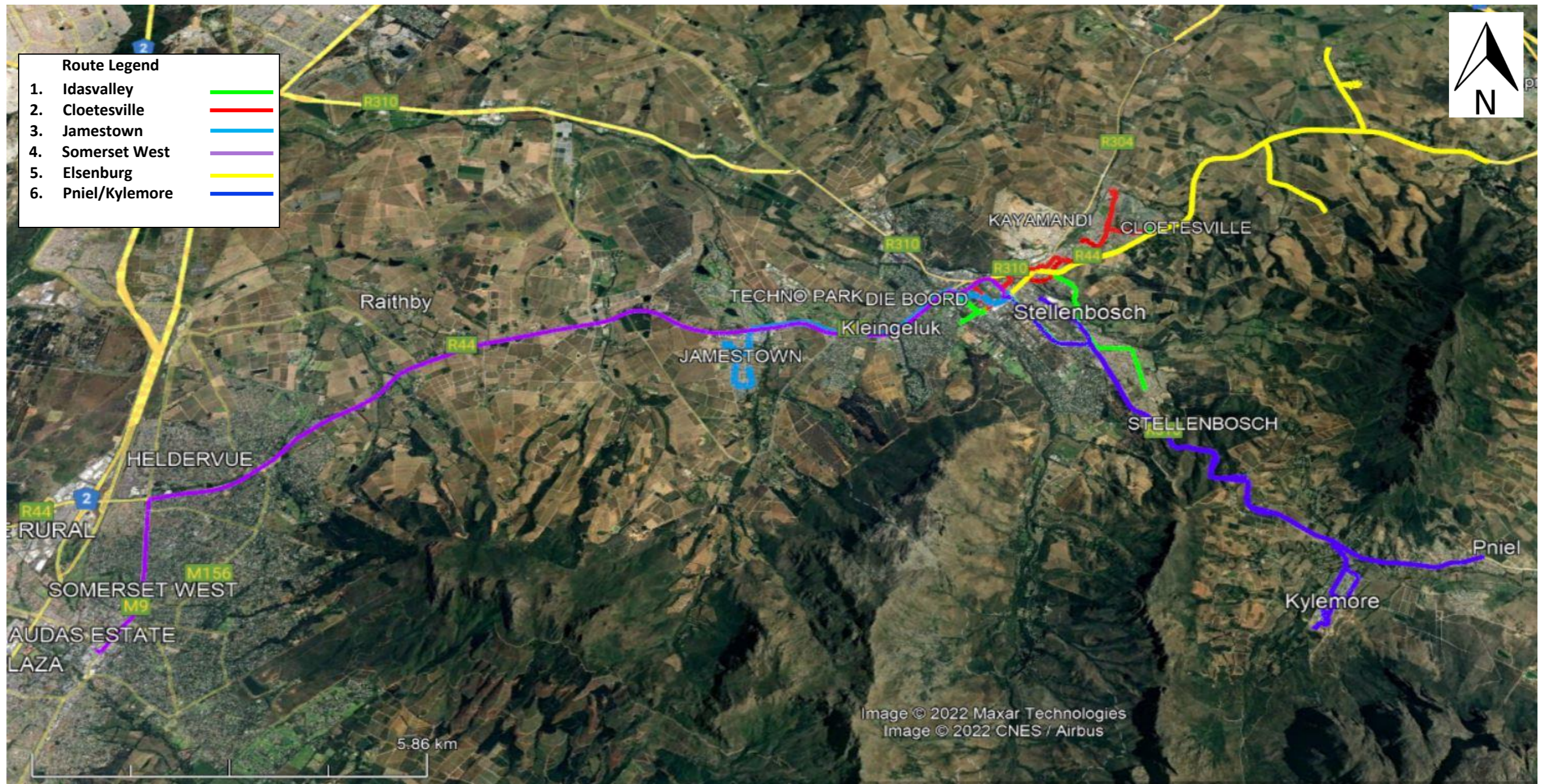


FIGURE 21: A MAP OF ALL THE SIX ROUTES SURVEYED (SOURCE: Google Earth)

5.7 CHAPTER SUMMARY

The analytical results are displayed to clearly highlight the key aspects that impacted the research design, which responds to the six research questions given in Chapter 1. In Section 5.2, it is apparent that the change in rank has had a negative impact on everyday operations and many other things, in addition to the passengers' traveling experience.

In Section 5.3, we learned that studies were conducted that guided the decision on the relocation of the ranks. Because routes are not changed even with the aim to improve public transportation, section 5.4 highlights that those critical aspects of the system remain intact making the operating licensing system in Stellenbosch inflexible.

Section 5.5 addresses the uncertainty as to why the operating license route description has not changed and what each stakeholder must do to guarantee the process is completed. Because of many of the factors described above, the pin-ultimate section 5.6 highlights that there is a rise in confrontation between traffic law enforcement and minibus taxi drivers.

When it comes to public transportation planning, the material in this chapter is critical because so much information can be overlooked, causing problems for not only the industry, but all stakeholders collectively.

6. DISCUSSION

6.1 INTRODUCTION

This chapter reviews appropriate interventions for improving the operating license system in section 6.2, the current operational licensing system is addressed, while section 6.3 explores how the operating license system might be modified to provide for a more flexible operating licensing system, and section 6.4 conclude the chapter.

6.2 THE EXISTING SYSTEM

As indicated in Chapter 2, the evolution of the operating licensing system in South Africa has a long history. Industry regulation has its limitations, but if appropriate measures can be applied, the operating system could improve. Understanding the demands of passengers is one of the most crucial aspects of public transportation service in order to preserve the industry's routes long-term viability. Understanding how operating circumstances and behaviour affect route demand is equally crucial, and hence at the heart of this investigation. The operating license system has been altered all over the world as regulations have evolved to give a more flexible structure that is appropriate for the intended purpose of the operations. This provides information to the operating license system and helps to determine its flexibility. In Chapter 2, regulatory decisions were investigated and reviewed, but only a handful were judged to be appropriate for this investigation.

Following a study of the various legislative documents, transport regulatory agencies at the local level are required. This would not only strengthen industry regulation but also ensure that the operating licensing system is accurate, especially when it comes to industry competitiveness. Local planning authorities currently guide the PRE when it comes to operating license applications. Section 36 of the NLTA mandates that local planning authorities develop an integrated transportation plan, which must be updated annually to reflect changes in public transportation availability and demand. Regardless of whether or not local transportation plans are being prepared, the PRE is still relying on local planning authorities to provide comments for decision-making guidance. However, the number of operating licenses issued per routes are not limited in the transportation plans, and if a demand is shown on a route, it serves as proof that operating licenses can be issued.

Regular data gathering at the local level would help to enhance the operating license system as a whole, and if new areas emerge, improvements can quickly be made to allow activities to flow without being hampered by administrative processes. This would not only improve public transportation, but it will also lessen traffic law enforcement conflicts and attract more passengers as travel conditions become smoother to new locations without violating any laws.

6.3 OPERATING LICENSING SYSTEM IMPROVEMENT

As previously stated, establishing a licensing authority at the local level could aid in directing the industry and ensuring conformity with standard policies and plans if the authority is given powers by national legislation. Local government, through a survey team, examines current demand on routes by surveying them on a regular basis and instructs industry to provide the appropriate service. The number of vehicles allowed in the minibus taxi industry should be limited, and the local government should establish admission requirements. Develop a regulatory framework that gives local governments the authority to

implement public transportation laws in their areas that specify the minibus taxi industry's rights and obligations.

A complete overhaul of all outdated legislation should be done in order to sustain the regulatory systems. Local governments should be empowered to decide what type of service is needed and how operating licenses for specific routes will be issued: concessions, contracts, franchises, or route packages. Fares should be set by the local government in agreement with the taxi industry and structured according to the type of service.

If operating licenses are not issued through a tender procedure, the local government should form a committee comprised of various stakeholders to handle decisions on their issuance, which should be governed by the regulatory framework.

New routes should be advertised to the public in order to solicit feedback that will help local governments better organize routes depending on how people wish to travel and empower passengers to steer the process. Local governments should have the authority to determine how routes will be run and how industry will apply to become authorized to provide the service. To promote a safe and appealing public transportation service, which will improve the operating licensing system, industries will be graded on their performance in terms of quality of service. If the local government creates route packages, they will be in a better position to construct the necessary infrastructure at stops along the route, ensuring that the network is well-equipped.

6.4 CHAPTER SUMMARY

Despite infrastructure improvements, the operating license system remain inflexible, posing a barrier for present operations. Section 6.2 discussed the current system and how current legislation limits the government's ability to promptly resolve issues. The discussion in section 6.3 indicates the most appropriate implementation improvement for reforming and changing the inflexibility of the operating license system in the Stellenbosch area. The results in section 5.5 of Chapter 5, demonstrates that the operating routes in the area remain unchanged and are unfit for present operations. Therefore, the information in section 6.3 advises on improvements that could resolve current issues and create a flexible system.

The industry is resistant to change, but if it can be demonstrated that a more structured approach led by planning authorities will improve service, attract more passengers, increase route financial viability, and develop a flexible and fit-for-purpose operating licensing system, they will embrace it.

7. CONCLUSIONS & RECOMMENDATIONS

7.1 CONCLUSION

This is the final chapter, and it will conclude the research as well as present the research's recommendations. The purpose of this study was to investigate into the operating licensing system's inflexibility, specifically how accommodating it is when ranks shift locations and how that affects passenger experience, route viability, law enforcement conflict, and route specification.

The study focusses on answering the following research questions:

1. How did the relocation of the rank effect passenger transit conditions?
2. Why did the locations of the ranks change?
3. Is the existing licensing system inflexible?
4. Why were the operating license routes never amended?
5. How did the outdated route description affect post-relocation traffic law enforcement conflict?

A comprehensive literature review was completed to provide an overview of the history of the operating licensing system, as well as what led decision makers in South Africa to amend and implement changes to legislation over the past decades, resulting in the current unfit-for-purpose operating licensing system. The study region is briefly discussed, highlighting important aspects of how operations for the area have evolved over time as the town's spatial structure has changed to accommodate passenger needs. It also emphasizes Stellenbosch's goal of implementing a transportation system that meets people's basic mobility demands and the importance of large organisations in the future of public transportation in the area.

The research problem is examined using a mixed method approach, with a qualitative analysis focusing on the people affected by the system and a quantitative analysis focusing on the obsolete route descriptions and how they differ from the current operational route using geographical mapping to compare the differences between the two. Semi-structured interviews were the primary method for gathering data for the qualitative process, while smart phone technology was used for the quantitative phase, resulting in a thorough examination and analysis of the findings, which answered the research questions in Chapter 5.

A discussion follows Chapter 5, which review the existing operating license system and the obstacles it poses to public transportation, with the goal of identifying areas for improvement.

7.2 ADDITIONAL FINDINGS

- When the position of the ranks changed, individuals began to utilize other modes of transportation, despite the fact that the distance did not change considerably, causing passenger inconvenience. The majority of passengers interviewed said that convenience is important, and that they take the taxi that is nearest to the stores, regardless of whether or not the taxi is legal.
- The number of charter and staff services is growing rapidly, and operators who are not linked with any taxi organizations are abusing these permissions to run route-based operations.

These are the vehicles that collect passengers closer to stores and are not regulated by traffic law enforcement.

- An increase in incidents amongst operators over passengers, particularly on routes coming from Cape Town; occurrences are more frequent in the afternoon than in the morning, though they occur on a regular basis throughout the day, when illegal taxis prevent legal vehicles from collecting passengers on the routes.
- Ranks serve as a safe haven for criminals, as the lack of law enforcement allows them to establish informal structures and conduct their business, resulting in an unpleasant environment that drives passengers away from taxis.
- Minibus taxi services are not run on a schedule, making transferring on some routes extremely inconvenient. Taxis also do not have a predetermined time when operations begin in the morning or stop in the evening, leaving passengers stuck on ranks.
- Transferring on some routes can be inconvenient because minibus taxi services do not operate on a set schedule. Taxis also don't have a regular schedule for when they start in the morning or end in the evening, which can leave passengers stranded at ranks.

7.3 RECOMMENDATION

In South Africa, outdated data remains the foundation for planning public transportation. This has been discovered since regulatory agencies continue to issue operating licenses that do not correspond to the operation. The six selected local routes in Stellenbosch form the foundation of this study to determine the (in)flexibility of the operating licensing system. The development and improvement of the operating license system is stalled in the absence of a functioning data base. Global strategies for collecting real-time data have shown to be effective in the development of public transportation networks. The following suggestions are provided with the recommendation of improving the operating license system:

- The government need to establish, active database to maintain operations of public transportation.
- The creation of area base operations that are limited to a specific set of routes, allowing different authorities to be consolidated in the same way that Hong Kong did.
- Establish a procedure for tracking vehicle movement in order to inform the operating license system about the operations flexibility.
- By collecting accurate data will enable government to better design routes and establish entities that can provide a high-quality public transport system on routes that's not claimed by the taxi industry.
- Local governments can create route packages for short-distance public transportation operators, such as between the CBD and park-and-ride facilities, or between the CBD and locations that are close to town.
- The introduction of scheduled minibus taxi services on potentially subsidised routes
- Only minibus taxis with data-collection tracker systems should be awarded operating licenses, and if the system becomes ineffective, the license should be revoked.
- An integrated incremental approach to reform the operating license system with pilots on new routes and routes with low demand.

- Create a more flexible operating license system by include conditions that allow zonal or area operation during peak hours.

The current operating license system is inflexible as a result of the route-based criteria on the operating license; however, this will remain so until the government takes control of route design.

This study, which only examines a subset of routes, encourages more research on routes in areas such as Kayamandi, Franschhoek, and Klapmuts and could serve as a model for other regions in the Western Cape. The study also encourages further researching laws and policies that directly affect the operating licensing system in South Africa's as this would be helpful because legislation is so out-of-date. Particular attention should be paid to how operating licenses must be used and how they apply to specific types of operations, such as route-based operating licenses, which are appropriate in areas with adequate public transportation and area-based operating licenses, which can enhance service in areas with a need for public transportation. This will not only help planners and lawmakers, but it will also enhance the lives of those who use road-based public transportation and effectively advance government efforts to create an appealing road-based public transportation system for everyone.

