ADVANCING PUBLIC TRANSPORT

POLICY BRIEF

DESCRIPTION, ROLES, AND FUNCTIONS OF PARATRANSIT

MAY | 2024

INTRODUCTION

A focus on mobility in the Global South

Looking at mobility and transport in the Global South, two aspects are striking.

First, both the population and urbanisation are growing at a rapid pace. According to a World Bank Report[1], the urban population in African cities is projected to double in 25 years, from 472 million people in 2017 to nearly 1 billion in 2042. According to the Asian Development Bank[2], "Asia is moving into an era of unprecedented urbanization", with 55% of the Asian population projected to live in urban areas by 2030.

Second, there is an inherent correlation between urbanisation and transport demand; as urbanisation increases, the need to access economic, social, leisure, and other opportunities increases to a relatively greater extent. Transport demand stems from this need to access these opportunities - transport is commonly defined as the movement of people to achieve a specific trip purpose derived predominantly from a land-use activity and/or a daily programme of activities[3]. Transport demand is influenced by a multitude of interwoven factors, including, but not limited to, trip purpose, time of day, proximity of desired destination, land-use attributes (leasable area, mix, proximity, and density), travel distance and duration, value of time, affordability, and safety and security factors.

Consequently, the establishment of integrated, collective, and shared transport systems that are efficient, reliable, safe, and affordable is critical to enabling cities in the Global South to function well, supporting their growth, and helping them become resilient amidst rapid urbanisation.

Over the past two decades, progressive attempts to enhance public transport in Global South cities have heavily focused on the introduction of bus rapid transit (BRT) and high-capacity rail projects. Due to significant urban sprawl in the Global South

1 (Lall, et al., 2017)
2 Cities and Urbanization in Asia: 12 Things to Know | Asian Development Bank (adb.org)
3 Barring recreational trips that have no fixed destination, this definition largely describes the purpose of transport.

and limited public budgets, the provision of regular, scheduled, reliable, and quality public transport (such as in the Global North) to all citizens has been limited.

While cities like Johannesburg and Cape Town have had generally successful BRT and rail rollouts, their experiences highlighted the critical need for effective integration of the paratransit sector in similar future projects. Mobility solutions should include services that are part of the collective family of public transport solutions, referred to here as "paratransit". There is a need to integrate paratransit into the evolving overall public transport system, giving it a new role and tweaking and transforming it to enable better synergies with the emerging high-capacity systems. In this way, the potential social impacts and economic displacement of people who are engaged in the provision of paratransit services can be mitigated and better managed.

This approach is in line with a wider ongoing discussion among professionals, academics, consultants, authorities, and funding institutions about paratransit's integral role in future mobility solutions in the Global South. It is critical to enhance our holistic understanding of this sector in order to effectively analyse its strengths and weaknesses. This should aid in the development of public policies focused on transforming the sector, in synergy with the development of mass transit systems, to prepare for the mobility of tomorrow.

The purpose of this policy brief is to provide a clearer picture of the sector by presenting the characteristics, roles, and functions of paratransit in the Global South mobility system. The paper looks at a way of describing the sector and its scale and highlights the functions that paratransit services can fulfil as a major mobility provider.

This paper is complemented by another policy brief that looks at the critical role of data collection, as well as a knowledge brief that examines the business models of different paratransit services.

A BRIEF OVERVIEW OF THE PARATRANSIT SECTOR

THE MANY TYPES AND NAMES OF PARATRANSIT VEHICLES

Figure 1 – Paratransit vehicles in Africa

Photo credits: © Alex Proimos, JalilArfaoui, Leasmhar, Adam Cohn, Wael.kenawey, Anton Crone, Maarten Wasmoeth, Ninara, Zariott, NanaYawBotar, SAgbley, Mael Sicourmat, Hendrik Terbeck, Matti Blume

Different vehicles are used to deliver services in the Global South, including the following:

- two-wheelers, three-wheelers, & motorcycles
- small vehicles, cars, minibuses, & pickup trucks
- high-capacity buses and coaches.

