

PROVISION OF PUBLIC TRANSPORT SERVICES USING A COMBINATION OF MINIBUS TAXI TYPE AND STANDARD BRT BUS VEHICLES: THE RUSTENBURG CASE

B MASEKO

Rustenburg Rapid Transit (RF) Pty Ltd, 1 Van Zyl Rustenburg Showgrounds;
Tel: 082 7890640; Email: bmaseko@rtransit.co.za

ABSTRACT

As an outcome of a negotiated public transport contract, the Rustenburg Local Municipality have developed a concept which enables the provision of scheduled public transport combining the Bus Rapid Transit (BRT) buses and the existing minibus taxi industry's services, infrastructure and resources. The paper explores how this unique setup was done, its operational requirements, the cost of implementing such a system and its integration in the overall transport requirements of the Rustenburg Local Municipality.

The Yarona bus service as it is called, which is operated by a private company, Rustenburg Transit (RF) Pty Ltd currently operates eleven (11) routes. The routes are operated by 10 BRT rigid buses and 35 minibus taxi type vehicles. In addition, the service is complemented by 40 minibus taxi type vehicles which provides a service similar to the commonly used taxi type service regulated through area-based licenses.

The paper follows an exploratory method, whereby the Rustenburg Rapid Transit's operation is being analysed using available information from the company's repository and complemented with information gathered from Rustenburg Local Municipality, Minibus taxi operators and literature review.

Researchers and academics describe South Africa's transport systems as being diverse and exceptional, particularly the nuances of the minibus taxi industry. The government has been investigating formalization methods for the minibus taxi industry, despite the industry already being legal to a significant degree with regulations promulgated by provincial legislatures and through the National Land Transport Act, No.5 of 2009 which regulates the issuance of operating licenses. However, challenges persist in ensuring full compliance and achieving a more formalized industry structure which could enjoy the benefits of subsidy from government. The fragmented minibus taxi Industry (MBT) of Rustenburg was not able to participate in the Integrated Public Transport Network of the Rustenburg Local Municipality without being corporatised into an entity to provide the required public transport service. The Chairperson of the Taxi Negotiating Forum (TNF) (S Sebogo, 2023) emphasises that there was a need for the minibus taxi industry to have one voice when negotiating a contract to run the Yarona services.

The Rustenburg Municipality presents a unique case study of the merge between BRT bus services and minibus taxi service offering scheduled services with automated fare collection systems.

1. INTRODUCTION

The Bus Rapid Transit (BRT) system, characterized by dedicated bus lanes, high frequency service, preboarded fare collection, and priority at intersections, has garnered significant attention for its cost-effectiveness and efficiency in urban areas (Institute for Transportation and Development Policy (ITDP, 2016)). As an essential component of contemporary urban mobility, BRT systems have been the subject of extensive research due to their potential to alleviate congestion, enhance sustainability, and improve overall urban transportation.

Numerous studies have investigated the impacts of BRT systems on various facets of urban transportation. For instance, Hidalgo et al. (2019) observed a reduction in travel times and increased ridership following the implementation of a BRT system in Pereria, Colombia. Likewise, Cervero and Arrington (2008) demonstrated that BRT systems contribute to the reduction of greenhouse gas emissions in Mexico City, thereby improving air quality in urban areas.

Additionally, scholarly attention has been directed towards the design and planning considerations crucial for the successful implementation of BRT systems. Levinson et al. (2012) underscored the importance of integrating land use planning with BRT development to optimize the system's effectiveness. Furthermore, (Vuchic 2007) in his research emphasized the significance of proper station design, fleet management, and operational strategies in ensuring the success of BRT systems. The Rustenburg integrated public transport network is conceptualised along what (Vuchic 2007) calls principles of the BRT systems which is fleet management, station designed and operational strategies.