8. BIBLIOGRAPHY

- Aboo, S. and Robertson, E. J. 2016. "Go George" (GIPTN) – a Quality Public Transport System, Elements for Consideration URI: <http://hdl.handle.net/2263/58005>
- Ahmed, Y. 2004. *Transformation of Public Transport operations from informal to formal services: An Examination of initiatives by the Western Cape Provincial Department of Transport to transform the minibus-taxi industry*. Proceedings of the 11th conference of CODATU.
- Ahmed, Y. 1999. *Public transport microenterprises formalization experiences in South Africa*. Africa transport technical note no 16, Sub-Saharan African transport policy program (SSATP), UNECA and The World Bank.
- Ashington, W. 2008. *THE WORLD BANK GROUP a Framework for Urban Transport Projects Operational Guidance for World Bank Staff*.
- Ardila, A. 2007. *How Public Transportation's Past Is Haunting Its Future In Bogotá, Colombia*. *Transportation Research Board*, vol 238.n0 1 pp.9-15, DOI: [10.3141/2038-02](https://doi.org/10.3141/2038-02)
- Ardila, A. 2005. *Study of urban public transport conditions in BOGOTÁ (Colombia) Draft Report*
- Ardila-Gómez, A. 2004. *Transit Planning in Curitiba and Bogotá. Roles in Interaction, Risk, and Change*. Massachusetts Institute of Technology. Department of Urban Studies and Planning
- Barolsky, J. 1990. *Follow that taxi. Success story of informal sector*. Wits Graduate School of Business. *Indicator South Africa vol 7. No 2 pp 59-63*.
- Barradas, S., 2014. A Re Yeng – Tshwane Rapid Transit system, South Africa. Engineering news [Electronic], 2nd May: <https://www.engineeringnews.co.za/article/a-re-yeng-tshwane-rapid-transit-system-south-africa-2014-05-02>
- Barrett, Jane. 2003. "SEED WORKING PAPER No. 39 Series on Representation and Organization Building Organizing in the Informal Economy: A Case Study of the Minibus Taxi Industry in South Africa InFocus Programme on Boosting Employment through Small Enterprise Development Job Creation and Enterprise Department International Labour Office · Geneva." *International Labour Office*,. www.ilo.org/publns.
<https://ideas.repec.org/p/ilo/ilowps/993581583402676.html>
- Bassier, A. 1989. *The impact of kombi-taxis on public transport*. The faculty of engineering and built environment department of civil engineering. University of Cape Town.
<http://hdl.handle.net/11427/8321>

- Behrens, R Schalekamp, H. 2011. Sensitivity testing of alternative public transport passenger satisfaction analysis techniques. *Southern African Transport Conference (30th: 2011: Pretoria, South Africa)*; Transportation Research Board of the National Academies (TRB); Minister of Transport, South Africa.
Available: <http://hdl.handle.net/2263/17374>
- Behrens, R, McCormick, D, and Mfinanga, D, (eds.), 2016. *Paratransit in African cities – Operations, regulation and reform*. Oxon: Routledge.
- Behrens, R, McCormick, D, Mfinanga, D. 2012. *An evaluation of policy approaches to upgrading and integrating paratransit in African urban public transport systems: results of the first round of a Delphi Survey*. 15th International CODATU Conference, Addis Ababa
- Behrens, R. 2019. *Overview of South African public transport policy and institutional arrangements. Lecture notes*. The Faculty of Engineering and the Built Environment Department of Civil Engineering. University of Cape Town.
- Bickford, G. (2016). *Transit oriented development in South African context: An analytical review of Johannesburg's recent urban policy and strategy*. The Faculty of Engineering and the Built Environment Department of Civil Engineering. University of Cape Town.
- Birungi, C. 2017. *The effects of feeder network operations on trunk-feeder network performance: A case study of Mitchells Plain Cape Town*. The Faculty of Engineering and the Built Environment Department of Civil Engineering. University of Cape Town.
- Browning P. 2013. *South African public transport: Keep the strategy – Review the action plan*, 32nd Southern African transport conference, Pretoria, South Africa
<http://hdl.handle.net/2263/33247>
- Browning P. 2017. *The Public Transport Strategy 2007: A Decade of Implementation*. 36th Southern African Transport Conference, Pretoria, South Africa
<http://hdl.handle.net/2263/62737>
- Browning, P. 2018. *Moving with the times: The minibus-taxi industry a submission to the competition commission South Africa public passenger transport market inquiry*.
- Browning, P. 1989. *Black Empowerment: Shaping South African Business for the 21st Century*
- Butcher, L., 2010 Buses: deregulation in the 1980's. *House of Commons Library Standard Note SN/BT,1534*.
- Cain A et al. (2006). *Applicability of Bogota's TransMilenio BRT system to the United States project No FL-26-7104-01, United States department of transportation, federal transit administration*.
https://rosap.ntl.bts.gov/view/dot/17854/dot_17854_DS1.pdf

- Cervero R., 2000. *Informal transport in the developing world. United nations centre for human settlements (Habitat) Nairobi.*
- Chaskalson, A., 1983. *The report of the Welgemoed Commission: some more criticism. Indicator South Africa, 1(3), pp.3-5.*
- Cirella G, Mtizi C, iyalomhe F. 2018. *Public transportation solutions in Southern Africa: Case study Zimbabwe and South Africa. Vol 79. pp 78-86.*
DOI: [10.26881/etil.2018.79.06](https://doi.org/10.26881/etil.2018.79.06)
- City of Cape Town. 2015. MyCiTi: Business Plan 2015 update
- City of Johannesburg. 2011. *Rea Vaya / BRT - Transforming the face of public transport – End of term.*
- Coetzee, J., Krogscheepers, C., Spotten, J. 2018. *Mapping minibus-taxi operations at a metropolitan scale- methodologies for unprecedented data collection using a smartphone application and data management techniques.* 37th Southern African Transport Conference, Pretoria, South Africa
<http://hdl.handle.net/2263/69589>
- Competition Commission's. 2019. *Advice on franchised taxi services proposal.*
- Competition Commission South Africa. 2021. "Market Inquiry into the Land Based Public Passenger Transport Sector Main Report Non-Confidential." www.compcom.co.za/publicpassenger-transport-market-inquiry/.
- Department of Transport (NDoT). 1996. *White Paper on National Transport Policy.* South African Department of Transport. Pretoria.
- Department of Transport (NDoT). 2000. *National Land Transport Transition Act (NLTTA).* South African Department of Transport. Pretoria.
- Department of Transport (NDoT). 2007. *Public Transport Strategy,* South African Department of Transport. Pretoria.
- Department of Transport (NDoT). 2009. *National Land Transport Act 5 of 2009 (NLTA).* Pretoria.
- Department of Transport. 2007. *Public transport action plan: Phase 1 (2007-2010): Catalytic integrated rapid public transport network projects.* South African department of transport, Pretoria.
- Department of Transport Western Cape. 2010. *Strategic directive: Provincial strategic objective: Moving the Western Cape forward-increasing access to safe and efficient transport.*

- Gwilliam K.M. 2002. *Public passenger transport: Cities on the move: A world bank urban transport strategy review. world bank.*
- Division 44 Environment and Infrastructure Sector Project. (2004): *Transport Policy Advice Sustainable Transport: A Sourcebook for Policymakers in Developing Cities Module 3c Bus Regulation and Planning-revised.*
- du preez, Jacobus F. (2018). *The Integration of informal minibus-taxi transport services into formal public transport planning and operations -A data driven approach.* The faculty of engineering and the built environment department of civil engineering. University of Cape Town.
- Enoch, M. and Potter, S. (2016). *Paratransit: The Need for a Regulatory Revolution in the Light of Institutional Inertia.* In *Paratransit: Shaping the Flexible Transport Future.* Emerald Group Publishing Limited.
- Enslin, C. (2016). *Mapping the Spaces In-between: How ICT can assist in providing a safer and more efficient commuter experience for all.* The Faculty of Engineering and the Built Environment School of Architecture, Planning and Geo-matics
- Evans, R. and Cook, G. (1985). *The case for combi-taxis. Regional Topic Paper: 85/3. Cape Western Region: South African Institute of Race Relations.*
- Faber, C., 1995. *Privatisation and deregulation of public transport in Britain.* The economic background and effects. Vienna University of economics and business administration.
- Ferreira, M.A. (1992). *The implications of deregulation on the combi-taxi industry. Report no. RR 91/143.Pretoria: division of Roads and Transport Technology, CSIR.*
- Figuroa, O. and Rodríguez C. (2013). *Urban Transport, Urban Expansion and Institutions and Governance in Santiago, Chile Case Study Prepared for Global Report on Human Settlements.*
- Fobosi, S.C. (2019). *Regulated Set against Unregulated Minibus Taxi Industry in Johannesburg, South Africa—A Contested Terrain: Precariousness in the Making.* World Journal of Social Science Research Vol. 6, No. 3.
DOI: <https://doi.org/10.22158/wjssr.v6n3p303>
- Fourie, L.J. (2003). *Rethinking the formalisation of the minibus-taxi industry South Africa.* University of Pretoria.
- Fourth Generation Integrated Development Plan IDP 2017 – 2021 Fourth Review Stellenbosch March 2021.

- Gaibe, H. (2009). *An investigation into the methodology of minibus Taxi data collection as part of the current public transport. The Faculty of Engineering and the Built Environment Department of Civil Engineering. Centre for Transport Studies University of Cape Town.*
- Gilbert, A. 2008. Bus rapid transit: *Is Transmilenio a miracle cure?* *Transport Reviews*, 28(4), pp.439-467.
- Golub, A.; Behrens, R; Salazar Ferro, P.: 2012. *Planned and Paratransit Service Integration through Trunk and Feeder Arrangements: An International Review.* 31st Southern African Transport Conference, Pretoria, South Africa
<http://hdl.handle.net/2263/20419>
- Gómez-Ibáñez, José A., and John R. Meyer. 1997. "Alternatives for Urban Bus Services: An International Perspective on the British Reforms." *Transport Reviews*, vol. 17, no. 1, pp. 17–29, <https://doi.org/10.1080/01441649708716966>.
- Gomez-Ibanez, J. and Meyer, J.R., 2011. *Going private: The international experience with transport privatization.* Brookings Institution Press.
- Gómez-Lobo, A. 2012. The ups and downs of a public transport reform: The case of Transantiago. *Working Paper Series SDT354, University of Chile, Department of Economy, Santiago, Chile.*
- Gschwender, Antonio. 2005. *9th Conference on Competition and Ownership in Land Transport In Developing Countries: The Design of a New Integrated System in Santiago Chile.*
- Gwilliam, K, and Scurfield R. 1996. *Environmentally Sustainable Development TWU-24 Constructing a Competitive Environment in Public Road Passenger Transport.* World Bank.
- Gwilliam, K., 2008. Bus transport: Is there a regulatory cycle. *Transportation Research Part A: Policy and Practice*, 42(9), pp.1183-1194.
- Hau, T., (1997). *Transport for urban development in Hong Kong. In Transport and Communications for Urban Development: Report of the HABITAT II Global Workshop. Nairobi, Kenya: The United Nations Centre for Human Settlements (HABITAT) (pp. 267-289).*
- Hidalgo, D., and Carrigan A., 2010. *Modernizing Public Transportation.* Lessons learned from major bus improvements in Latin America and Asia. EMBARQ The WRI Centre for Sustainable Transport, Washington, DC.
- Hidalgo, D. and Carrigan, A. 2010. *BRT in Latin America High Capacity and Performance, Rapid Implementation and Low Cost. Built Environment*, 36(3), pp.283-297
- Hong Kong Transport and Housing Bureau. 2017. *Public Transport Strategy Study Final Report.*
- Hong Kong Transport. 2021. The Facts, Journal article. GovHK, www.td.gov.hk

- Jeftas, D. 2002. *Regulation, conflict and violence in South African minibus-taxi industry: observations from Western Cape*. The Faculty of Engineering and the Built Environment Department of Civil Engineering. University of Cape Town.
- Jennings, G., and Behrens, R. 2017. *The Case for Investing in Paratransit: Strategies for Regulation and Reform*. Volvo Research and Education Foundations.
- Kenedy, C. et al. 2005. *The four pillars of sustainable urban transportation*. Transport Reviews, Vol.25, No. 4. Pp 393-414.
- Kerr, A. 2018. Minibus Taxis, Public Transport, and the Poor. World Bank Washington, DC. World Bank. <https://openknowledge.worldbank.org/handle/10986/30018> License: CC BY 3.0 IGO <http://hdl.handle.net/10986/30018>
- Kgwedi, R. and Krygsman S. 2017. *Minibus-taxis as providers of scheduled, park & ride service: A concept for Stellenbosch*. p. 362.
- Khosa, M., 1992. *Routes, Ranks and Rebels: Feuding in the Taxi Revolution*. *Journal of Southern African Studies*. Vol 18. No 1. pp 232-51. <https://doi.org/10.1080/03057079208708312>.
- Klopp, J.M., Harber, J. and Quarshie, M., 2019. *A review of BRT as public transport reform in African cities*. VREF Research Synthesis Project Governance of Metropolitan Transport.
- Kokernot, D., 1984. *The Kombi Taxi an Alternative Mode of Transport*. The Faculty of Engineering and the Built Environment Department of Civil Engineering. University of Cape Town.
- Langridge, R., and Sealey R., 2000. "Contestability in the UK Bus Industry? The National Bus Company, and the 'Tilling Mark II' Effect." *Transport Policy*, vol. 7, no. 2., pp. 105–15, [https://doi.org/10.1016/s0967-070x\(99\)00027-x](https://doi.org/10.1016/s0967-070x(99)00027-x).
- Legislative Council Panel on Transport Policy on Public Light Buses*. 2000. Transport Bureau of Hong Kong. <http://www.legco.gov.hk/yr00-01/english/panels/tp/papers/a307e03.pdf>
- Lizana, P., et al. 2014. "Bus Control Strategy Application: Case Study of Santiago Transit System." *Procedia Computer Science*, vol. 32, pp. 397–404, <https://doi.org/10.1016/j.procs.2014.05.440>.
- Lo, Hong K., et al. 2008. "Managing the Accessibility on Mass Public Transit: The Case of Hong Kong." *Journal of Transport and Land Use*, vol. 1, no. 2. <https://doi.org/10.5198/jtlu.v1i2.85>.
- Luyckx L M. Skinner D G. Vermeulen M J., 1992. Privatizing and deregulation in passenger transportation: The South African experience with special reference to competitive tendering. International conference series on competition and ownership in land passenger transport. Tampere, Finland. Thredbo2. <https://ses.library.usyd.edu.au/handle/2123/12186>

- Mackintosh, Bergh & Sturgess. 1973. Stellenbosch "Verkeerstudie" Cape Town.
https://journals.co.za/doi/pdf/10.10520/AJA10212019_16536
- Macauley, M, and Quinton R., 2017. "To the Editor": *Menopause*, vol. 24, no. 2. p. 232,
<https://doi.org/10.1097/gme.0000000000000827>.
- MacMahon, B., 2017. *Conversion of permits to Operating licenses, Presentation to small bus operators, Western Cape Government.*
- Manuel, M., 2019. *Case study analysis of Integrated Public Transport Networks in five South African cities.* The Faculty of Engineering and the Built Environment Department of Civil Engineering. University of Cape Town.
- McCaul, C., 1990. *No Easy Ride: the rise and future of the Black Taxi Industry.* Johannesburg: South African Institute of Race Relations.
- Mhlanga, L S., 2017. *An assessment of the regulatory arrangement in the minibus taxi industry in South Africa: a primer for self-regulation.* 36th South African Transport Conference. Pretoria, South Africa. <http://hdl.handle.net/10204/9722>
- Miller, D., 1990. *Deregulation in practice in SA: two case studies. Paper prepared for ASSA. National Conference in Stellenbosch 1-4 July.*
- Mo, Daniel Y., et al. 2020. "Design of Flexible Vehicle Scheduling Systems for Sustainable Paratransit Services." *Sustainability*, vol. 12, no. 14, p. 5594, <https://doi.org/10.3390/su12145594>.
- Muñoz, J.C. and de Grange, L., 2010. "On the Development of Public Transit in Large Cities." *Research in Transportation Economics*, vol. 29, no. 1, Jan. 2010, pp. 379–86, <https://doi.org/10.1016/j.retrec.2010.07.048>.
- Muñoz, J.C. and Gschwender, A., 2008. "Transantiago: A Tale of Two Cities." *Research in Transportation Economics*, vol. 22, no. 1. pp. 45–53, <https://doi.org/10.1016/j.retrec.2008.05.010>.
- Muñoz, J.C. and Molina, D., 2009. "A Multi-Unit Tender Award Process: The Case of Transantiago." *European Journal of Operational Research*, vol. 197, no. 1. pp. 307–11, <https://doi.org/10.1016/j.ejor.2008.06.025>.
- Moyake, M.S., 2006. *A critical analysis of the process of taxi recapitalisation policy.* North-West University.
- National Parliament., 2017. *Rea Vaya Bus Rapid Transit System City of Johannesburg: Performance, Progress, Future.*
https://pmg.org.za/files/1/170912_COJ.pdf