Different names are used in different parts of the world for these services. In Latin America, such services are commonly referred to as buseta, carry, cheto, chimeco, colectivo, combi/kombi, concho, custer, ejecutivo, jeeps, jitneys, microbuses, midi-buses, minibuses, motor-taxis, shared taxis, omnibuses, pesero, puesto, (taxi) trufi or taxi de ruta fija, and vans.

In Africa, services are commonly referred to as:

- Trotro in Ghana
- Danfo in Nigeria
- Minibus taxis (MBTs) in South Africa
- Cars rapide in Senegal
- Chapas in Maputo
- Matatu in Kenya
- Podapoda in Freetown
- Dala Dala in Tanzania
- Taxis blancs in Morocco.

Figure 2 – Paratransit names in Africa.
Source: The World Bank

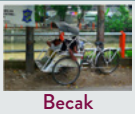
In the Middle East, services are commonly referred to as:

- Service in Lebanon, Jordan, & Palestine
- Dolmus in Turkey
- Sherut in Israel.

In Asia, services are commonly referred to as:

- Jeepneys and tricycles in the Philippines
- Angkots in Indonesia
- Tuk Tuk in Thaliand
- Auto-rickshaws/autos, (shared) e-rickshaws, motos (motorcycle taxis), tempos, etc. in India.

Figure 3 – Different types of paratransit vehicles in Asia.
Source: Paratransit in Asia: Scalable Solutions to Reform, Modernise and Integrate, AFD, CODATU, ESPALIA

Type of vehicles	Motrocycle (1-2 pax)	Tricycle (1-2 pax)		Motorised Tricycle (2-8 pax)	Car (4-8 pax)	Van (c. 10 pax)		Minibus (15-25 pax)
Cambodia	 Motodop	 Cyclo	 Remark	 Bajaj				
Cambodia		 Cycle-Rickshaw	 Auto-Rickshaw	 Vikram Tempo	 Force Cruiser	 Tata Magic	 Mahinda Glo	 Maruti Omni
Indonesia	 Ojek	 Becak	 Betor	 Bemo		 Mikrolet		 Angkot
Philippines		 Pedicab	 Tricycle		 Van UV Express			 Jeepney
Vietnam	 Xe Om							

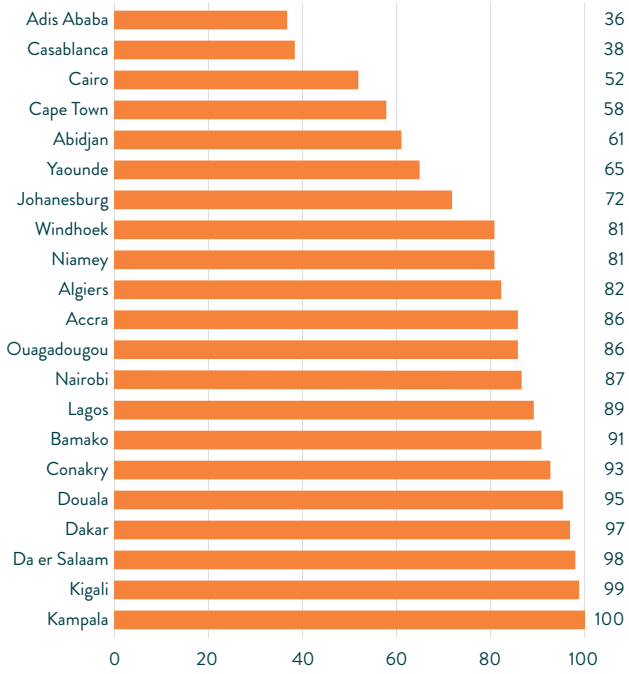
HOW IMPORTANT IS PARATRANSIT IN THE GLOBAL SOUTH MOBILITY SYSTEM?

While paratransit services vary in terms of vehicle types and names, **they are the dominant mobility provider in the collective family of public transport solutions that cater to the majority of the population in the Global South.**

To get a rough idea of the significance of the paratransit sector, it is relevant to look at its modal share.

In African cities like Kigali and Kampala, paratransit is practically the only public transport provider, making up almost 100% of the public transport market share. Figure 4[4] shows the paratransit market share for selected cities in Africa.