The Rustenburg context of BRT is somewhat different from the rest of the world owing to the Apartheid legacy which subjected certain class of people to live out of the cities. The principles and application of the BRT concept is applied to a certain degree but somewhat modified to suit the spatial development of the City and its transport needs. Therefore, this paper aims to review and explore the potential of using a hybrid system combining minibus taxis with BRT systems via the approach used in the case of Rustenburg, South Africa.

2. PROVISION OF EFFICIENT PUBLIC TRANSPORT

Public transport plays a crucial role in South Africa's transportation landscape, catering to millions of commuters who rely on these services for daily mobility. The industry also faces challenges, with a need to improve efficiency, affordability, and integration. One approach gaining traction is the use of a hybrid system combining minibus taxis, the dominant mode, with the bus industry. This could be in the form of improved traditional buses and or the South African (BRT) concept.

2.1 The Role of the Taxi Industry in the South African Transport Environment

The minibus taxi industry in South Africa plays a crucial role, transporting millions of commuters daily. Statistics South Africa (2020), Household Survey indicates that taxis are the second most used mode of transport, with over 10 million individuals relying on them. However, the industry faces challenges like rising costs and competition from ride-hailing services and bus rapid transit systems. Notably, the taxi industry has emerged as a significant catalyst for black entrepreneurship in South Africa (Mabogo, n.d.).

However, the industry faces significant challenges. Escalating fuel costs, high-interest rates for vehicle financing, and competition from emerging players like e-hailing services and Bus Rapid Transit (BRT) systems put pressure on the industry's sustainability (Dhliwayo & Currie, 2018). Despite these hurdles, minibus taxis remain a preferred mode of transport for many commuters in South Africa. This can be attributed to several factors; The primary one being that Minibus taxis often operate in informal settlements and townships where formal public transport is limited, providing crucial first-and-last-mile connectivity (Dhliwayo & Currie, 2018). Additionally, when compared to private vehicles and, in some cases, e-hailing services, minibus taxis offer a more affordable option for many commuters. Finally, minibus taxis operate on flexible routes and timetables, catering to diverse travel needs, particularly for short trips within neighbourhoods.

Government initiatives, exemplified by the National Taxi Recapitalization Program and various driver and owner incentive schemes, aim to bolster the industry's growth and address operational challenges (Mabogo, n.d.). Additionally, strategic documents supporting an expanded role for public transport underscore the government's commitment to the sector (SABOA News, 2023). Nevertheless, to enhance efficiency, reduce waste, and bolster safety, there remains a pressing need for technological advancements within the industry, as highlighted by the Department of Science and Technology (DST, n.d.) (Arrive Alive, 2014; Walters et al., 2012).

Finally, the impact of COVID-19 on the South African minibus taxi industry, as explored in research by Muthige and Beneke (2022), brought to light the challenges faced by operators during the pandemic. These challenges include repossessions, loss of wages, protests, and business closures, emphasizing the industry's vulnerability to external shocks. This underscores the necessity of resilience-building measures. Thus, the taxi industry in South Africa retains its critical role in the country's transportation network, providing essential services to millions while contending with economic and operational challenges that demand continuous support and innovation.

2.2 Brief Overview of the Rustenburg Local Government (Transport Systems, Economy, and Population)

The Rustenburg Local Municipality (RLM) places significant emphasis on public transport, with its Integrated Transport Network planned to cover 80% of local communities (Parliamentary Monitoring Group (PMG), 2017). The population in Rustenburg is concentrated along a "V"-shaped axis, with the Rustenburg Central Business District situated at the base, flanked by the R510 road corridor to the northeast and the R104-R565 to the northwest. To address the transportation needs of a population where a substantial majority of households lack private cars, the municipality has developed an Integrated Public Transport Network (IPTN) to cover the needs of those heavily relying on public transport (Parliamentary Monitoring Group (PMG), 2017)

The RLM has undertaken the implementation of Yarona, which commenced operations in August 2022. This system was designed to once complete accommodate 200,000 daily commuters, with 80% of residents depending on public transport. The incorporation of the Bus Rapid Transit (BRT) system is considered a pivotal stride towards development, mobility, and transformation in Rustenburg (PMG, 2017).