- National Planning Commission, 2011. *National Development Plan 2030 - Our Future-make it Work*.
- Naude, L. 1999. *An Evaluation of the Impact of the South African Public Transport Policy on the Restructuring of the Commuter Bus Industry*. Unpublished doctoral thesis. Johannesburg: University of Johannesburg.
<https://ujcontent.uj.ac.za/vital/access/services/Download/uj:10157/CONTENT1>
- Ngubane, L.P., (2016). *“From political wars to taxi wars”: investigating the transition of taxi violence in a low-income urban community in the Mpumalanga Township, South Africa*
 University of Kwazulu-Natal.
- Nkambule, E. and Govender, K., 2014. *“Exploring the Minibus Taxi as a Means to Improving Public Transportation in South Africa.” Regenesys Business School: Johannesburg, South Africa. GLOBAL JOURNAL of INTERDISCIPLINARY SOCIAL SERVICES, vol. 3, no. 3, June 2014, pp. 185–89, www.gifre.org.*
- Nkete, P.P., 2015. *Operating in a Man’s World: The Perceptions and Experiences of Female Taxi Drivers in Rustenburg, South Africa*. University of Johannesburg (South Africa).
- Noble, A.W. 2014. *The Effectiveness of local Government regulation of the Taxi Trade*. Birmingham Law School, University of Birmingham.
- Oni, O., 2018. *Evaluation of when road space prioritisation/infrastructural improvements for paratransit vehicles is warranted: A case study of Mitchells Plain, Cape Town. The Department of Civil Engineering at the University of Cape Town.*
- O’Ryan R, Sperling D, Delucchi M , Turrentine T, 2002. *Transportation in Developing Countries, Greenhouse Gas scenarios for Chile. Pew Centre on global Climate Change Arlington.*
- City of Cape Town. 2010. *Phase 1A of Cape Town’s MyCiTi Integrated Rapid Transit system, Business plan.*
- Pillay K and Seedat I, 2007. *Towards 2020: Public transport strategy and action plan, 26th South African Transport Conference, Pretoria.*
- Plano, C. 2020. *Towards evening paratransit services to complement scheduled public transport in Cape Town: Exploring alternative policy interventions from the minibus-taxi industry's perspective. The Department of Civil Engineering at the University of Cape Town.*
- Preston, J. and Almutairi, T., 2013. *Evaluating the long term impacts of transport policy: An initial assessment of bus deregulation. Research in transportation economics, 39(1), pp.208-214. https://doi.org/10.1016/j.retrec.2012.06.015.*
- Provincial Vision for Public Transport and Five-Year Strategic Delivery Programme*. 2002. Provincial administration of the Western Cape department of transport and public works contents.

- Rapp, U. 1993. *Entry deregulation in Cape Town's Black Combi Taxi Industry: Some Theoretical Considerations and a Case study at the Mowbray Rank*. Stockholm school of economics, Sweden.
- Rayle L., 2017. *Bus Rapid Transit as Formalization: Accessibility impacts of transport reform in Cape Town, South Africa*. *Escholarship.org*, escholarship.org/uc/item/5vx1368b.
- Report of Transport Advisory Committee Working Group., 2004. Review of Regulation of Non-Franchised Bus Operation.*
https://www.thb.gov.hk/eng/boards/transport/land/archive/NFB%20Review%20Report%20Eng_PDF.pdf
- Roebuck, C.S. and M. Simmer., 2000. *Action in Public Transport: What the Passenger Want*. South African Transport Conference.
- Road Transportation Act no.74 of 1977.
- Salazar P, Behrens R, Golub A., 2012. *Planned and Paratransit Service Integration Through Trunk and Feeder Arrangements: An International Review*. South African Transport Conference.
- Sauti, G., 2006. *Minibus taxi drivers are they all' children born from the same mother?' School of Sciences. University of the Witwatersrand.*
- Savage, Ian., 1993. "Deregulation and Privatization of Britain's Local Bus Industry." *Journal of Regulatory Economics*, vol. 5, no. 2. pp. 143–58, <https://doi.org/10.1007/bf01065363>.
- Schalekamp, H., 2017. Lessons from building paratransit operators' capacity to be partners in Cape Town's public transport reform process. *Transportation Research Part A: Policy and Practice*, 104, pp.58-66.
- Schalekamp H., 2019. *African paratransit service quality improvement experiences, class notes, University of Cape Town.*
- Schalekamp H., 2019. *Alternative approaches to paratransit reform, Class Notes University of Cape Town.*
- Schalekamp H, Behrens R, Wilkins P. 2010. *Regulating Minibus Taxis: A critical review of Progress and a possible way forward*. South African Transport Conference.
- Schalekamp, H., and Klopp, J., 2018 *Beyond BRT: Innovation in Minibus-taxi reform in South African Cities*. 37th Southern African Transport Conference, Pretoria, South Africa
<http://hdl.handle.net/2263/69575>

- Schalekamp, H. 2015. *Paratransit operator's participation in public transport reform in Cape Town: A qualitative investigation of their business aspirations and attitudes to reform*, University of Cape Town.
- Secretariat, L. C., Research Office., 2019. *Measures to enhance the competitiveness of the taxi industry*. IN16/18-19. <https://www.legco.gov.hk/research-publications/english/1819in16-measures-to-enhance-the-competitiveness-of-the-taxi-industry-20190620-e.pdf>
- Sehnbruch, K., 2007. *The Sorcerer's Apprentice*. Berkeley review of Latin America studies.
- Imaniranzi, E., 2015. *The response of other drivers to minibus taxi drivers' on-road aggressive behaviour: a case study in Cape Town, South Africa* (Stellenbosch University).
- Smith, D. M. (2003). *The Apartheid City and Beyond Urbanization and social changes in South Africa*. Routledge.
- South Africa Ministry of Transport., 1996. National Taxi Task Team. Final Recommendations.
- Stanway, R.A. (2001). *Possible impacts of the National Land Transport Transition Act on the South African urban poor*. South African transport Conference.
- Stojic, Dragan, et al., 2020. "Students' Views on Public Transport: Satisfaction and Emission." *Sustainability*, vol. 12, no. 20. p. 8470, <https://doi.org/10.3390/su12208470>.
- Tager, L., (1988). *Deregulation in The South African Context: The Dismantling of Socio-Economic Apartheid*. Trust Bank.
- Department of Transport (UK). 2010. *TAXI and PRIVATE HIRE VEHICLE LICENSING: BEST PRACTICE. Guidance to assist local licensing authorities in carrying out their taxi and private hire vehicle licensing functions*.
- Transport Department. 2007. "Taxi Service: Competition and Regulation." *Competition Law & Policy OECD*. <https://www.oecd.org/daf/competition/41472612.pdf>
- van de Velde, D, and Wallis, I., 2013. "'Regulated Deregulation' of Local Bus Services—an Appraisal of International Developments." *Research in Transportation Economics*, vol. 39, no. 1. pp. 21–33, <https://doi.org/10.1016/j.retrec.2012.05.020>.
- Vegter, Ivo., 2020. *South Africa's Minibus taxi Industry. Resistance to Formalisation and Innovation*. South African Institute of Race Relations.
- Velaga, Nagendra R, et al. 2012. *The Potential Role of Flexible Transport Services in Enhancing Rural Public Transport Provision*. *Journal of public transportation*, 15 (1): 111-131 <http://doi.org/10.5038/2375-0901.15.1.7>

- Velaga, Nagendra R., et al. 2012. "Development of an Integrated Flexible Transport Systems Platform for Rural Areas Using Argumentation Theory." *Research in Transportation Business & Management*, vol. 3, pp. 62–70, <https://doi.org/10.1016/j.rtbm.2012.05.001>.
- Venter C. 2009. *Some Lessons from Lagos. Civil Engineering. p.25.*
- White, P. 2006. "Competition in Public Transport in Great Britain." *European Transport*, vol. 33. pp. 69–82.
- White, P. 2010. "The Conflict between Competition Policy and the Wider Role of the Local Bus Industry in Britain." *Research in Transportation Economics*, vol. 29, no. 1. pp. 152–58, <https://doi.org/10.1016/j.retrec.2010.07.020>.
- White, P, and Farrington, J. 1998. "Bus and Coach Deregulation and Privatization in Great Britain, with Particular Reference to Scotland." *Journal of Transport Geography*, vol. 6, no. 2, pp. 135–41, [https://doi.org/10.1016/s0966-6923\(98\)00006-4](https://doi.org/10.1016/s0966-6923(98)00006-4).
- Wilkinson, P., (2008). '*Formalising' paratransit operations in African cities: constructing a research agenda. South African Transport Conference.*
- Wilkinson, Peter. 2010. "The Regulatory Cycle Stalled? An Assessment of Current Institutional Obstacles to Regulatory Reform in the Provision of Road-Based Public Transport in Cape Town, South Africa." *Research in Transportation Economics*, vol. 29, no. 1. pp. 387–94, <https://doi.org/10.1016/j.retrec.2010.07.049>.
- William G, 2002. *Cities on the move: A World bank urban transport strategy review.* The World Bank.
- Woolf, S., and J. Joubert. 2013. "A People-Centered View on Paratransit in South Africa." *Cities*, Volume 35, pp. 284-293, <https://doi.org/10.1016/j.cities.2013.04.005>. *ResearchGate.*
- Zimmerman, I. 1988. *An Economic Investigation into the deregulation of road passenger transportation in South Africa with special reference to the Black Taxi Industry. The Department of Civil Engineering at the University of Cape Town.*

Appendix A : SUMMARY OF ALL ROUTES DESCRIPTIONS & MAPS

Route Name	Stellenbosch - Idasvalley
Route Numbers Affected	630, 631, 632, 633, 634, 635
Old Route Description	<p>630: From Taxi rank at Blom Street (inside) Stellenbosch, left in Bird Street, right in Merriman Avenue, left in Cluver Road to traffic light to Idasvalley residential area and back as follows: straight into Cluver Street, straight into Marais Street, right into Victoria Street to business district Stellenbosch and surrounding residential areas namely Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial area and Devonalley Industrial area subject to the following conditions: 1. Passengers may only be picked up in the town center from Blomstraat (inside) Taxi Parking space with the exception of passengers at Stellenbosch Hospital in Merriman Avenue and passengers from Stellenbosch Railway Station; 2. Passengers must be picked up at agreed parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>631: From Taxi rank at Blom Street (inside) Stellenbosch, left in Bird Street, right in Jan Cilliers Street, right in Helshoogte Road to traffic light, left in Idasvalley residential area and back as follows: right in Helshoogte Road, left in Hammanshand to the Stellenbosch business district the following conditions: 1. Passengers may only be picked up in the town center from Blom Street (inside) Taxi rank with the exception of passengers at Stellenbosch Hospital in Merriman Avenue and passengers from Stellenbosch Railway Station; 2. Passengers must be picked up at agreed parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>632: From Taxi rank at Blom Street (inside) Stellenbosch, left in Bird Street, right in Jan Cilliers Street, right in Helshoogte Road to traffic light, left in Idasvalley residential area and back as follows: right in Helshoogte Road to junction of R44, left to central business district and surrounding residential areas Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plankenburg Industrial Area and Devon Valley Industrial Area subject to the following conditions: 1. Passengers may only be picked up in the town center from Blom Street (inside) Taxi rank with the exception of passengers at Stellenbosch Hospital in Merriman Avenue and passengers from Stellenbosch Railway Station; 2. Passengers must be picked up at allotted parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>633: From Taxi rank at Blom Street (inside) Stellenbosch, left in Bird Street, right in Merriman Avenue, left in Cluver Road to traffic light to Idasvalley residential area and back as follows: straight into Cluver Road, right in Banhoek Road to business district Stellenbosch subject</p>

	<p>to the following conditions : 1. Passengers may only be picked up in the town center from Blom Street (inside) Taxi rank with the exception of passengers at Stellenbosch Hospital in Merriman Avenue and passengers from Stellenbosch Railway Station; 2. Passengers must be picked up at agreed parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>634: From Taxi rank at Blom Street (inside) Stellenbosch, left into Bird Street, right into Merriman Avenue, left into Cluver Road to traffic light to Idasvalley residential area and back as follows: straight into Cluver Road, straight into Marais Street, right into Van Riebeeck Street, to business district Stellenbosch subject to the following conditions: 1. Passengers may only be picked up in the town center from Blom Street (inside) Taxi rank with the exception of passengers at Stellenbosch Hospital in Merriman Avenue and passengers from Stellenbosch Railway Station; 2. Passengers must be picked up at agreed parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>635: From Taxi rank at Blom Street (inside) Stellenbosch, left in Bird Street, right in Merriman Avenue, left in Cluver Road to traffic light to Idasvalley residential area and back as follows: straight into Cluver Road, around traffic circle, left in Merriman Avenue, to business district Stellenbosch subject to the following conditions: 1. Passengers may only be picked up in the town center from Blom Street (inside) Taxi rank with the exception of passengers at Stellenbosch Hospital in Merriman Avenue and passengers from Stellenbosch Railway Station; 2. Passengers must be picked up at agreed parking spaces at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p>
<p>Route Description as per on board data collected</p>	<p>From Taxi rank at Bergzicht Stellenbosch, left in Bird Street, right in Merriman Avenue, left at circle into Cluver Road to traffic light to Idasvalley residential area and back as follows: from Idasvalley residential area into Cluver Street, right into Merriman Avenue, until Bergzicht Taxi rank</p>