Figure 4 – Paratransit modal share in African cities (%)



In both Latin America and Africa, paratransit services are estimated to account for over 50% of public transport trips, on average.

WHAT IS THE ENVIRONMENTAL FOOTPRINT OF PARATRANSIT?

Assessing the environmental impact of the sector is vital, especially in order to move towards a lower-carbon future.

The number and types of vehicles and associated daily vehicular kilometres involved in delivering a transport service have a direct impact on total vehicle emissions. A recent World Bank report titled *Reality Checks: Lessons from 25 Policies Advancing a Low-Carbon Future* showcases a paratransit transformation pilot project in Cape Town. The report highlighted the following results from the project:

"The Cape Town pilot shows that it is possible to achieve better services and reduce fuel consumption and emissions through improved business practices, operations, and labour and vehicle efficiency at negligible cost and without losing jobs. This is a triple win: for users, operators, and society. This small-scale pilot showed impressive results in terms of service quality, reliability, and emissions. First, it rationalised the fleet size from 78 minibuses to 40 well-maintained vehicles (including three spares) while expanding service coverage from three to five licenced routes. Second, it improved employment conditions for drivers, moving from an average work pattern of 12-hour days in a 7-day week to 7.5-hour days with scheduled breaks and one day off in a 7-day cycle. Third, it reduced fuel consumption and associated emissions by 45 percent by transporting the same volume of passengers with fewer vehicle kilometres. A before-and-after passenger survey showed improvements in overall passenger satisfaction, waiting times, pick-up/drop-off locations, fares, crew conduct, vehicle comfort, road safety, and personal security."

ROLES AND FUNCTIONS OF PARATRANSIT SERVICES

The paratransit sector provides different types of transport services. The following case studies illustrate examples of the roles and functions of different paratransit services.

MINIBUSES IN ISTANBUL AS A FEEDER TRANSPORT SERVICE, TURKEY

Istanbul benefits from a highly developed public transport system with a large variety of transport options. The network is composed of 303 kilometres (km) of rail, 6,350 public and private buses, 5,710 minibuses, 66,000 shuttles, 322 bus taxis, 325 ferries and private boats, and 18,392 taxis.

According to recent mobility surveys, an average 12 million trips are done daily, with 3.5 million on the rail network and 8.2 million on other land services. Among the latter, 1.7 million use private and shared taxis, 1.2 million minibuses, 0.8 million shuttles, and 4.5 million regular buses.

Paratransit services play a critical role in the overall

4 Source information from "Paratransit in African Cities Operations, Regulation and Reform Edited By Roger Behrens; Dorothy McCormick and David Mfinanga

transport system. They are used as a feeder system for the main mass transit public transport systems. Paratransit serves low-density areas where the urban fabric does not allow traditional large vehicles to move around. In addition to services that are open to the public, specific paratransit services have been put in place for schools and companies. Such services are not regulated by the authorities.

Minibus taxis are integrated into the overall transit fare system in Istanbul. Moreover, discussions are ongoing to upgrade the rolling stock to low-floor and green energy vehicles.

A COMBINED TRANSPORT SYSTEM OF BUSES AND PARATRANSIT: THE EXAMPLE OF VISAKHAPATNAM, INDIA

Indian cities currently have high rates of public transport usage. This needs to be sustained and further enhanced to meet developmental goals. Public transport is provided through a combination of formal and informal systems.

Paratransit services consist of services across urban, suburban, and rural areas and are the most prevalent form of shared transport services across India. Approx. 7 million three-wheelers across India make around 210 million trips daily, i.e. 3 times the total trips by buses and 9 times the trips made by rail. Three-wheelers can be divided into the following categories:

- Small auto-rickshaws: Used for point-to-point (P2P) services. Operate on contract carriage permits.
- Big auto-rickshaws: Used for P2P services. Operate on contract carriage permits. Observed to operate shared services occasionally.
- Tempos: Used for shared transport/fixed route services. Routes predefined by the Road Transport Authority (RTA).