With regards to the economy, the Rustenburg Local Municipality has strategically invested in its transport infrastructure to enhance public transport service delivery and support key city objectives. Collaboration with various stakeholders, including taxi associations, has

been pivotal to ensure the success of the new transport system. Nevertheless, challenges such as budget constraints and sustainability issues have surfaced, underscoring the imperative for efficient and cost-effective systems in the long term. In essence, the Rustenburg Local Municipality's commitment to public transport and infrastructure development reflects its dedication to fostering mobility and economic growth within the region (PMG, 2017).

2.3 The Role of the Bus Industry (Commuter Service) in the South African Transport Environment

The bus industry holds a crucial position in the South African transport landscape, offering indispensable commuter services to millions reliant on public transport for their daily mobility requirements. It stands as a significant contributor to the economic and social development of the country, facilitating the mobility of learners, workers, and individuals seeking employment or access to vital services, thus playing a pivotal role in nurturing entrepreneurship, particularly within the Black community (University of the Witwatersrand, n.d.).

Comprising state-sponsored public bus and rail commuter services, complemented by privately operated minibus taxis (SABOA 2023), the South African public transport system underscores the importance of the bus industry. The sector actively invests in transport infrastructure to enhance service delivery and align with key city objectives. Collaboration with diverse stakeholders, including taxi associations, is integral to ensure the success of evolving transport systems (SABOA News, 2023).

Despite challenges such as escalating costs, high-interest rates, and competition from emerging players like e-hailing services and Bus Rapid systems, the bus industry retains its status as a preferred mode of transport for many commuters owing to its accessibility and affordability (SABOA News, 2023).

In an integrated transport system, the bus industry in South Africa assumes a pivotal role by providing safe, reliable, and affordable services that are not only attractive to stakeholders but also add value to the overall transportation network. Despite economic and operational challenges, the industry remains a vital component, necessitating sustained support and innovation to continue delivering essential services to millions of people.

In Summation, the taxi industry, BRT systems, and the bus industry each play crucial roles in South Africa's public transport landscape. Despite facing challenges, including competition and economic pressures, these components contribute significantly to mobility, accessibility, and economic development. Continued support, innovation through research, and collaboration between stakeholders and governments are essential for ensuring the efficiency and sustainability of public transport systems in South Africa. Thus, it can be concluded that reviewing the provision of this service holds promise for addressing Rustenburg's transport challenges. Drawing on local insights allows this literature review sets the stage for further research and policy development aimed at enhancing Rustenburg's public transport network.

3. THE RUSTENBURG BUS RAPID TRANSIT (BRT) CONCEPT

The Rustenburg Bus Rapid Transit concept is following the same pattern as that of Johannesburg and Cape Town. It has however been modified to suit the requirements of

the Rustenburg transport needs. The BRT was negotiated between the RLM, the minibus taxi industry and the bus operator. The minibus taxi industry set up a negotiating structure called the Taxi Negotiating Forum – a body representing all affected minibus taxi operators in Rustenburg. The formal negotiations started in 2014 which resulted in the formation of a company in 2015 named Rustenburg Transit (RF) Pty Ltd to operate the BRT services of the Rustenburg Local Municipality.

The Rustenburg Bus Operating Company (Rustenburg Transit) was established as a crucial component of the broader initiative to enhance public transport in Rustenburg and implement a Bus Rapid Transit (BRT) system. The Rustenburg Transit's primary focus revolves around key objectives that underpin its role in the successful operation of the BRT system.

The Rustenburg Transit is tasked with the responsibility of efficiently managing the day-to-day operation of the BRT system, ensuring its smooth functioning and optimal performance. The company reports monthly to the municipality on service rendered and the challenges encountered for an improved system reliability. The system management is one of the pillars of the company in ensuring service reliability and operational efficiencies.