TABLE 10: COMPARISON OF ROUTE DESCRIPTION ON IDASVALLEY ROUTE

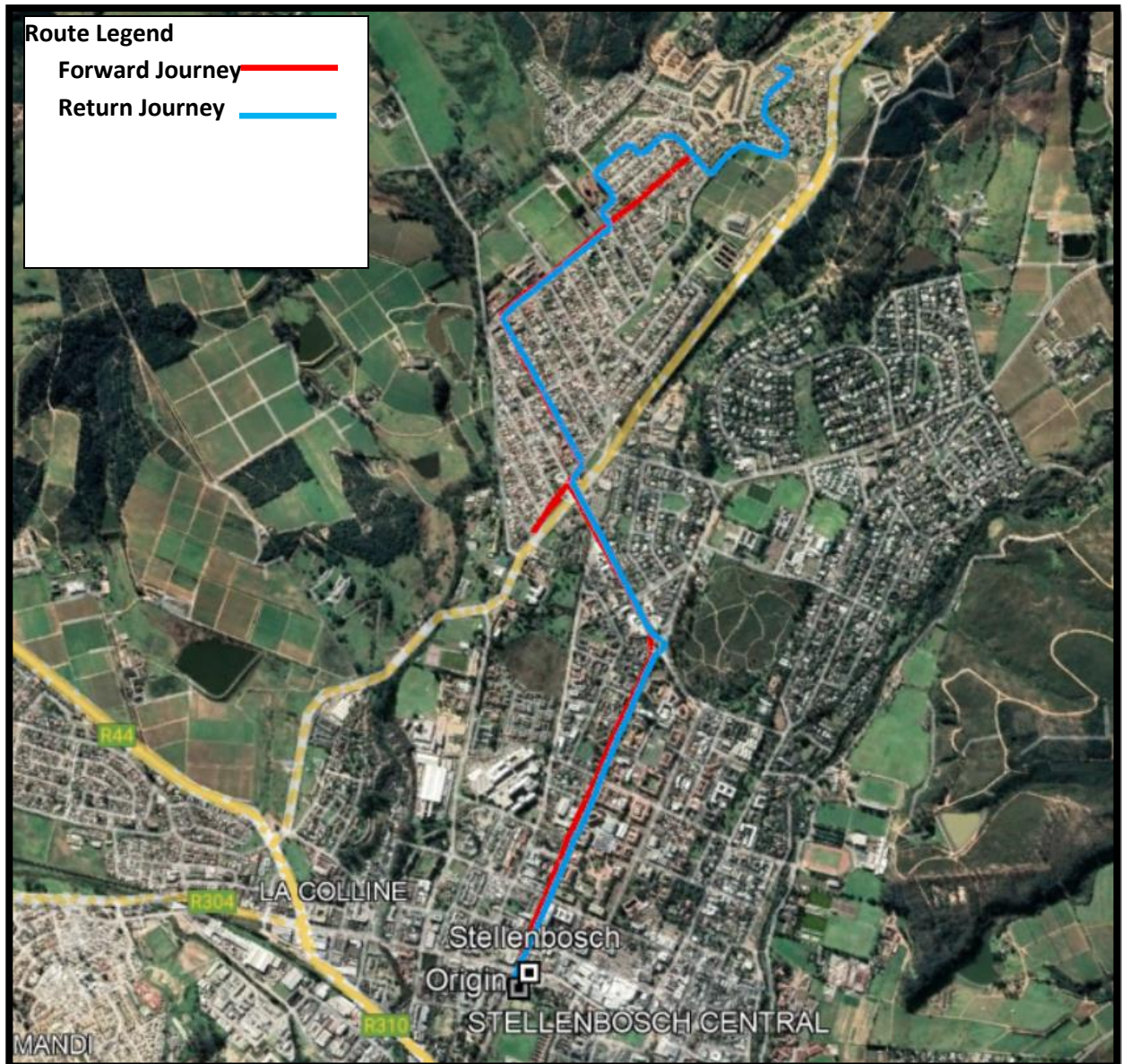


FIGURE 10: THE FORWARD AND RETURN JOURNEY ON IDASVALLEY ROUTE

The Idasvalley route is a direct route and short route and a round trip is about 9km which take about 15 to 20 minutes depending on the amount of people disembarking and embarking along the route. Information such as boarding and alighting were not recorded and neither route utilisation. The operating license have six route authorities (630; 631; 632; 633; 634; 635) with the same origin and destination. The route also changes from time to time during the morning peak trips starts in the residential area and goes directly to the industrial area and dropping points in the CBD normally closest to places of employment and not the rank. During the afternoon peak all trips heading back originates from the rank and drop passengers along the route until within the residential area.

Route Name	Stellenbosch - Jamestown
Route Numbers Affected	670,671
Old Route Description	<p>670 : From Taxi rank at Blom Street (outside) Stellenbosch, left in Alexander Street, left in R44, left in Paradyskloof Road and back, left in R44, left in Webervallei Road Jamestown and back as follows: right in R44, right in Alexander Street, right to Blom Street (outside) Taxi rank Stellenbosch and surrounding residential areas namely Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial area and Devonvalley Industrial area, subject to the following conditions: 1. Passengers may only be loaded at Blomstraat (outside) taxi rank and Stellenbosch Railway Station; 2. Passengers must be picked up at allocated taxi pick up points at Blom Street (outside) at all times, except the times between 19:00 and 09:00 provided it is a legal parking space; 3. Passengers can be picked up on the route between Jamestown and “Die Boord” with the return journey.</p> <p>671: From Taxi rank at Blom Street (outside) Stellenbosch, right in Mark Street, right in Dorp Street, left in R44, left in Webervallei Road Jamestown and back as follows: right in R44, right in Dorp Street, left in Mark Street, to Blom Street (outside) Taxi rank Stellenbosch and surrounding residential areas namely Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial area and Devonnale Industrial area subject to the following conditions: 1. Passengers may only at Blomstrat (outside) Taxi Stand and Stellenbosch Railway Station are uploaded; 2. Passengers must be picked up at allocated Taxi rank at Blom Street (outside) at all times, except the times between 19:00 and 09:00 provided it is a legal parking space; 3. Passengers can be picked up on the route between Jamestown and “Die Boord” with the return journey.</p>
Route Description as per on board data collected	<p>From Bergzicht Taxi rank Stellenbosch, left in Merriman avenue, left into Pappegaai street, right into Dorp Street, left into R44, left in Webervallei Road Jamestown and back as follows: right in R44, right in Dorp Street, left in Mark Street, left in Skone Uitsig, right in Alexander street, left in Bird street, left in Merriman and Left into Bergzicht taxi rank.</p>

TABLE 11: COMPARISON OF ROUTE DESCRIPTION ON JAMESTOWN ROUTE

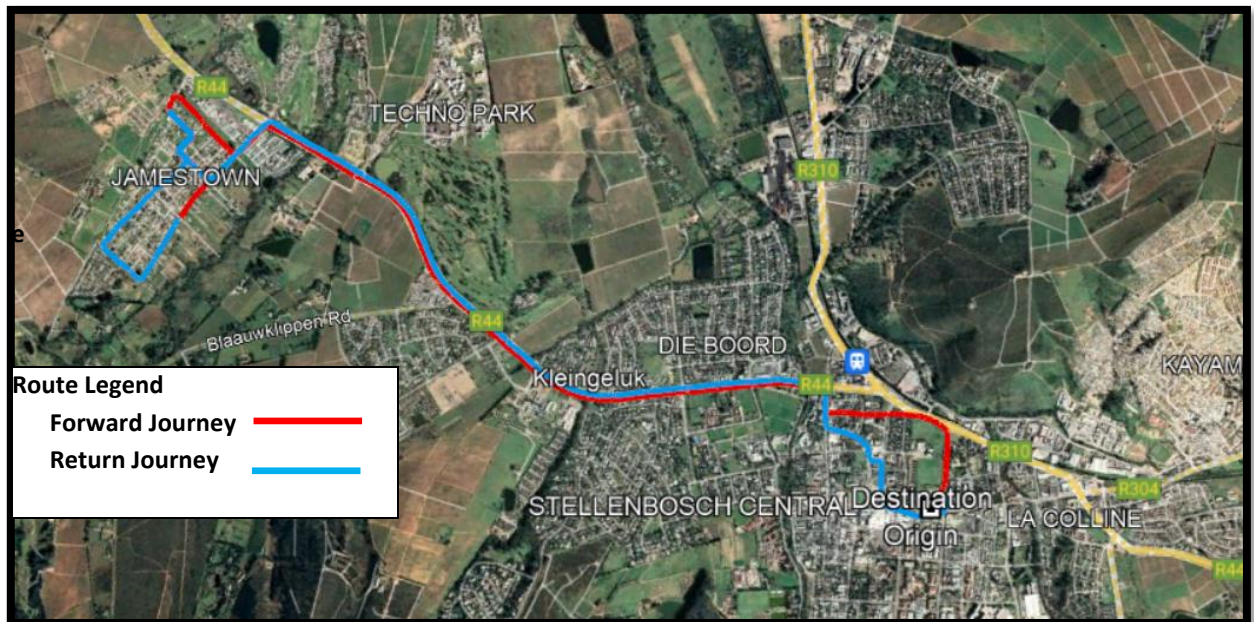


FIGURE 11: THE FORWARD AND RETURN JOURNEY ON JAMESTOWN ROUTE

The Jamestown route heads to the southern side of Stellenbosch and a round trip is about 15km which take about 25 to 30 minutes depending on the amount of people disembarking and embarking along the route. Information such as boarding, and alighting were not recorded and neither route utilisation. The operating license have two route authorities (670;671) with the same origin and destination the authorities is to allow the area to be access on two different roads. The route operates from residential area during the morning peak and trips go directly to rank but allow disembarking along the route in the CBD until the rank is reached. During the afternoon peak all trips heading back originates from the rank and will drop passengers along the route until the residential area.

Route Name	Stellenbosch - Kylemore/ Pniel
Route Numbers Affected	667, 668
Old Route Description	<p>667: From Taxi rank at Blom Street (outside) Stellenbosch, right in Alexander Street, left in Bird Street, right in Merriman Avenue, left in Cluver Road, right in New Helshoogte Road to Die Werf in Pniel and back to the business district and surrounding residential areas excluding Cloetesville, Idas Valley and Kayamandi subject to the following conditions: 1. No passengers may be picked up with the outbound lane before Simonsberg Road junction and with the return journey before Simonsberg Street junction and with the return journey to Simonsberg Road junction, with the exception that passengers at Stellenbosch Hospital who travel to Pniel may be picked up ; 2. Pension days the passengers in Khaler Street Idas Valley may be dropped off at the NG Church Center.</p> <p>668: From Taxi rank at Blom Street Stellenbosch, right in Alexander Street, left in Bird Street, right in Merriman Avenue, left in Cluver Road, right in New Helshoogte Road, to turn right into Kylemore residential area and back to Stellenbosch business district and surrounding residential areas namely Paradyskloof, Onder Papagaaiberg, The Orchard, Dalsig, Krigeville, Karindal, Union Park, Simonswyk, Plakenburg Industrial Area and Devonalle Industrial Area, excluding Cloetesville, Idas Valley and Kayamandi subject to the following conditions: to Simonsberg Street, with the exception that passengers at Stellenbosch Hospital who travel to Kylemore may be picked up; 2. Pension days the passengers in Khaler Street Idas Valley may be dropped off at the NG Church Center; 3. Passengers must be picked up at Blom Street (outside) taxi rank at all times; 4. Passengers may be picked up at Stellenbosch Railway Station; 5. Passengers must be picked up at the allocated parking space at all times, except for the times between 19:00 and 09:00, provided that it is a legal parking space.</p>
Route Description as per on board data collected	From Taxi rank at Bergzicht Stellenbosch, left in Bird Street, right in Merriman Avenue, left at circle into Cluver Road, right in New Helshoogte road, to turn right into Kylemore residential area from Kylmore Right Into New Helshoogte to "Die Werf" Pniel and back to Stellenbosch left into Hammanshand road Street, left into Ryneveld street right into Merriman Avenue, until Bergzicht Taxi rank

TABLE 12: COMPARISON OF ROUTE DESCRIPTION ON KYLEMORE ROUTE

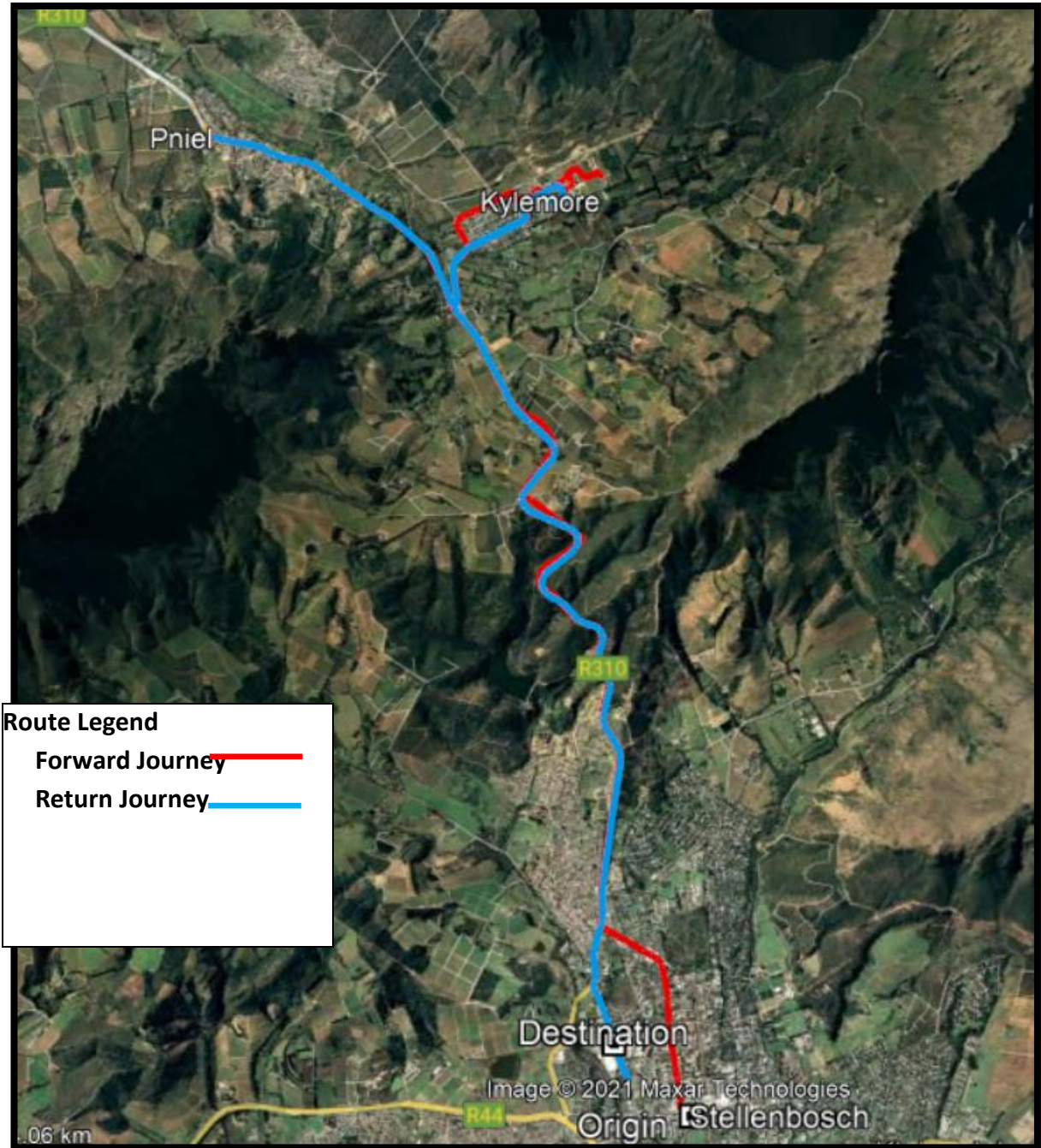


FIGURE 12: THE FORWARD AND RETURN JOURNEY ON PNIEL/KYLEMORE

The Pniel/Kylemore route is a longer route as it heads up the Helshoogte road to the eastern side of Stellenbosch. A round trip is about 24km and takes about 30 to 45 minutes depending on the amount of people disembarking and embarking along the route. No other additional information was recorded only the trip. The operating license have two route authorities (667;668) with one authority being for Kylemore and the other for Pniel. Both settlements are established along the Helshoogte. Morning

Operations start either in the areas or along the route and go directly to rank but allow disembarking along the route in the CBD. During the afternoon peak all trips heading back originates from the rank and will drop passengers along the route including the residential areas.