In Visakhapatnam, which has a population of 1.7 million, the transport network is composed of buses and paratransit services, which operate on 34% of the total road network and 76% of arterials and sub-arterials. Buses have wider network coverage and longer hours of operation. Paratransit operates on high-demand corridors during peak hours and has higher occupancy.

Data was collected from 92 bus routes and 141 paratransit operators. The subsequent analysis indicated that bus and paratransit services play varying roles in catering to users' needs. The city bus system operates with a service motive, i.e. to maximise citizens' access to mobility. It operates 16 hours a day, with fixed routes and scheduled services. Paratransit operates on an on-demand basis with a profit motive, only on high-demand corridors and during peak hours.

These case studies illustrate the many roles and functions of paratransit services in the mobility sector. Some of the major types of services, customer segments, and areas of coverage are summarised in Table 1.

Table 1 – Overview of the paratransit sector

A structured/ hierarchical system Composed of high-capacity and -frequency corridors and secondary itineraries	Paratransit may play the role of: - High-capacity/-frequency corridors - a direct or local service - Distributor and/or feeder services to more mass transit modes
Types of services This ranges from route base and frequency base to flexible services	Paratransit may play the role of: - A scheduled fixed route base service - An on-demand service, combining both itineraries and stops - A transport solution, along with on-demand door-to-door service provision
Segments of the population	- General population - Women only - Schoolchildren and students - Private company employees for home-work travel
Geography and scale of mobility	- Services in small, medium, and large cities - Services in central and high-density areas, suburbs, & rural areas - Urban and interurban services
Goods transport	- Services that carry commodities, either simultaneously with people or as a complementary service (off-peak periods for people)

GOOD DESCRIPTION LEADS TO GOOD RECOGNITION: AN UMBRELLA DESCRIPTION OF THE SECTOR

How should one look at the paratransit sector?

PARATRANSIT: ONE WORD COVERING MULTIPLE REALITIES

In the Global South, paratransit services are also broadly referred to as "informal transport", "popular transport", "intermediate transport", "community services", "transport artisanal", "indigenous transport", and other similar terms. In Asia, paratransit is also referred by some practitioners as LAMAT[5], which stands for locally adapted, modified, and advanced transport.

Academic literature[6] indicates that **none of these terms perfectly represents the sector. At the same time, creating a new term would add to the existing duplication and confusion. Therefore, "paratransit" has emerged as the most suitable term.**

Behrens et al. (2016)[7] defines "paratransit" as "a term conventionally used to describe a flexible mode of public passenger transportation that does not follow fixed schedules, typically in the form of small- to medium-sized buses." This word is used in industrialised countries but is also appropriate for the Global South.

In industrialised countries, and more specifically in the United States and Canada in the 1960s and 1970s, paratransit was defined as "unscheduled services that complement mass public transport systems" (e.g., Saltzman 1973; Kirby et al. 1974). The concept has been extended to services for people with specific needs and also covers taxi and ride-hailing services that are contracted by an agency.

The general literature on Latin America[8], expand on the Jennings and Behrens 2017[9] definition: "Paratransit refers to demand-driven, unscheduled public transport provided by small operators, typically in mini- to medium-sized buses. Paratransit is sometimes called 'informal', but operators are not always informal businesses, and they are not necessarily unregulated."

"Paratransit" is therefore a term adapted to an evolving concept of mobility service provision, both in the Global South and North.

Figure 5 – A high-level model of paratransit across the world. Source: E. Önçü

OTHER COUNTRIES, OTHER PATHS	Background, characteristics, role	
Developed countries	Demand responsive High technology Low demand areas Medium size vehicles	
Intermediary countries	Profit focused City as market Market wars Political effects	
Developing countries and territories	Profit focused Corridor as market Personal resistance Small vehicles	

DESCRIPTION OF PARATRANSIT IN THE GLOBAL SOUTH

Often, people use different approaches to describe what are essentially the same types of services in the Global South. In other words, meaning is more important than definition. **Consequently, this paper recommends that, instead of a new definition, a clarifying description of paratransit be provided.**

The following is our proposal for an **umbrella description** of "paratransit":

- Unscheduled services, ranging from collective to for hire transport services, for customer segments ranging from the general public to specific user groups.
- A myriad of small and medium private and business-driven "operators" (vehicle drivers, vehicle owners, cash collectors, mechanics, interchange staff, etc.) providing services with no public utility obligation but playing the role of what we call public transport in the Global North.
- Services that are not or only partially recognised, operated, regulated, planned, and funded by authorities. The governance of the paratransit sector varies from private industrial organisation rules and principles to a variety of public regulations.