A central goal of the Rustenburg Transit is to deliver public transport services characterized by high quality, affordability, accessibility, and safety, thereby enhancing the overall experience for the community. Customer experience enhancement is monitored by the municipality to keep up the good brand of Yarona in Rustenburg Local Municipality. The Rustenburg Transit is committed to the development of human resources and technical capabilities necessary for the effective operation of the BRT system. This includes training and skill-building initiatives to ensure a proficient workforce. Capacity building is one part of the company pillars to grow Rustenburg workforce.

The difference utilised by Rustenburg Transit is that it does not only concentrate on offering the bus services. It is given the permission to operate, manage and maintain the BRT system. The RLM approach differs from all South African BRT Systems, in that it offers a uniqueness approach of assigning responsibilities to the bus operator. The bus operator manages the control centre, provides station management, automated fare collection and the ITS components. The BOC provides an integrated public transport services enabled by the municipality.

The negotiation process with the minibus taxi industry was essential for the success of the Rustenburg BRT project. The Rustenburg Local Municipality adopted a collaborative approach, recognizing the significance of engaging with the taxi industry constructively (Sabinet, n.d.). Multiple Memoranda of Understanding (MoUs) were signed to facilitate effective participation and create a harmonious relationship between the formal BRT sector and the taxi industry (Parliamentary Monitoring Group, 2017). Incentives and benefits were offered to taxi operators, encouraging their transition into the formal sector (Sabinet, n.d.). Despite challenges, such as resistance from some taxi operators, the municipality continued to foster dialogue and cooperation among all parties, resulting in unified support for the Integrated Public Transport Network (IPTN) and the RRT project (Yarona Bus, 2023).

The Rustenburg BRT concept, driven by the need for improved public transport services, has been a dynamic undertaking shaped by collaborative negotiations with the minibus taxi industry. The project, despite facing challenges, reflects a concerted effort to create a sustainable, efficient, and inclusive urban transportation system in Rustenburg.

3.1 Service Operations

The bus service operations started in August 2022 after removing close to 260 minibus taxis to make way for the bus operations. The startup (interim) phase was operated with only 10 leased to buy buses with an interim management structure comprised of technical expertise.

The Rustenburg Transit offers three distinct vehicle operations to cover the needs of the communities of Rustenburg. The three service types are briefly explained below.

3.1.1 Bus Service Type

The bus services are operated in the dedicated lanes with BRT standard buses, having light APTM systems for route monitoring, vehicle tracking and recording of operated kilometres. There are dedicated stations for buses which are currently not in operation still to be completed and be ready for operation in the near future. The buses are equipped with automated fare collection.

3.1.2 Minibus Taxi (MBT) Services

The RLM's service plan was aimed at covering at least 80% of the Rustenburg community but owing the lack of bus availability and capital required to purchase the buses an alternative had to be devised. The negotiation parties, RLM and TNF reached an agreement that the bus services should be complemented by a formalised minibus taxi (MBT) operation. This operation will mimic the bus services in that it will operate in the dedicated lanes, be scheduled and be part of the municipal's operational plan.

The minibus vehicles used in this type of services were branded with Yarona brand which is the Rustenburg BRT Management brand and be equipped with AFC equipment, monitored through life tracking devices. The drivers for these services came from the affected taxi drivers who were to lose their employment due to the introduction of the BRT services. The drivers were trained and offered employment contracts for a period of a year with the aim to be trained as bus drivers when new buses are sourced and the MBT replaced by buses.

The branded MBT were issued with operating licenses and registered under the company's name Rustenburg Transit (RF) Pty Ltd. The company manages and maintain the fleet of taxis under the RLM's Yarona service contract. The branded MBT has proven to be a cornerstone of operational success of Rustenburg Transit with a provision of transport for an average of 3000 commuters a day.