Route Name	Stellenbosch-Elsenburg
Route Numbers Affected	673,674
Old Route Description	<p>673: From Taxi Rank at Stelmark Stellenbosch, left into Banhoek Road, left into Andringa Street, left into Muller Street, right into Rev. Bothas Street, left in Jan Cillier Street, right in Bird Street, right in R44, right in Knorhoek Road to Delheim and back to R44, left in Elsenburg Road to Kromme Rhee Elsenburg and back as follows: in R44 left at traffic light, Long Street South and R44 on Main road 5 to Idasvallei, left at traffic light in Rustenburg Road, right Sonneblom Street, left in Protea Street, left in Rustenburg Road to traffic light at Rustenburg Road and Helshoogte Road, right in Helshoogte Road, left Hammanshand Road to Bird Street and left in Bird Street to the Stellenbosch business district following conditions: 1. No passengers may be picked up within the Municipal area of Stellenbosch with the incoming ride; 2. Passengers may only be picked up from Stelmark Taxi rank; 3. Passengers must be picked up at the allocated parking space at all times, except for the times between 19:00 and 09:00 provided that it is a legal parking space.</p> <p>674: From Taxi rank at Stelmark Stellenbosch, left into Banhoek Road, left into Andringa Street, left into Muller Street, right into Rev. Bothas Street, left in Jan Cillier Street, right in Bird Street, right in R44, right in Knorhoek Road to Delheim and back to R44, left in Elsenburg Road to Kromme Rhee Elsenburg and back as follows: in R44, left in Muldersvlei Road, right to Vaaldraai and back to Muldersvlei Road, to Wiesenhof and back with R44, right Cloetevilles, right in Hendrickse street, left in February Street, right Lang Street to Essenhout Street, turn around and move back in Langstraat join Lang Street South, right in Tennant Street, right in Bell Street, left in Bird Street to the central business district of Stellenbosch subject to the following conditions: 1. Passengers must be picked up at Stelmark taxi rank at all times; 2. Passengers may be picked up at Du Toit Station and taken to Elsenburg.</p>
Route Description as per on board data collected	From Taxi rank at Bergzicht Stellenbosch, right in Merriman left in Bird Street, right at R44, left in Elsenburg Road till turn around point left into Elsenburg area, right into Elsenburg road, left into R44, to Wiesenhof and back with R44, left in Knorhoek Road to Delheim and back to R44, left in R44 and left into Merriman till Bergzicht Taxi rank.

TABLE 13: COMPARISON OF ROUTE DESCRIPTION ON ELSENBURG ROUTE

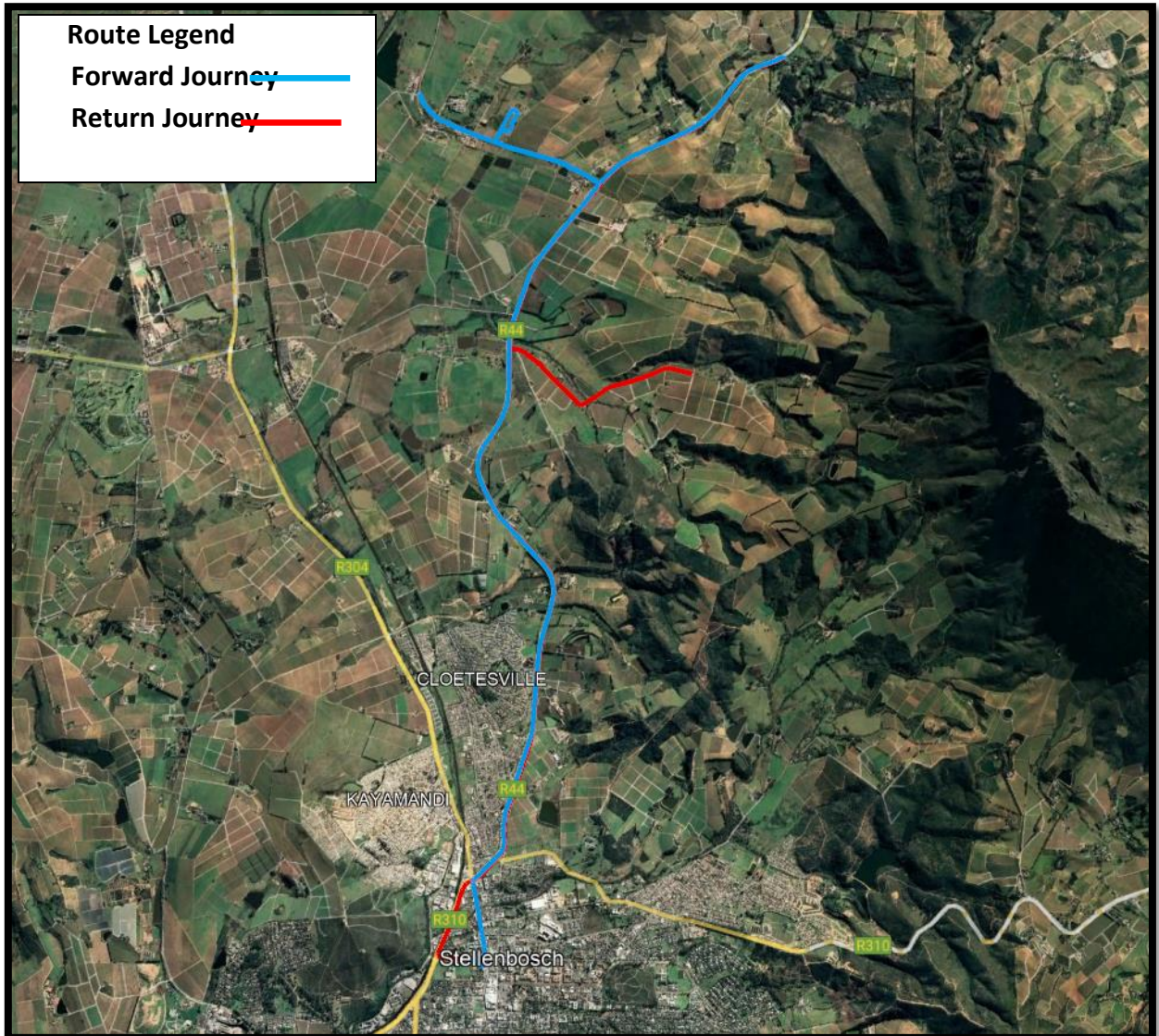
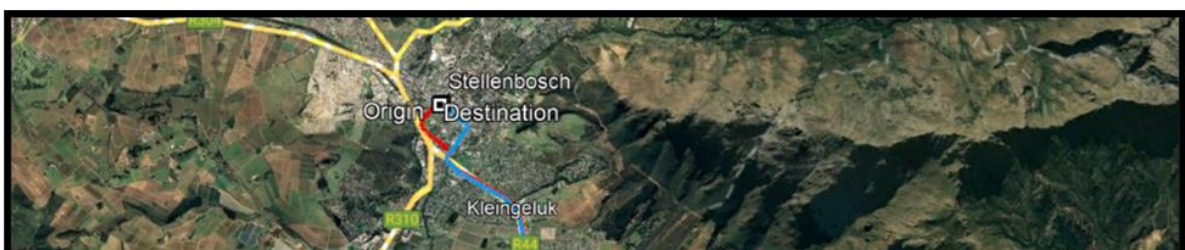


FIGURE 13: THE FORWARD AND RETURN JOURNEY ON ELSENBURG ROUTE

The Elsenburg route heads to the north of Stellenbosch and service most of the farms along the R44 between Stellenbosch and Elsenburg. A round trip is about 30km and takes about 45 to 60 minutes depending on the amount of people disembarking and embarking along the route. No other additional information was recorded only the trip. The operating license have two route authorities (673;674) with one authority allowing to service multiple areas on the return journey and other allowing to go to the CBD directly. Morning Operations start along the route and in some instances, drivers need to travel on gravel farm roads to find passengers. The morning trip passes the rank and passengers are dropped at points within the CBD closer to places of employment. During the afternoon peak all trips heading back originates from the rank and will drop passengers along the route or at their respective farms along the R44.

Route Name	Stellenbosch-Somerset West
Route Numbers Affected	669,741
Old Route Description	<p>669: From Taxi rank at Blom Street (outside) Stellenbosch, left in Alexander Street, left in R44 to Somerset West, left in Main Road, right in Upper Orange Street, left in Church Street to Taxi Stand in Somerset West and back as follows: in R44, right in Alexander Street, right to Blom Street (outside) taxi rank subject to the condition that on the return journey from Somerset West, passengers may only be picked up to the Valley Road, i.e. no passengers may be picked up between the Valley Road and Blom Street taxi stand not.</p> <p>741: From Taxi Rank in Bloem Street Stellenbosch, into Mark street, right into Dorp Street, left into R44, left into Main Road Somerset West, right into Church Street to Taxi Rank Somerset West and return along the same route.</p>
Route Description as per on board data collected	<p>From Bergzicht Taxi Rank, left into Merriman Street, left into Papegaaï street, right into Dorp Street, left into R44, left into Main Road, into the Central Business area right into Church Street, right into the Somerset - West Taxi Rank. Return Journey: From Somerset - West Taxi Rank, left into Church Street, left into Main Road, right into the R44, right into Merriman Avenue, right into Bergzicht Taxi Rank.</p>

TABLE 14: COMPARISON OF ROUTE DESCRIPTION ON SOMERSET WEST ROUTE



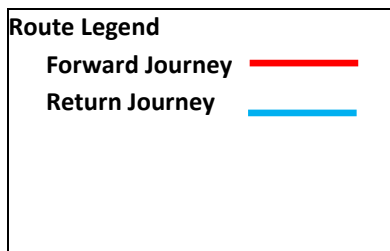


FIGURE 14: THE FORWARD AND RETURN JOURNEY ON SOMERSET WEST

The Somerset west route begins at the Bergzicht taxi rank and ends at the Somerset west taxi rank. Depending on the number of people disembarking and embarking along the route and traffic conditions on the R44, the trip takes 60 to 120 minutes round trip. The operating license has two route authorities (669;741): one allows travel down the main road into the Somerset West CBD, while the other allows transit via a back route.

Appendix B : ETHICS CLEARANCE FORM

ETHICS APPLICATION FORM


Please Note:


Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: <http://www.ebe.uct.ac.za/ebe/research/ethics1>

APPLICANT'S DETAILS	
Name of principal researcher, student or external applicant	Roscoe Bergstedt
Department	Civil Engineering
Preferred email address of applicant:	Roscoeb5@gmail.com
Your Degree: e.g., MSc, PhD, etc.	MEng
Credit Value of if Student Research: e.g., 60/120/180/360 etc.	60 Credits
Name of Supervisor (if supervised):	Professor Roger Behrens
If this is a research contract, indicate the source of funding/sponsorship	Department of Transport
Project Title	Investigation into the (in)flexibility of the operating license system for public transport service explored through the lens of Stellenbosch.

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

APPLICATION BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Roscoe Bergstedt		27/05/2021
SUPPORTED BY	Full name	Signature	Date
Supervisor (where applicable)	Roger Behrens		31 May 2021

APPROVED BY	Full name	Signature	Date
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section 1; and for all Undergraduate research (including Honours).	Prof. Alphose Zingoni		18/06/2021
Chair: Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the questions in Section 1.			

Appendix C : EXAMPLE OF CONSENT LETTER TO OFFICIALS



CONSENT TO PARTICIPATE IN RESEARCH

You are requested to take part in a master dissertation research conducted by Roscoe Bergstedt from the Faculty of Engineering & The Built Environment at the University of Cape Town. You have been selected as a possible participant because of your work and/or involvement pertaining to public transport operations within the Stellenbosch area.

1. PURPOSE OF THE RESEARCH

The purpose of the research is to investigate the (in)flexibility of the South African operating license system for public transport operations through the lens of Stellenbosch. This will provide the insight required to compile the research outcomes.

2. WHAT WILL BE ASKED OF ME?

If you agree to take part in this research, you will be asked to complete a 10 - 15-minute structured interview.

3. POSSIBLE BENEFITS TO PARTICIPANTS

The research will potentially highlight the issues currently experienced by the planning authorities and the industry and passengers regarding route operations and conditions of the operating licenses for public transport services in Stellenbosch.

4. PROTECTION OF INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study, and that could possibly identify you as a participant, will be protected. This will be done through not recording any personal details of participants. Data will be stored safely with only access of the researcher. Your organisation/role will be identified in the final report and will form part of the research, but personal anonymity will be adhered to. Your interview will involve of answering questions and all any detailed information that requires verbal clarifications will be recorded by the researcher. Interview notes will be provided to participants to verify the information they provide before it is used for research purposes.

5. PARTICIPATION AND WITHDRAWAL

You can choose whether to give consent to be part of the research or not. If you agree to take part in this research, you may withdraw at any time without any consequence. You may also refuse to answer any questions should you not feel comfortable, elaborate should you want to add any additional information relating to the research.

6. RESEARCHER & SUPERVISOR CONTACT INFORMATION

If you have any questions or concerns about this research, please feel free to contact Roscoe Bergstedt at Roscoeb5@gmail.com or 082 686 0836 and/or the supervisor Roger Behrens at (roger.behrens@uct.ac.za)

7. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without disadvantage. You are not waiving any legal claims or rights because of your participation in this research.

DECLARATION OF CONSENT BY THE PARTICIPANT

As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.
- I have had a chance to ask questions and all my questions have been answered.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I as a **Planning Authority Official** agree to take part in this research study, as conducted by Roscoe Bergstedt.

Signature of Participant

Date

DECLARATION BY STUDENT

I the student, hereby declare that all the information collected and contained in the research has been thoroughly explained to the participant. I also declare that the participant has been encouraged to ask any questions.

Signature of Student

Date

Appendix D : EXAMPLE OF CONSENT LETTER TO TAXI OWNERS



CONSENT TO PARTICIPATE IN RESEARCH

You are requested to take part in a master dissertation research conducted by Roscoe Bergstedt from the Faculty of Engineering & The Built Environment at the University of Cape Town. You have been selected as a possible participant because of your work and/or involvement pertaining to public transport operations within the Stellenbosch area.

1. PURPOSE OF THE RESEARCH

The purpose of the research is to investigate the (in)flexibility of the South African operating license system for public transport operations through the lens of Stellenbosch. This will provide the insight required to compile the research outcomes.

2. WHAT WILL BE ASKED OF ME?

If you agree to take part in this research, you will be asked to complete a 10 - 15-minute structured interview.

3. POSSIBLE BENEFITS TO PARTICIPANTS

The research will potentially highlight the issues currently experienced by the planning authorities and the industry and passengers regarding route operations and conditions of the operating licenses for public transport services in Stellenbosch.