5 (Keang, 2015)
6 Study commissioned by Volvo Research and Educational Foundations titled Informal and Shared Mobility: A Bibliometric analysis and researcher network mapping
7 Paratransit in African Cities Operations, Regulation and Reform, edited by Roger Behrens; Dorothy McCormick and David Mfinanga, Chapter 1, Page 1
8 Informal and semi-formal services in Latin America: An Overview of Public Transportation Reforms by Thet Hein Tun, Benjamin Welle, Darío Hidalgo, Cristina Albuquerque, Sebastian Castellanos, Ryan Sclar, David Escalante, Page 12
9 Jennings, Gail, and Roger Behrens. 2017. The Case for Investing in Paratransit: Strategies for Regulation and Reform. Volvo Research and Educational Foundations (VREF). https://www.researchgate net/publication/317357984_The_Case_for_Investing_in_Paratransit_Strategies_for_regulation_ and_reform. Accessed 11 March, 2020.

Figure 6 – Paratransit system attributes

Table 2 – Components of paratransit system attributes

Organisational arrangements	Policy and planning Regulation, licensing, and government oversight/role Enforcement
Operating model	Vehicle ownership Owner-driver relationship Vehicle maintenance & insurance Driver licences and training Investments Fare systems Company registration Ancillary businesses
Operational characteristics	Modal split Vehicle type and size
Infrastructure provision & maintenance	Public transport stops and information for users Public transport interchanges Public transport rights of way Depots and staging Traffic signal pre-emption

WHAT ARE THE STRENGTHS AND WEAKNESSES OF THE PARATRANSIT SECTOR?

Mobilise Your City conducted a large strengths, weaknesses, opportunities, and threats (SWOT) analysis of the paratransit sector, as summarised in Figure 7[10].

Figure 7 – SWOT analysis of the paratransit sector.
Source: Paratransit in Asia: Scalable Solutions to Reform, Modernise and Integrate, AFD, CODATU, ESPALIA

USERS	STRENGTH	WEAKNESS
INTERNAL	Availabillty of the offer Flexibility Door-to-door service Fares Speed	Unreliable No passenger information Fares Congestion Pollution Road safety Insecurity (in and around vehicles)
EXTERNAL	Trip planning tools Modal and fare integration Comfort in the vehicles	Less availability if reform Fare increase

LOCAL GOVERNMENT	STRENGTH	WEAKNESS
INTERNAL	No subsidies Adaptation of the offer to the demand Job providing sector No -or few- infrastructure needed Sector part of the local culture and identity	Not a public service Competition with the public transport offer (if it exists) Congestion Pollution Road Safety Difficult to regulate Lack of information Political power
EXTERNAL	New tools to facilitate and improve regulation Modal and fare integration Safer and cleaner vehicles	Political opposition of the stakeholders in case of a reform Job loss Discredit of the new transport offer (if applicable)

DRIVERS	STRENGTH	WEAKNESS
INTERNAL	Job access (if permit) Income Social status In some cases, form of social protection	Strong competition Target system No social protection Poor working conditions Corruption
EXTERNAL	Improvement of working conditions Optimisation of the filling rate of the vehicles Vehicles less costly to maintain Access to social advantages	Job loss if reform Decrease of daily income Difficulties to access the sector

OWNERS	STRENGTH	WEAKNESS
INTERNAL	Regular income Small capital needed Pooling of needs in some professional organisation Importance of the demand Social status	Strong competition No economies of scale Pressure from professional organisation Corruption Commercial risk
EXTERNAL	Optimisation of the filling rate of the vehicles Vehicles less costly to maintain Buyout	Loss of revenue Difficulties to access the sector

10 The UITP knowledge brief Key insights into transforming the informal transport sector provided an initial strength and weakness analysis of the paratransit sector and concluded with the table in Figure 7.