3.1.3 Mop Up Services

The Mop Up Services were conceptualised to deal with vehicles which were not part of the service plan but could still render an interim service while waiting for full-service implementation. The Mop Up Services were only to last for six months. The taxi owners could not give away the vehicles and lose income while waiting for the municipality to complete its taxi removal plan and compensation scheme. The TNF and RLM reached an agreement that the Rustenburg Transit will through the TFN establish a company to operate the Mop Up Services until such time when the required buses are purchased.

The Mop Up Services are operated by a company established by the TFN called TNF9 Pty Ltd, a value chain company established by affected taxi operators. The company is managed by the Rustenburg Rapid Pty Ltd (bus operating company). The owners of the

vehicles belonging to TFN9 leased back the vehicles from the Rustenburg Transit at a fee to operate a normal taxi type operations in the BRT affected routes. These services are formal in nature, having operating licenses under the affected owner's name. The vehicles belong to the Rustenburg Rapid (RF) Pty Ltd.

The operators of the Mop Up services are receiving compensation income for their affectedness in the BRT and are considered shareholders in accordance with the agreed shareholding structure. The taxi owners pay R 6000 monthly to lease back the vehicles which used to be their vehicles under the taxi association they belong to, the rest of the money made through this operations goes to the operator.

The Mop Up services though formal through operating licenses it remains similar to the common taxi type services. The service is monitored through vehicle tracking and all vehicles are insured by the Rustenburg Transit. The Mop Up services are not equipped with AFC and are not branded with the Yarona brand since they are temporary in nature.

Further RLM together with the TNF reached an agreement on a passenger incentive model for augmenting the compensation offered to the minibus taxi operators. The Rustenburg Transit has incorporated the Patronage Incentive model as a fundamental component of its operational framework to ensure the overall success of the Bus Rapid Transit (BRT) system implementation in the province. A baseline Passenger Incentive Model was established by analysing statistical data representing individuals expressing a willingness to utilize the Yarona bus services. The data sources encompassed the monitoring of Yarona Bus card taps and Minibus card tap monitoring.

The instituted incentives comprised the provision of discounts to passengers during the initial six (6) months of operation up to the first 36 months of operation. Additionally, efforts were made to secure the support of key stakeholders, such as Minibus operators, by proposing vehicle leasing arrangements. In this context, stakeholders were enticed with the promise of generating profits, as the Rustenburg Transit would manage the fleet of vehicles on their behalf. This strategic collaboration ensures a mutually profitable outcome for all involved parties.

3.2 Station Management

The Rustenburg Transit is contracted to also look after the BTT stations and depot management. There are currently four key interim stations which are operational. Though the operational stations are temporarily in nature, but they provide a crucial role in the operations of the bus and MBT services. The stations have container tickets sale kiosk, dedicated bus ramp for loading and offloading of commuters.

The stations are resourced with cashiers, tickets sellers and station ambassadors. There are also traffic regulators employed by the Rustenburg Transit to fulfil its operational objectives.

3.3 ITS Management

The Rustenburg Transit under its contract is expected to provide and manage the services of automated collection fares, and the automated public transport management systems. The company has contracted with service providers responsible for AFC and APTMS. The municipality provides an oversight role.

The Rustenburg Transit is responsible for contracting and maintaining ITS services on behalf of the municipality. The municipality play an oversight role ensuring that the services standard is upheld and adhered to by the Rustenburg Transit.

4. RELATIONSHIP WITH THE MUNICIPALITY

The partnership between the Rustenburg Local Municipality and the Rustenburg Transit is characterized by mutual trust, collaboration, and shared objectives aimed at enhancing public transport experience in Rustenburg. Some noteworthy aspects of the collaborative efforts include the following key milestones:

Memorandums of Understanding (MoUs): Both entities have entered into multiple MoUs, delineating their respective roles and responsibilities. These agreements serve as a foundation for effective communication and cooperation, fostering a transparent and well-structured working relationship.

Equity Ownership: The establishment of the Rustenburg Transit was designed to incorporate affected operators through equity ownership. This approach allows taxi operators to maintain their livelihoods within the transport business, ensuring a fair and inclusive transition into the formalized BRT system.