4. PROTECTION OF INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study, and that could possibly identify you as a participant, will be protected. This will be done through not recording any personal details of participants. Data will be stored safely with only access of the researcher. Your organisation/role will be identified in the final report and will form part of the research, but personal anonymity will be adhered to. Your interview will involve of answering questions and all any detailed information that requires verbal clarifications will be recorded by the researcher. Interview notes will be provided to participants to verify the information they provide before it is used for research purposes.

5. PARTICIPATION AND WITHDRAWAL

You can choose whether to give consent to be part of the research or not. If you agree to take part in this research, you may withdraw at any time without any consequence. You may also refuse to answer any questions should you not feel comfortable, elaborate should you want to add any additional information relating to the research.

6. RESEARCHER & SUPERVISOR CONTACT INFORMATION

If you have any questions or concerns about this research, please feel free to contact Roscoe Bergstedt at Roscoeb5@gmail.com or 082 686 0836 and/or the supervisor Roger Behrens at (roger.behrens@uct.ac.za)

7. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without disadvantage. You are not waiving any legal claims or rights because of your participation in this research.

DECLARATION OF CONSENT BY THE PARTICIPANT

As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.
- I have had a chance to ask questions and all my questions have been answered.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I as a **Minibus Taxi Owner** agree to take part in this research study, as conducted by Roscoe Bergstedt.

Signature of Participant

Date

DECLARATION BY STUDENT

I the student, hereby declare that all the information collected and contained in the research has been thoroughly explained to the participant. I also declare that the participant has been encouraged to ask any questions.

Signature of Student

Date

Appendix E : EXAMPLE OF CONSENT LETTER TO DRIVERS



CONSENT TO PARTICIPATE IN RESEARCH

You are requested to take part in master dissertation research conducted by Roscoe Bergstedt, from the Faculty of Engineering & The Built Environment at the University of Cape Town. You have been selected as a possible participant because of your work and/or involvement pertaining to public transport operations within the Stellenbosch area.

1. PURPOSE OF THE RESEARCH

The purpose of the research is to investigate the (in)flexibility of the South African operating license system for public transport operations through the lens of Stellenbosch. This will provide the insight required to compile the research outcomes.

2. WHAT WILL BE ASKED OF ME?

If you agree to take part in this research, you will be asked to complete a questionnaire.

3. POSSIBLE BENEFITS TO PARTICIPANTS

The research will potentially highlight the issues currently experienced by planning authorities and the industry and passengers regarding route operations and conditions of the operating licenses for public transport services in Stellenbosch.

4. PROTECTION OF INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study, and that could possibly identify you as a participant, will be protected. This will be done through not recording any personal details of participants. Data will be stored safely with only access of the researcher. Your organisation/role will be identified in the final report and will form part of the research, but personal anonymity will be adhered to. Your questionnaire/interview will involve the completion of a survey form and any detailed information that requires verbal clarification will be recorded by the researcher. Interview notes will be provided to participants to verify the information they provide before it is used for research purposes.

5. PARTICIPATION AND WITHDRAWAL

You can choose whether to give consent to be part of the research or not. If you agree to take part in this research, you may withdraw at any time without any consequence. You may also refuse to answer any questions should you not feel comfortable and elaborate should you want to add any additional information relating to the research.

6. RESEARCHER & SUPERVISOR CONTACT INFORMATION

If you have any questions or concerns about this research, please feel free to contact Roscoe Bergstedt at Roscoeb5@gmail.com or 082 686 0836 and/or the supervisor Roger Behrens at (roger.behrens@uct.ac.za)

7. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without disadvantage. You are not waiving any legal claims or rights because of your participation in this research.

DECLARATION OF CONSENT BY THE PARTICIPANT

As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.
- I have had a chance to ask questions and all my questions have been answered.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I as a **Minibus Taxi Operator (Driver)** agree to take part in this research study, as conducted by Roscoe Bergstedt.

Signature of Participant

Date

DECLARATION BY STUDENT

I the student, hereby declare that all the information collected and contained in the research has been thoroughly explained to the participant. I also declare that the participant has been encouraged to ask any questions.

Signature of Student

Date

Appendix F : EXAMPLE OF CONSENT LETTER TO PASSENGERS



CONSENT TO PARTICIPATE IN RESEARCH

You are requested to take part in master dissertation research conducted by Roscoe Bergstedt, from the Faculty of Engineering & The Built Environment at the University of Cape Town. You have been selected as a possible participant because of your work and/or involvement pertaining to public transport operations within the Stellenbosch area.

1. PURPOSE OF THE RESEARCH

The purpose of the research is to investigate the (in)flexibility of the South African operating license system for public transport operations through the lens of Stellenbosch. This will provide the insight required to compile the research outcomes.

2. WHAT WILL BE ASKED OF ME?

If you agree to take part in this research, you will be asked to complete a questionnaire.

3. POSSIBLE BENEFITS TO PARTICIPANTS

The research will potentially highlight the issues currently experienced by planning authorities and the industry and passengers regarding route operations and conditions of the operating licenses for public transport services in Stellenbosch.

4. PROTECTION OF INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study, and that could possibly identify you as a participant, will be protected. This will be done through not recording any personal details of participants. Data will be stored safely with only access of the researcher. Your organisation/role will be identified in the final report and will form part of the research, but personal anonymity will be adhered to. Your questionnaire/interview will involve the completion of a survey form and any detailed information that requires verbal clarification will be recorded by the researcher. Interview notes will be provided to participants to verify the information they provide before it is used for research purposes.

5. PARTICIPATION AND WITHDRAWAL

You can choose whether to give consent to be part of the research or not. If you agree to take part in this research, you may withdraw at any time without any consequence. You may also refuse to answer any questions should you not feel comfortable and elaborate should you want to add any additional information relating to the research.

6. RESEARCHER & SUPERVISOR CONTACT INFORMATION

If you have any questions or concerns about this research, please feel free to contact Roscoe Bergstedt at Roscoeb5@gmail.com or 082 686 0836 and/or the supervisor Roger Behrens at (roger.behrens@uct.ac.za)

7. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without disadvantage. You are not waiving any legal claims or rights because of your participation in this research.

DECLARATION OF CONSENT BY THE PARTICIPANT

As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.
- I have had a chance to ask questions and all my questions have been answered.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I as a **passenger** agree to take part in this research study, as conducted by Roscoe Bergstedt.

Signature of Participant

Date

DECLARATION BY STUDENT

I the student, hereby declare that all the information collected and contained in the research has been thoroughly explained to the participant. I also declare that the participant has been encouraged to ask any questions.

Signature of Student

Date

**Appendix G : EXAMPLE OF INTERVIEW QUESTIONS &
QUESTIONNAIRE**



Interview regarding the Public Transport Operation for Owners

Thank you for participating in this Interview session for public transport operations in the Stellenbosch Area. The purpose of this interview is solely for research. The understanding of the owner's experiences will assist me to compile my research outcomes. This interview will take approximately 10 to 15 minutes and may be stopped at time.

Route Name/number:

Date:

What is your age:

Please indicate your gender:

MALE

FEMALE

1. I'm interested in understanding what the impact of relocating the rank has been, were you owner of a minibus taxi driver before and after the rank was relocated?

-
2. Did the planning authority consult with minibus taxi owners on the relocation of the rank?

3. Was the relocation of the rank something the taxi owners/association requested?

4. In your perspective was the route more or less viable before or after the ranked moved?

5. How many years have you been in the minibus industry and why?

6. Why did you not pursue to change the operating license route description after the relocation of the rank?

7. Were you compensated by the planning authority to change your route description after the rank was relocated?

8. Was there any indication from the planning authority to assist with the route change due to the rank change?

9. Does it worry you that your vehicle is operating with an operating license route description does not match the route you are operating, and did you seek to rectify it, if not why did you not?

10. Was the relocation of the rank something that was agreed between owners (the association) and the planning authority or was it something that the owner's and association were against and why?

11. Were the owner's part of the identification of the location and requirements of the new rank and do you think the rank was moved to the right location?

12. Would you say facilities and access to land uses were better at the old rank or the new rank?

13. How did the relocation of the rank impact your business did become more or less profitable for your business?

14. Does the new rank have better facilities or was the facilities better at the old rank?

15. Did conflict with traffic law enforcement increased after the relocation of the rank?

16. Would you say safety conditions were better at the old rank or the new rank and why would you say so?

17. To what extend do your drivers in order to find the passengers to fill their vehicle how often do they deviate from the route other than necessitated by the change in rank location?

18. How restrictive is the conditions of the operating license to you, and do you think it would be an improvement if you were given a licence that entitle you to operate within an area on any routes you choose rather than having to stick to one route.

19. General comments / suggestions / issues/ improvements:



Thank you very much for taking the time to answer the questions to the interview. Your participation and views are important to me and will enable me to compile my research outcome.



Survey on Public Transport Operation for Drivers

Thank you for participating in this Survey for public transport operations in the Stellenbosch Area. The purpose of this survey is solely for research. This understanding of the driver's needs, and experiences will assist me to understand and compile my research outcomes.

Route Name/number:

Date:

Where do you live? (area):

20. I'm interested in understanding what the impact of relocating the rank has been, were you operating as a minibus taxi driver before and after the rank was relocated?

1. How many years have you been a minibus taxi driver?

- (a) < 10 years
- (b) 10 years – 15 years
- (c) 15 years – 20 years
- (d) > 20 years

2. Where do you start your trip in the mornings??

- (a) Residential Area
- (b) Taxi Rank
- (c) Along the route
- (d) Station
- (e) other

3. Since the relocation of the rank do you have an increase in the number of trips or did it remain the same?

- (a) Increase in trips
- (b) Reduction in trips
- (c) Trips remained the same

4. Thinking about the number of passengers that you pick up and drop off did the rank move increase or decrease the amount of passenger or did it stay the same?

- (a) Increase in passengers
- (b) Decrease in passengers
- (c) The same number of passengers

6. How often do you deviate from your route description?

- (a) Daily
- (b) Seldom
- (c) Only when requested
- (d) Never

7. Would you say that conflict with law enforcement have increased or reduced after the ranked move? (Seeing that you were operating off route)

- (a) Increased
- (b) Reduced
- (c) Remained the same

(d) Don't have conflict with traffic

8. On average what was the collection of money, before the rank was moved?

- (a) Significantly More
 (b) Somewhat more
 (c) Somewhat less
 (d) Significantly less

9. On average what was the collection of money, after the rank was moved?

- (a) Significantly More
 (b) Somewhat more
 (c) No difference
 (d) Somewhat less
 (e) Significantly less

10. Did the relocation of the rank make the journey time less or more? Would you say operating hours have increased or reduced before or after the ranked moved?

- (a) An Increase in journey time
 (b) Journey time remained the same
 (c) Reduction in Journey time

11. Did you encounter more problems with passengers before or after the ranked moved?

- (a) More problems before the ranked moved
 (b) Less problems before the ranked moved
 (c) More problems after the ranked moved
 (d) Less problems after the ranked moved
 (e) Unchanged

12. From your personal perspective, has Facilities at the rank improve like comfort and toilet facilities after the relocation to the Bergzicht Rank?

WORSENERD

**REMAINED
THE SAME**

IMPROVED

Additional Comments _____

13. From your personal perspective, has safety for drivers improve, remained the same or worsened after the relocation of the rank?

WORSENERD

REMAINED
THE SAME

IMPROVED

Additional Comments _____

14. From your personal perspective, would you say conflict between operators/drivers has increased, remained the same or worsened after the relocation of the rank?

WORSENERD

REMAINED
THE SAME

INCREASED

Additional Comments _____

15. Apart from deviating from your operating license going to and from the new rank how often do you deviate from your route in response to passenger request to collect or drop them off.

16. How restrictive is the conditions of the operating license to you, and do you think it would be an improvement if you were given a licence that entitle you to operate within an area on any routes you choose rather than having to stick to one route.

17. General comments / suggestions / issues/ improvements:

Thank you very much for taking the time to complete the survey. Your participation and views are important to me and will enable me to compile my research outcome.



Survey on Public Transport Operation for Passengers

Thank you for participating in this Survey for public transport operations in the Stellenbosch Area. The purpose of this survey is solely for research. This understanding of the passenger's needs, and experiences will assist me to understand and compile my research outcomes.

Route Name/number:

Date:

Gender:

MALE

FEMALE

21. I'm interested in understanding what the impact of relocating the rank has been were you a regular minibus taxi user before the rank was relocated? If so, name the previous place and the new place.

22. What was the most frequent trip that you made by minibus taxi before the rank was relocated, what was the origin of that trip and what was the destination of that trip and were there any transfers in between?

Origin-

Where

Destination-

Where

Transfers-

How Many vehicles-

3. How much time did you normally spend walking to and from the minibus taxi service before the rank moved?

To the Rank

From the Rank to Final Destination

(a) < 30 Minutes

(f) < 30 Minutes

(b) 30 – 45 minutes

(g) 30 – 45 minutes

(c) 45 minutes – 1 hour

(h) 45 minutes – 1 hour

(d) 1 – 2 hours

(i) 1 – 2 hours

(e) > 2 hours

(j) > 2 hours

4. What was your normal total in vehicle journey time before the rank moved?

- (a) < 30 Minutes
- (b) 30 – 45 minutes
- (c) 45 minutes – 1 hour
- (d) 1 – 2 hours
- (e) > 2 hours

5. If there was transfer at the rank what was the waiting time before the rank moved?

- (a) < 30 Minutes
- (b) 30 – 45 minutes
- (c) 45 minutes – 1 hour
- (d) 1 – 2 hours
- (e) > 2 hours

6. From your personal perspective, did the relocation of the taxis worsened or improved your daily traveling situation?

- WORSENERD** **REMAINED THE SAME** **IMPROVED**

Additional Comments _____

7. In your personal perspective how would you rate the ease of travel before the rank moved.

- (a) Very easy
- (b) Somewhat easy
- (c) Challenging
- (d) Very Challenging
- (e) The same as now

8. In your personal perspective how would you rate the ease of travel after the rank moved.

- (a) Very easy
- (b) Somewhat easy
- (c) Challenging
- (d) Very Challenging
- (e) The same as before

9. What is the most common trip that you made by minibus taxi after the rank was relocated, what was the origin of that trip and what was the destination of that trip and were there any transfers in between?