PLANNING TRANSPORT WITH PARATRANSIT

As mentioned above, the paratransit industry is an important, and, in some cases, the main, mobility provider in the Global South and caters to a large range of transport needs. The sector has many strengths, but also weaknesses, when looking at service provision to different users, working and operating conditions of the workforce, and the benefits and externalities for the community. As Global South cities are often characterised by poor spatial form and constrained finances, finding the optimum balance between the provision of quality public transport and fiscal and financial sustainability is a critical challenge.

To reach this optimum point, one cannot solely rely on traditional mass public transport solutions; an integrated approach considering all available collective and shared mobility options is needed to simultaneously address passenger needs and government priorities in the most effective and sustainable manner. **Establishing the role of paratransit within an integrated public transport network is the "tipping point" for developing cities to implement sustainable urban public transport networks.**

PARATRANSIT: A KEY PLAYER IN INTEGRATED PUBLIC TRANSPORT NETWORKS

As mentioned above, paratransit fulfils many roles to meet different transport needs. In order for it to be considered an integral part of the solution to make mobility systems in the Global South more effective, efficient, and sustainable, one needs to adopt an inclusive and integrated public transport planning perspective.

The many possible roles that paratransit can play as part of an integrated public transport network need to be identified at the start of any mobility intervention. Developing cities should improve public transport systems through an integrated approach that harnesses the advantages of both mass public transit systems and paratransit systems to efficiently meet user needs.

Planning transport with paratransit will cover:

- Route and service planning
- Development of specific infrastructure, such as public transport interchange, depots, & stabling equipment
- Development of on-street equipment such as stops or street right of way design
- Fare structure and ticketing
- Information on transport services to users and passengers (routes, times, whether fixed or real-time information, etc.).

To ensure that paratransit contributes to a well-functioning transport system by providing synergies with public transport (e.g. BRT or rail services) when developed or under construction, it is crucial to transform the sector, rather than ignoring its weaknesses and the potential roles it could play. As seen in the SWOT analysis presented above, the sector needs to enhance its service offering, user experience, technical and financial viability, and capacity building.

To transform the paratransit sector to enable it to become part of an integrated and sustainable transport plan, policymakers need to consider two specific dimensions:

1. Mobility:

- Identify the different transport functions and types of services supplementing other modes of transport.
- Assess the benefit of investing in specific infrastructure for the paratransit sector (e.g. interchanges, rights of way, signalling systems, etc.), as well as the purchase of vehicles.

2. The **microeconomics** and **political economy** of the sector, i.e. the interrelationships of individuals, businesses, governments, and public policies in the sector.

The first dimension is often well-known by transport experts. However, the second dimension is often omitted. Therefore, this paper proposes a framework that provides a way of capturing the many dimensions of the paratransit sector's microeconomics and political economy.

Table 3 – Holistic analytical framework for the paratransit sector

TYPE OF CRITERIA	KEY OBJECTIVES	EVALUATION CRITERIA	KEY SUCCESS FACTORS
Technical	To ensure public transport services are reliable, quick, safe, affordable, comfortable, and convenient	- Demand/supply analysis - Service headway - Vehicle km - Vehicle emissions - Vehicle comfort	- Passenger waiting time - Service reliability - Reduce overall vehicular km and associated emissions - Increase modal split in favour of public transport
Financial	To ensure fiscal and financial sustainability, enabling continuity in the future	- Capital cost (fleet and infrastructure-related cost) - Operational cost and system deficit - System affordability	- Reduce capital cost - Minimum operational system deficit - Affordable fares for passengers
Social	To ensure adequate impact analysis and supporting mitigating measures of transport industry role players	- Transport industry impacts - Labour impact assessment - Effective industry engagement and dialogue - Impacts on the microeconomics and political economy surrounding the paratransit industry	- Buy-in and ownership by affected operators and stakeholders - Well-being of transport workers
Environment	To reduce transport contribution to carbon emissions	- Reduce vehicular emissions	- Reduce vehicular km - Reduce transport contribution to air pollution
Governance	To ensure adequate enabling environment to deliver integrated public transport networks	- Roles and responsibility - Accountability	- Clear role description between government and operator - Clear understanding of accountability for functions

To illustrate how sectoral transformation can be achieved, the paper focuses on a specific case: the Pretoria Randburg Soshanguve Taxi Association (PRS) in South Africa.