Contract Negotiations: The Rustenburg Transit and the municipality engaged in contract negotiations, establishing clear expectations and guidelines for their joint venture. This negotiated contract forms the basis for their collaborative efforts in the implementation and operation of the BRT system.

Financial Support: The municipality has provided financial assistance to the Rustenburg Transit, contributing to the purchase of buses as initial fleet. This support underscores the commitment of the municipality to the success of the Rustenburg Transit and the overall improvement of public transport services.

Continuous Engagement: Actively fostering ongoing communication, the municipality engages with the Rustenburg Transit to discuss challenges, share best practices, and collectively plan for the future of public transport in Rustenburg. This continuous engagement ensures adaptability and responsiveness to evolving needs and circumstances.

Further to the above-mentioned collaboratives, The Rustenburg Transit, maintains a robust relationship with the municipality, aligning their efforts to enhance public transport in Rustenburg. Key facets of their partnership are visible in the following aspects:

Shared Objectives: The RLM actively supports the Rustenburg Transit's mission to formalize the minibus taxi industry, enhance the quality of transport services, and foster equitable socioeconomic development in Rustenburg.

Technical Expertise: Collaboration extends to the sharing of technical expertise and knowledge. The RLM assists the Rustenburg Transit in developing operational procedures, maintenance protocols, and training programs. This exchange ensures that the Rustenburg Transit benefits from the experience and insights of the government department, enhancing the overall operational efficiency.

Regulatory Compliance: The Rustenburg Transit and the RLM work closely to adhere to regulatory frameworks governing public transport. This collaborative effort ensures strict compliance, fostering the highest levels of safety and customer satisfaction within the BRT system.

Coordinated Efforts: The Rustenburg Transit and the RLM coordinate their activities to minimize duplication of efforts and streamline decision-making processes. This coordinated approach contributes to the efficiency of the BRT system's implementation and operation.

The financing of the operation was sourced from the Rustenburg Local Municipality, employing a cost recovery model. This model hinges on the principle that operational expenses are funded in correspondence with the resources essential for delivering transportation services to the community.

Diversification of funding sources is a critical consideration in the realm of public transport financing. Local municipalities, in particular, must explore various funding models to ensure sustainability and resilience in the face of dynamic economic conditions. Relying solely on a single source of funding, such as municipal funds, may pose challenges in meeting the evolving needs of a growing and dynamic transport system.

Diversification offers several advantages, including reduced financial risk, increased financial flexibility, and the ability to tap into additional revenue streams. Common avenues for diversification include public-private partnerships, grants, subsidies, and innovative financing mechanisms. By embracing a diverse funding portfolio, local municipalities can enhance their financial stability and better adapt to fluctuations in economic circumstances, ultimately contributing to the sustained success of public transport initiatives within their jurisdictions.

5. CONCLUSION

There are noteworthy features of the Rustenburg Transit as discussed in the body of the paper. These features make the Rustenburg BRT a model worthy to be followed though some refinements are still needed for it to be the South African BRT model. The features worth nothing are listed below with brief explanation to give context.

Formation by a Taxi Association: The active involvement of the taxi associations in the establishment of the Rustenburg Transit signifies the engagement of the minibus taxi industry in the BRT project. This collaborative approach enhances the inclusivity of the initiative. The taxi industry expressed support and ownership of the initiative giving impetus for the introduction of services even with the smallest available fleet of buses. The inclusion of the taxi industry at all levels of the Rustenburg Transit fosters a sense of ownership and responsibility. This engagement ensures that the perspectives and expertise of the taxi industry contribute to the effective management and operation of the BRT system.

Commitment to Long-Term Operation: The Rustenburg Transit demonstrates its commitment to the sustainability of the BRT system by pledging to operate it for the next 12 years. This long-term vision reflects dedication to the ongoing success and impact of the project.