Origin- _____ Where _____

Destination- _____ Where _____

Transfers- _____ How Many vehicles- _____

10. How much time did you normally spend walking to and from the minibus taxi service after the rank moved?

To the Rank

- (a) < 30 Minutes
- (b) 30 – 45 minutes
- (c) 45 minutes – 1 hour
- (d) 1 – 2 hours
- (e) > 2 hours

From the Rank to Final Destination

- (f) < 30 Minutes
- (g) 30 – 45 minutes
- (h) 45 minutes – 1 hour
- (i) 1 – 2 hours
- (j) > 2 hours

11. What was your normal total in vehicle journey time after the rank moved?

- (a) < 30 Minutes
- (b) 30 – 45 minutes
- (c) 45 minutes – 1 hour
- (d) 1 – 2 hours
- (e) > 2 hours

12. If there was transfer at the rank what was the waiting time after the rank moved?

- (a) < 30 Minutes
- (b) 30 – 45 minutes
- (c) 45 minutes – 1 hour
- (d) 1 – 2 hours
- (e) > 2 hours

13. How would you rate facilities at the old rank in terms of satisfaction in relation to :

Protection against Weathering elements

- | | |
|---|---|
| (a) Very dissatisfied <input type="checkbox"/> | (e) Slightly satisfied <input type="checkbox"/> |
| (b) Somewhat dissatisfied <input type="checkbox"/> | (f) Somewhat satisfied <input type="checkbox"/> |
| (c) Slightly dissatisfied <input type="checkbox"/> | (g) Very Satisfied <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied <input type="checkbox"/> | |

Ablution facilities

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (e) Slightly satisfied | <input type="checkbox"/> |
| (b) Somewhat dissatisfied | <input type="checkbox"/> | (f) Somewhat satisfied | <input type="checkbox"/> |
| (c) Slightly dissatisfied | <input type="checkbox"/> | (g) Very Satisfied | <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

Comfort of Seating

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (e) Slightly satisfied | <input type="checkbox"/> |
| (b) Somewhat dissatisfied | <input type="checkbox"/> | (f) Somewhat satisfied | <input type="checkbox"/> |
| (c) Slightly dissatisfied | <input type="checkbox"/> | (g) Very Satisfied | <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

Safety & Security

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (e) Slightly satisfied | <input type="checkbox"/> |
| (b) Somewhat dissatisfied | <input type="checkbox"/> | (f) Somewhat satisfied | <input type="checkbox"/> |
| (c) Slightly dissatisfied | <input type="checkbox"/> | (g) Very Satisfied | <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

14. How would you rate facilities at the new rank in terms of satisfaction in relation to :**Protection against Weathering elements**

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (e) Slightly satisfied | <input type="checkbox"/> |
| (b) Somewhat dissatisfied | <input type="checkbox"/> | (f) Somewhat satisfied | <input type="checkbox"/> |
| (c) Slightly dissatisfied | <input type="checkbox"/> | (g) Very Satisfied | <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

Ablution facilities

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (e) Slightly satisfied | <input type="checkbox"/> |
| (b) Somewhat dissatisfied | <input type="checkbox"/> | (f) Somewhat satisfied | <input type="checkbox"/> |
| (c) Slightly dissatisfied | <input type="checkbox"/> | (g) Very Satisfied | <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

Comfort of Seating

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (e) Slightly satisfied | <input type="checkbox"/> |
| (b) Somewhat dissatisfied | <input type="checkbox"/> | (f) Somewhat satisfied | <input type="checkbox"/> |
| (c) Slightly dissatisfied | <input type="checkbox"/> | (g) Very Satisfied | <input type="checkbox"/> |
| (d) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

Safety & Security

- | | | | |
|--|--------------------------|------------------------|--------------------------|
| (a) Very dissatisfied | <input type="checkbox"/> | (q) Slightly satisfied | <input type="checkbox"/> |
| (e) Somewhat dissatisfied | <input type="checkbox"/> | (s) Somewhat satisfied | <input type="checkbox"/> |
| (i) Slightly dissatisfied | <input type="checkbox"/> | (w) Very Satisfied | <input type="checkbox"/> |
| (m) Neither satisfied nor dissatisfied | <input type="checkbox"/> | | |

14. General comments / suggestions / issues/ improvements:

Thank you very much for taking the time to answer the questions to the questionnaire. Your participation and views are important to me and will enable me to compile my research outcome.



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Interview regarding the Public Transport Operation for Officials

Thank you for participating in this Interview session for public transport operations in the Stellenbosch Area. The purpose of this interview is solely for research. The understanding of the official's experiences will assist me to compile my research outcomes. This interview will take approximately 10 to 15 minutes and may be stopped at time.

Designation:

Date:

Please indicate your gender:

MALE

FEMALE

1. Was there any consultation between the planning authority and taxi association on the change of the location of the rank?

2. Why was this change of rank location implemented and to what extent was the legislation around operating licenses a restriction to the planning authority?

3. What was the main objectives for changing the location of the rank changed?

4. Was there consultation with the stakeholders and who were the stakeholders?

5. Was any compensation given to the industry to amend their route descriptions?

6. How were the stakeholders consulted and what was the outcome of the consultation?

7. Why was the new rank build at this location and was it the most appropriate position?

8. Was the relocation of the rank something that was agreed between the association and the planning authority or was it something that was identified through a study/investigation and was there any opposing factors from the industry?

9. What was the Taxi associations involvement on the build of the new rank and what needs was addressed with the new rank?

10. Would you say facilities and access to land uses were better at the old rank or the new rank?

11. Having a traffic law enforcement system based on route descriptions forcing minibus taxi operators to now move off those route descriptions, were there any undertakings to change it by the planning authority?

12. In response to 11, how do you enforce the law on these mini-bus taxi operators being off route due to rank changed implemented by the planning authority or was there an agreement signed between the parties involved?

13. Was the impact on the operations taken into consideration before the rank was moved?

14. Why was the new rank not build at the old ranks location?


15. Would you say safety condition were better at the old rank or the new rank and why would you say so ?

16. If you should do the process over would you follow a different approach or the same. If a different approach would be followed what will this be?

17. General comments / suggestions / issues/ improvements:

Thank you very much for taking the time to answer the questions to the interview. Your participation and views are important to me and will enable me to compile my research outcome.

**Appendix H : EXAMPLE OF ROUTE BASE OPERATING LICENSE AND
RADIUS OPERATING LICENSE**

RCP 4		TV3/6
Republiek van Suid-Afrika DEPARTEMENT VAN VERVOER OPENBARE PERMIT		Republic of South Africa DEPARTMENT OF TRANSPORT PUBLIC PERMIT
Hierdie permit is uitgevaardig in ooreenstemming met die voorskrifte van die Wet op Padvervoer, 1977 (Wet 74 van 1977). Issued in terms of and subject to the provisions of the Road Transportation Act, 1977 (Act 74 of 1977).		
BESONDERHEDE VAN PERMIT-HOUER		PERMIT HOLDER PARTICULARS
Registrasienommer Aansoeknommer ID-nommer Naam Adres	81.V 50601771 989118 2801185042981 LOUKENBERG MICHAEL HENRY MH 12 FIR STREET CLOETSBVILLE STELLENBOSCH 7600	Permit number Application number ID number Name Address
VOERTUIGBESONDERHEDE		VEHICLE PARTICULARS
Registrasienommer Jaar van registrasie Bruto voertuigmassa Enjinnommer Oondersienommer Fabriekst Passasiers Tipe voertuig	CL26508 1995 L18H100529D R021897 NISSAN 15 Kombi/Mikrobus/Minibus Kombi/Microbus/Minibus	Registration number Year of registration Gross vehicle mass Engine number Chassis number Manufacture Passengers Type of vehicle
PERMIT-BESONDERHEDE		PERMIT PARTICULARS
Oorspronklike Oorspronklike Oorspronklike	No. / No. 2001/01/10 2001/01/10	Gross border permit Valid from Valid until
Hierdie permit verleen magtiging en is beperk tot die vervoer volgens die volgende beskrywing. This permit authorises and is restricted to the conveyance as set out in the following description.		
BYLAE 1 - ANNEKURE 1		
DAAROM/SIENK PADVERVOERRAAD PRIVAATSAK/PRIVATE BAG X8 18 JAN 2001 LOCAL ROAD TRANSPORTATION BOARD	Sekretaris Secretary Raad Board	GOODWOOD
[Cut along this line.]		
D 0328897B Z579		
UITGEREK SONDER ENIGE VERANDERING OF UITKRAPPING ISSUED WITHOUT ANY ALTERATIONS OR FRASURES		

BYLAE 1

ANNEXURE 1

Uitgereik in samewerking met Openbare Padvervoer-
permit nommer:

Issued in conjunction with Public Carrier Permit
number:

BLV506517

Hierdie permit verleen magtiging en is beperk tot
die vervoer volgens die volgende beskrywing:

This permit authorises and is restricted to the
conveyance as set out in the following description:

Die vervoer van taxi passasiers.
The conveyance of taxi passengers.

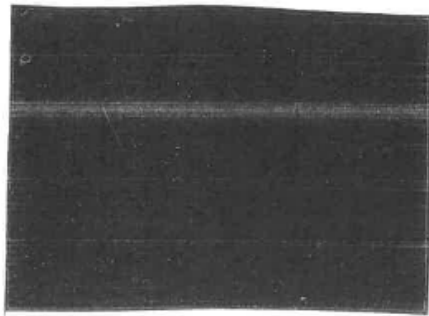
665 - STELLENBOSCH - CLOETESVILLE

VANAF TAXI STAANPLEK TE BERGZICHT STELLENBOSCH, LINKS IN
BIRDSTRAAT REGS IN R44, LINKS IN LANGSUDSTRAAT NA
CLOETESVILLE WOONGEBIED EN TERUG SOOS VOLG: REGS IN R44 NA
STELLENBOSCH SAKEKERN ONDERWORPE AAN DIE VOLGENDE
VOORWAARDES: 1. PASSASIERE MOET TER ALLE TYE BY TOEGEKENDE
STAANPLEK OPGELAAI WORD; 2. GEEN PASSASIERE MAG IN DIE
MIDDEDORP (BIRDSTRAAT) OPGELAAI WORD NIE; 3. PASSASIERE MAG
BY DU TOIT SPOORWEGSTASIE OPGELAAI WORD; 4. PASSASIERE MOET
TER ALLE TYE BY TOEGEKENDE STAANPLEK OPGELAAI WORD, BEHALWE
DIE TYE TUSSEN 19:00 EN 09:00 MITS DIT 'N WETTIGE
PARKEERPLEK IS.

666 - STELLENBOSCH - CLOETESVILLE

VANAF TAXI STAANPLEK TE BERGZICHT STELLENBOSCH, LINKS IN
BIRDSTRAAT TOT BY DU TOIT STASIE, REGS IN BELLSTRAAT, LINKS
IN TENNANTSTRAAT, NA CLOETESVILLE WOONGEBIED EN TERUG SOOS
VOLG: REGS IN BELLSTRAAT, LINKS BIRDSTRAAT NA DIE SENTRALE
SAKEKERN EN OMLIGGENDE WOONGEBIEDE NAAMLIK: PARADYSKLOOF,
ONDER PAPAGAAIBERG, DIE BOORD, DALSIG, KRIGEVILLE, KARINDAL,
UNIE PARK, SIMONSWYK, PLAKENBURG INDUSTRIELE GEBIED EN
DEVONALLE INDUSTRIELE GEBIED ONDERWORPE AAN DIE VOLGENDE
VOORWAARDES: 1. PASSASIERE MOET TER ALLE TYE BY TOEGEKENDE
STAANPLEK OPGELAAI WORD; 2. GEEN PASSASIERE MAG IN DIE
MIDDEDORP (BIRDSTRAAT) OPGELAAI WORD NIE; 3. PASSASIERE

vervolg/continue



RCP 5

TV5/6

DEPARTMENT OF TRANSPORT

DEPARTMENT OF TRANSPORT

OPERATING LICENSE

OPERATING LICENSE

Issued in terms of and subject to the provisions of the National Land Transport Transition Act, 2000 (Act 22 of 2000).

Issued in terms of and subject to the provisions of the National Land Transport Transition Act, 2000 (Act 22 of 2000).

OPERATING LICENSE HOLDER

OPERATING LICENSE HOLDER

Operating License number
Application number
ID-number

028 00500 10
1250281
51221504001

Name

DE KOKER JOHN JOHANNES

Address

HELENKOOTENBERG 54
LINDAVILLE
STURMEBACH
7600

Operating License number
Application number
ID-number

Name

Address

VEHICLE PARTICULARS

VEHICLE PARTICULARS

Vehicle registration number
Year of first registration
Gross vehicle mass
Engine number
Chassis number
Manufacture
Passengers
Type of vehicle

028000
2008
12502810700
DUELLINGKOPPEL
147000
113
Combi/Microbus/Minibus
Combi/Microbus/Minibus

Vehicle registration number
Year of first registration
Gross vehicle mass
Engine number
Chassis number
Manufacture
Passengers
Type of vehicle

OPERATING LICENSE PARTICULARS

OPERATING LICENSE PARTICULARS

Cross border permit
Valid from
Valid to

02
2012/09/01
Indefinite

Cross border permit
Valid from
Valid until

This document authorises and is restricted to the conveyance as set out in the following description:

This document authorises and is restricted to the conveyance as set out in the following description:

Date

[Signature box]

SIGNATURE OF

Secretary

Board

VANGATE SERVICE CENTRE

FOR THE FILE

PUBLIC ROAD TRANSPORT

OLE

2012/09/01

from

DE KOKER

Passengers

FOR THE FILE

Cut along this line.

8490517

6. The holder of the operating licence will ensure that the uniform fare structure as determined by his or her association is adhered to at all times. No fare may be negotiated between the driver and the passenger. The fare structure must be clearly displayed inside the vehicle;
7. The operating licence may be withdrawn in the event of the operator resigning from the association who provided the support letter for the granting of the application;
8. In the event of the operator being deregistered by the Office of the Provincial Taxi Registrar, the operating licence may be withdrawn using the provisions of section 79 of the NLTA;

The following conditions are imposed on this charter service operating licence in terms of section 57(5) of the NLTA.

1. A charter operating licence may not be used to provide the following types of public transport services:

- * Minibus-taxi type services
- * Staff service
- * Metered taxi services
- * Scholar services
- * Tourist services
- * Contracted services
- * Long distance services

The only exception to this rule is where the operating licence also authorises the holder to provide other public transport services in addition to the charter authority;

2. The holder of this operating licence is authorised to transport groups of persons with a common interest or purpose to a particular destination (the same place) (previously known as the transportation of organised parties). In other words, it should be a homogeneous group, which could for example be members of a church or community organisation going to a wedding, funeral, conference, etc. The group must hire the vehicle and driver and can determine the route, date and time of departure;
3. Passengers may not be charged fares individually by either the driver or the operator and fares must be arranged beforehand;
4. The holder may not solicit passenger trips by requesting passengers to put their names and contact details on a waiting list. This does not constitute a group with a common interest or purpose and this practice is not allowed in terms of this operating licence. Law enforcement officers should prohibit the random conglomeration (grouping) of people to load a particular vehicle. This will result in a heterogeneous group (people that are randomly grouped together without a common purpose) that will more than likely disembark at different places. The NLTA explicitly stipulates that passengers must go to a common (same) destination;
5. The holder of this operating licence must keep a detailed logbook showing the names and contact details of the client, time of departure, destination, trip purpose and arrival time. This logbook must be submitted to the Provincial Regulatory Entity every six months and where the holder applies for the renewal of the operating licence. Such a logbook must also be presented to the PRE and Law Enforcement Officers on request;
6. The vehicle specified in this operating licence may not pick up passengers outside of the provincial area specified in this operating licence (This is not applicable to operating licences authorising services in the Republic of South Africa);
7. Where a charter authority is issued, the holder must ensure that the passenger list is kept in the vehicle, bar weddings, funerals and sporting trips where it is impossible to determine who will make use of the service;
8. No municipal ranks or bus terminals to be used for the loading and off-loading of passengers;
9. Charter operating licences cannot be used to form a minibus-taxi association or to apply for membership of a minibus-taxi association. Holders of charter operating licences cannot affiliate to a minibus-taxi association unless the operator also holds a valid operating licence(s) to provide minibus-taxi type services on the route or routes served by the association;
10. All luggage must be properly labelled with the name of the passenger whether such luggage is kept in the vehicle or in a separate trailer. The driver of the vehicle will be held responsible for any luggage that is not properly labelled in the event of illegal goods/contraband being discovered in such unmarked luggage during search operations;

RCP 5

TV5/6

Republic of South Africa

Republiek van Suid-Afrika

DEPARTMENT OF TRANSPORT

DEPARTMENT OF TRANSPORT

OPERATING LICENSE

OPERATING LICENSE

Issued in terms of and subject to the provisions of the National Land Transport Transition Act, 2000 (Act 22 of 2000).

Issued in terms of and subject to the provisions of the National Land Transport Transition Act, 2000 (Act 22 of 2000).

OPERATING LICENSE HOLDER

OPERATING LICENSE HOLDER

Operating License number
Application number
ID-number
Name
Address

OLB 502370/10
8328164
5995045142085
RHOZE LOUIS L
LAPPANSTRAAT 16
TENNANTVILLE
STELLENBOSCH
7600

Operating License number
Application number
ID-number
Name
Address

VEHICLE PARTICULARS

VEHICLE PARTICULARS

Vehicle registration number
Year of first registration
Gross vehicle mass
Engin number
Chassis number
Manufacture
Passengers
Type of vehicle

CL55040
2015
3340
2TR9016395
ANTSX22P4G7922359
TOYOTA
15
Combi / Microbus / Minibus
Combi / Microbus / Minibus

Vehicle registration number
Year of first registration
Gross vehicle mass
Engin number
Chassis number
Manufacture
Passengers
Type of vehicle

OPERATING LICENSE PARTICULARS

OPERATING LICENSE PARTICULARS

Cross border permit
Valid from
Valid to

No
2015/11/25
Indefinite

Cross border permit
Valid from
Valid until

This document authorises and is restricted to the conveyance as set out in the following description:

This document authorises and is restricted to the conveyance as set out in the following description:

Date

ANNEXURE 1

DEPARTMENT OF TRANSPORT
AND PUBLIC WORKS

Secretary

2015-11-25

FOR THE FILE

B. JOHNSON

Board :

PRE: WESTERN CAPE

PUBLIC ROAD TRANSPORT

FOR THE FILE

OLB 502370/10

Operating license no. 2015/11/25 Indefinite

Validity from until

Holder RHOZE LOUIS L

Registration no. CL55040

Type of vehicle 3

Passengers 15

Cut along this line.

BB 8349320 EL

Z 579

ISSUED WITHOUT ANY ALTERATIONS OR ERASURES

UITGEREIK SONDER ENIGE VERANDERINGS OF UITKRAPPINGS

ANNEXURE 1

ANNEXURE 1

Issued in conjunction with the following Public Operating License number:

Issued in conjunction with the following Public Operating License number:

OLB 502370/10

This Operating License authorises and is restricted to conveyance as set out in the following description:

This Operating License authorises and is restricted to the conveyance as set out in the following description:

The conveyance of taxi passengers.

667 - Stellenbosch - Pniel

From taxi rank at Blom Street Stellenbosch right into Alexander Street left into Bird Street right into Merriman Ave left into Cluver Road right into Nuwe Helshoogte Road till Die Werf in Pniel and return to the busenass section and surrounded suburbs excluded Cloetesville, Idasvallei and Kayamandi subject to the following conditions 1. No passengers may be pick-up with the forward journey at Simonsberg Road intersection and with the return journey before the Simonberg Road with the exception of Stellenbosch Hospital on their way to Pniel 2. Pensioner days may passengers be drop of at Khaler Street at the NG Church Centre.

668 - Stellenbosch - Kylemore

From taxi rank at Blom Street Stellenbosch right into Alexander Street left into Bird Street right into Merriman Ave left into Cluver Road right into Nuwe Helshoogte Road till turn off right into Kylemore suburb and return to Stellenbosch business section and surrounded suburbs namely Paradyskloof, Onder Papagaalberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial area and Devonalle Industrial area excluded Cloetesville, Idasvallei and Kayamndi subject to the following conditions 1. Passengers may only be pick-up Blom Street taxi rank with exception of passengers at Stellenbosch railway station 2. Passengers must be pick-up at all times from shown areas excepted between 19:00 and 09:00 and only if it's a legal parking.

3. No passengers may be pick-up with the forward journey at Simonsberg Road intersection and with the return journey before the Simonberg Road with the exception of Stellenbosch Hospital on their way to Kylemore. 4. Pensioner days may passengers be drop of at Khaler Street at the NG Church Centre.

Definition

The National Land Transport Act (Act no.5 of 2009) contains the following definition of a "minibus-taxi type service" means an unscheduled public transport service operated on a specific route or routes, or where applicable, within a particular area, by means of a motor car, minibus or midibus.

The following conditions must be imposed on this operating licence authorising minibus taxi services in terms of section 57(5) of the NLTA:

a) That the vehicle linked to the operating licence, whilst in a public transport facility is operated in accordance with the management practices

Secretary/Chairperson :

[Handwritten signature]

vervolg/continue

20-11-19

ANNEXURE 1

ANNEXURE 1

Issued in conjunction with the following Public Operating License number:

Issued in conjunction with the following Public Operating License number:

OLB 520239/4

This Operating License authorises and is restricted to the conveyance as set out in the following description:

This Operating License authorises and is restricted to the conveyance as set out in the following description:

The conveyance of taxi passengers.

670 Stellenbosch - Jamestown

From taxi rank at Blom Street Stellenbosch left into Alexander Street left into R44 left into Paradyskloof Road and return left into R44 left into Webervallei Road Jamestown and return as follow right into R44 right into Alexander Street right till Blom Street taxi rank and surrounded suburbs namely Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial area and Devonalle Industrial area excluded Cloetesville, Idasvallei and Kayandi subject to the following conditions 1. Passengers may only be pick-up Blom Street taxi rank with exception of passengers at Stellenbosch railway station

2. Passengers must be pick-up at all times from shown areas excepted between 19:00 and 09:00 and only if it's a legal parking. 3. Passengers can be pick-up between Jamestown and "Die Boord" on the forward and return journey.

671 Stellenbosch - Jamestown

From taxi rank at Blom Street Stellenbosch right into Mark Street right into Dorp Street left into R44 left into Webervallei Road Jamestown and return as follow right into R44 right into Dorp Street left into Mark Street till Blom Street taxi rank Stellenbosch and surrounded suburbs namely Paradyskloof, Onder Papagaaiberg, Die Boord, Dalsig, Krigeville, Karindal, Unie Park, Simonswyk, Plakenburg Industrial area and Devonalle Industrial area excluded Cloetesville, Idasvallei and Kayandi subject to the following conditions 1. Passengers may only be pick-up Blom Street taxi rank with exception of passengers at Stellenbosch railway station

2. Passengers must be pick-up at all times from shown areas excepted between 19:00 and 09:00 and only if it's a legal parking. 3. Passengers can be pick-up between Jamestown and "Die Boord" on the forward and return journey.

Definition

The National Land Transport Act (Act no.5 of 2009) contains the following definition of a "minibus-taxi type service" means an unscheduled public transport service operated on a specific route or routes, or where applicable, within a particular area, by means of a motor car, minibus or midibus.

The following conditions are imposed on this minibus-taxi service operating licence in terms of section 57(1) of the NLTA:

Secretary/Chairperson :

S. NYEKO

vervolg/continue

FOR THE FILE

2016-11-11

PROVINCIAL REGULATORY ENTITY WESTERN CAPE

RCP 5

TV5/6

Republic of South Africa
DEPARTMENT OF TRANSPORT

Republiek van Suid-Afrika
DEPARTMENT OF TRANSPORT

OPERATING LICENSE

Issued in terms of and subject to the provisions of the National Land Transport Transition Act, 2000 (Act 22 of 2000).

OPERATING LICENSE

Issued in terms of and subject to the provisions of the National Land Transport Transition Act, 2000 (Act 22 of 2000).

OPERATING LICENSE HOLDER

Operating License number
Application number
ID-number
Name
Address

OLB 507943/6
R322567
880139107129
DE VRIES WERNANT ANNE MA
23 LAKEN STREET
THORNTONVILLE
JHELIENHOUT
7600

OPERATING LICENSE HOLDER

Operating License number
Application number
ID-number
Name
Address

VEHICLE PARTICULARS

Vehicle registration number
Year of first registration
Gross vehicle mass
Engine number
Chassis number
Manufacture
Passengers
Type of vehicle

OLR6554
2013
VEHICULE
LAWTRANSPORT (C)
2000
23
Type of Vehicle: Motorbus
Category: Motorbus

VEHICLE PARTICULARS

Vehicle registration number
Year of first registration
Gross vehicle mass
Engine number
Chassis number
Manufacture
Passengers
Type of vehicle

OPERATING LICENSE PARTICULARS

Cross border permit
Valid from
Valid to

Yes
2015/11/30
Indefinite

OPERATING LICENSE PARTICULARS

Cross border permit
Valid from
Valid until

This document authorises and is restricted to the conveyance as set out in the following description:

This document authorises and is restricted to the conveyance as set out in the following description:

ANNEXURE 1

Date
DEPARTMENT OF TRANSPORT
AND PUBLIC WORKS
2015-11-30
PROVINCIAL REGULATORY ENTITY

Secretary
FOR THE FILE
Board :

Lizette Wilmat
Lizette Wilmat

PRE: WESTERN CAPE

PUBLIC ROAD TRANSPORT
OLB 507943/6
Operating License no.
2015/11/30 Indefinite
from until
DE VRIES WERNANT ANNE MA
R322567
880139107129
3
Type of Vehicle
23

Cut along this line.

BC 7723023 TC
Z 579

ISSUED WITHOUT ANY ALTERATIONS OR ERASURES

UITGEEK SONDER ENIGE VERANDERINGS OF UITKRAPPINGS

Print Work, No. 29/38

TV 3/8

OORSPRONKLIK/ORIGINAL

Hierdie vorm verleen geen magtiging nie en is slegs 'n afskrif van die oorspronklike padvervoerpermit.
This form does not convey any authority and is only a copy of the original road carrier permit.

REPUBLIEK VAN SUID-AFRIKA
DEPARTEMENT VAN VERVOER



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF TRANSPORT

TYDELIKE PADVERVOERPERMIT - TEMPORARY ROAD CARRIER PERMIT

Uitgereik kragtens en onderworpe aan die bepalings van die Wet op Padvervoer, 1977 (Wet 74 van 1977).

Issued in terms of and subject to the provisions of the Road Transportation Act, 1977 (Act 74 of 1977).

Sonder veranderings of uitkrappings uitgereik.

Issued without alteration or erasure.

P539
Persone/Persons

P 311663

Gelde:
Fees: R 1-00

Kwitansie
Receipt 598600

Datumstempel
Date stamp
1989-06-26

Tyd uitgereik
Time issued

A. Besonderhede van houer van permit:
Particulars of holder of permit:

Naam
Name Marthus Mont

4 Davidse Str.
Cloesville
Delftshoch

B. GELDIGHEIDSDUUR/PERIOD OF VALIDITY

Hierdie permit is geldig vanaf
This permit is valid from 29/06/86 tot 29/07/89

C. MAGTIGING/AUTHORITY

Onderworpe aan die voorwaardes wat in hierdie permit of enige aanvullende dokument wat as bylae tot hierdie permit uitgereik is, vervat is, verleen hierdie permit magtiging vir die vervoer van:
Subject to the conditions contained in this permit or in any supplementary document issued as an annexure to this permit, this permit authorises the conveyance of:

2000 per aangehegte bylae.

D. Tydtabel waarvolgens vervoer wat in C gemagtig word, onderneem moet word
Time-table according to which the conveyance authorised under C must be undertaken

E. Vergoeding waarteen vervoer wat in C gemagtig word, onderneem moet word
Reward at which the conveyance authorised in C must be undertaken

F. MOTORVOERTUIG WAARMEE DIE VERVOER WAT IN C GEMAGTIG WORD, ONDERNEEM MOET WORD:
MOTOR VEHICLE WITH WHICH THE CONVEYANCE AUTHORISED UNDER C MUST BE UNDERTAKEN:

Registrasie No.
Registration No. CL 5734

Fabrikkat
Make Toyota

Enjin No.
Engine No. /

Onderstel No.
Chassis No. /

Stplekruimte
Seating capacity voertien

Soort voertuig
Type of vehicle minibus

Jaar van vervaardiging
Year of make 1989

Bruto voertuigmassa
Gross vehicle mass /

Terra
Tare /

Sekretaris/Secretary

BYLAE A/3

UITGEREIK IN SAMEHANG MET OPENBARE PADVERVOERPERMIT NO P-31163

VOERTUIG NO CL 5734

1. Die vervoer van nie meer as viften nie binne taxi passasiers insluitende die bestuurder en hulle persoonlike bagasie deur middel van die motorvoertuig soos beskryf in die aangehegte Openbare Permit No P-31163 en welke motorvoertuig oorspronklik ontwerp is vir die vervoer van nie meer as viften nie binne passasiers insluitende die bestuurder binne 'n gebied met 'n straal van vif kilometer vanaf Bergsichtersin, Markplaas, Seltkopsch

HIERDIE MAGTIGING IS ONDERWORPE AAN DIE VOLGENDE UITDRUKLIKE VOORWAARDES:

- (a) Die houer van hierdie permit of sy dienaar word verbied om persone by 'n bushalte, wat as sulks gekenmerk op 'n geskeduleerde busroete binne die gemagtigde gebied geleë is, op te laai, te vervoer en af te laai by 'n ander bushalte wat as sulks gekenmerk en op 'n geskeduleerde busroete binne die gemagtigde gebied geleë is.
- (b) Die motorvoertuig, waarop hierdie permit betrekking het, moet gestasioneer wees en vir die gemagtigde vervoer beskikbaar gestel word slegs by die afgebakende huurmotorstaanplek te Bergsichtersin, Markplaas, Seltkopsch
- (c) Die houer van hierdie permit of sy dienaar mag geen persone oplaai of sy besigheid bedryf by 'n ander huurmotorstaanplek nie.
- (d) Die houer van hierdie permit word belet om 'n ooreenkoms aan te gaan waarkragtens enige ander party gemagtig word om vir eie gewin padvervoer te onderneem kragtens magtiging verleen deur hierdie permit.
- (e) Die houer mag nie die padvervoer gemagtig in hierdie permit of 'n doel daarvan staak nie, tensy hy die Raad minstens 30 (dertig) dae voor sodanige staking skriftelik, of per hand of per aangetekende pos, in kennis stel van sy voorneme om sodanige vervoer te staak. Met dien verstande dat die Raad die houer kan magtig om die vervoer binne 'n korter tydperk te staak.

GOEDGEKEUR

nms SEKRETARIS
PLAASLIKE PADVERVOERRAAD
KAAPSTAD



Appendix I: SUMMARY OF TURN IT IN REPORT

brgros007:Dissertation_BRGROS007.pdf

ORIGINALITY REPORT

14%	14%	2%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.gpwonline.co.za Internet Source	3%
2	www.stellenbosch.gov.za Internet Source	2%
3	stellenbosch.gov.za Internet Source	2%
4	hdl.handle.net Internet Source	1%
5	open.uct.ac.za Internet Source	1%
6	ujcontent.uj.ac.za Internet Source	<1%
7	www.vref.se Internet Source	<1%
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