The establishment and functioning of the Rustenburg Transit exemplify the collaborative spirit inherent in the Rustenburg BRT project. By bringing together diverse stakeholders, including the taxi industry, the Rustenburg Transit plays a pivotal role in realizing the goal of delivering improved public transport services to the Rustenburg community.

This robust relationship between the Rustenburg Local Municipality and the Rustenburg Transit has culminated in the successful launch of the Yarona BRT system, delivering enhanced public transport services to the community. Their collaboration remains instrumental in achieving the shared goal of transforming the transport landscape in Rustenburg, benefiting both commuters and the broader community.

6. REFERENCES

Arrive Alive. 2024. Bus Safety/Truck Safety. Arrive Alive: Available at: <https://www.arrivealive.mobi/safe-driving-techniques>

Bergstedt, R. 2022. An investigation of the (in)flexibility of the minibus-taxi operating license system: the case of Stellenbosch.

Cervero, R & Arrington, GB. 2008. Vehicle Emissions and Air Quality in Bus Rapid Transit Corridors in Mexico City. Transportation Research Part D: Transport and Environment.

Dhliwayo, H & Currie, I. 2018. Minibus taxi commuters' perceptions of safety and security in Cape Town, South Africa. *Journal of Transport & Safety*, 9(6):742-755.

Hidalgo, D, Graftieaux, P, Muñoz, JC et al. 2019. Impact assessment of a bus rapid transit system: The case of Pereira, Colombia. Transportation Research Part A: Policy and Practice.

Institute for Transportation and Development Policy. 2021. The role of BRT in post-pandemic South Africa. Available at: <https://africa.itdp.org/the-role-of-brt-in-post-pandemic-south-africa/>.

Levinson, D, Xie, F, Zhu, S et al. 2012. Designing bus rapid transit corridors. *Journal of Transport Geography*.

Mabogo, M (n.d.). SA's taxi industry is not a profitable business anymore and needs tech to save it. Bizcommunity.

Mariswe. (n.d.). Design & implementation of a bus rapid transit (BRT) for the Rustenburg Local Municipality in the North-West Province. Available at: <https://www.mariswe.com/project/planning-design-and-construction-supervision-of-the-rustenburg-rapid-transport/>.

Muthige, MM & Beneke, JD. 2022. The south africa minibus taxi industry and its operators: Working conditions during Covid-19. Southern African Transport Conference.

Parliamentary Monitoring Group (PMG). 2017. Bus Rapid Transport (BRT): Progress, challenges and risks faced by cities day 1. Available at: <https://pmg.org.za/>.

ResearchGate (n.d.). An investigation into the methodology of mini-bus taxi data collection... Available at: https://www.researchgate.net/publication/277581131_Research_on_the_Coordinated_Design_of_Bus_and_Taxi_Station.

Saboa News. Focus on Transport and Logistics. 2023. Available at: <https://twitter.com/FOCUSmaqSA/status/1513390149534691328>.

Sabinet (n.d.). Available at: <https://journals.co.za/>.

Seed Working Paper No. 9 (n.d.) International Labour Organization: Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/instructionalmaterial/wcms_ipec_pub_27555.pdf

South African Government. 2009. Government Gazette 2009, No. 32110, Land Transport Act. Government Printer.

Statistics South Africa. 2020. The 2020 Household Survey. [Report]. Pretoria: Available at: <http://www.statssa.gov.za/publications/P0318/GHS%202020%20Presentation%202-Dec-21.pdf>.

The South Africa minibus taxi industry and its... (n.d.) University of Pretoria: Available at: <https://www.researchgate.net/publication/342736188>.

United Nations (n.d.). Available at: <https://sdgs.un.org/topics/sustainable-transport>.

University of the Witwatersrand. (n.d.). Industrial Policy Implementation: The Case of the Bus Industry in South Africa. University of the Witwatersrand: Available at: <https://wiredspace.wits.ac.za/bitstreams/3ec40dc2-7522-45e0-be84-def1907b9ca7/download>.

Vuchic, VR. 2007. Urban Transit Systems and Technology. John Wiley & Sons.