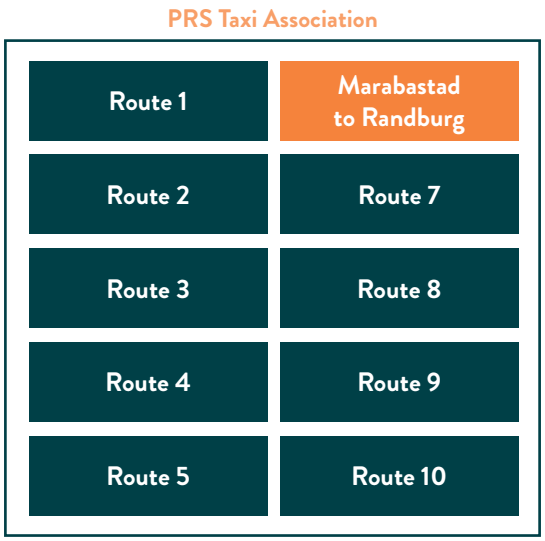
PRETORIA-RANDBURG-SOSHANGUVE TAXI ASSOCIATION, SOUTH AFRICA

This project involved the corporatisation of minibus taxi services operated by PRS, an MBT association based in Pretoria, Gauteng that operates multiple passenger transport services between Soshanguve, north of Pretoria, and Randburg, north of Johannesburg.

The Development Bank of Southern Africa (DBSA) engaged the World Bank to develop an approach to improving the quality of MBT services in South Africa. DBSA's primary aim was to leverage its development finance mandate to support and de-risk the local MBT industry. The project focused on the Marabastad to Randburg route, which is a 54 km one-way interurban service covered by 15 operators and 29 vehicles. The idea was to bring multiple operators and drivers together in one private business—a radical change in the paratransit operations ecosystem.

The business-oriented nature of the sector is the starting point for transformation. The investment needed to make the new business a corporate entity was obtained through development finance and an equity contribution from PRS's affected operators (shareholders) in the form of vehicles and operating licences. DBSA required the MBT association to introduce various business improvement measures as a prerequisite to corporatisation and, as a result, has concentrated on providing technical and change management support directly to them to help them navigate the transition from informality to a corporate entity.

Figure 8 – Schema of minibus taxi association routes.

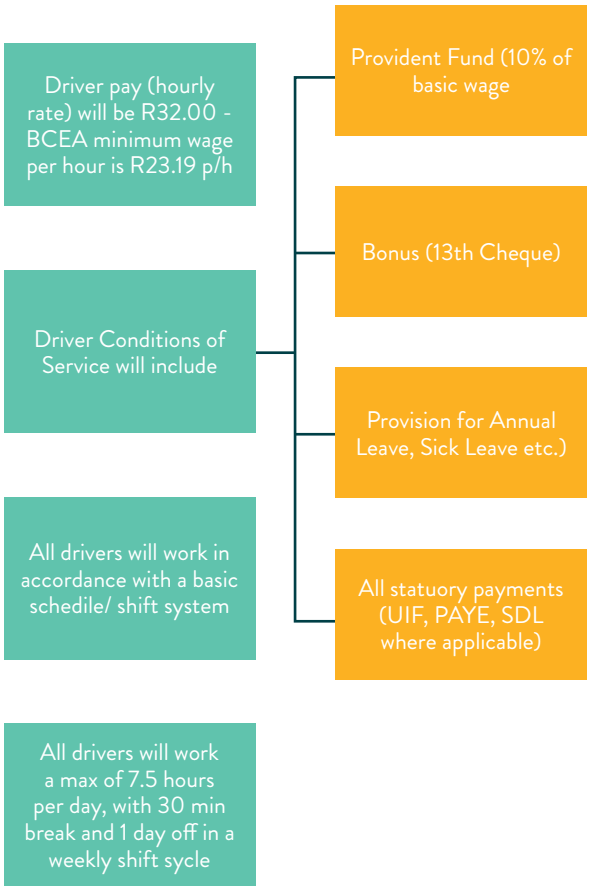


By creating this corporate structure, the project aimed to achieve efficiency gains from the following:

- Economies of scale (collectivisation & corporatisation)
- Establishing the appropriate fleet mix (route typology requires high-occupancy vehicles (HoVs))
- Standardisation of a fleet that runs on diesel fuel in the short term (ability to negotiate bulk discounts)
- Reducing the cost of capital (and cost of cyclical fleet recapitalisation)
- Improved operations and passenger infrastructure.

The project has led to significant improvements. First, the working conditions of drivers have changed, as summarised below:

Figure 9 – Key points of improvement in paratransit working conditions.



Second, the business model has been strengthened:

1. The vehicle types are perfectly tailored to the types of services - they are robust and provide the right capacity.
2. A recapitalisation cycle has been triggered, thanks to cash flow impact & timing.
3. Fuel price volatility due to stronger ability to negotiate bulk discounts has significantly decreased.
4. The cost of borrowed capital has decreased significantly (12.45-27%).
5. Driver income and working conditions have improved.
6. Shifting to a cashless system has provided many benefits, e.g. saving on the cost of managing cash.
7. Depot costs and managerial overheads have decreased thanks to economies of scale.

The financial analysis in the project focused on risks and mitigation measures.

Table 4. Risks and mitigation measures associated with the business model

RISKS
1. Inability to negotiate modelled diesel prices
2. Increases in diesel prices
3. Limitations of e–taxi deployment due to trip distances and (affordable) battery life and charging times
MITIGATION MEASURES
1. Short-term – cut and reduce non-essential costs.
2. Expedite shift to cashless fare system.
3. Expedite establishment of own depot with own fuelling facility for larger PRS Association.
4. Expedite testing of viable options to transition to electric vehicles.

Following a stakeholder engagement process that started in July 2022, data were collected in Q3 2022. The data were used to assess the proposed project to establish a corporate entity, and the company was founded in February 2023. A detailed business model and plan was established in March 2023. Since then, DBSA has been preparing a loan for the purchase of the new vehicle fleet. In the future, DBSA plans to create a project management office to assist operators in the sector who are interested in taking the same route.

CHALLENGES IN ENGAGING WITH THE SECTOR

Given the many different functions of paratransit, one may question why paratransit is rarely part of an integrated transport plan. There are two main reasons for this.

First, due to the informal and dynamic nature of paratransit, the paratransit industry is typically **not adequately understood** in terms of its size, transport-related operational data, operational model, financial and business model, microeconomy supporting the industry, and labour impacts. This lack of understanding is often the key barrier to developing an effective paratransit transformation project.

Second, the **relationship between the government and paratransit operators** has always been hostile, plagued by mistrust or miscommunication.

- Operators generally perceive the government as a punitive institution that wants to effectively steal their business by removing them as public transport providers.
- On the other hand, the government generally views the paratransit industry as consisting of illegal operators that have the sole objective of increasing income at all costs.

These misconceptions frequently prevent a collaborative working relationship between the government and paratransit operators.

Consequently, it is essential to first establish a platform that facilitates continuous and sincere dialogue between government and the paratransit industry. Next, **relationships** within the government, between the government and paratransit industry, and within the paratransit industry need to be formed to facilitate sectoral transformation.

Such relationships could be structured as follows:

- **Within the government:** Key functions related to paratransit such as policy, planning, design, implementation, regulation, and enforcement are often divided among government departments. It is essential that the government sectors at different vertical and lateral levels that are responsible for these functions engage in a collaborative manner to ensure all plans and projects align to enable a holistic transformation of the paratransit industry.
- **Between the government and paratransit industry:** Traditionally, the government and paratransit industry have interacted on matters of licensing, permits, and vehicle impoundments and traffic infringements, or when a crisis arises (e.g. a strike or external events impacting the mobility of a city). It is critical that the government and paratransit industry establish regular dialogue on strategic, tactical, and operational matters.
- **Within the paratransit industry:** The industry generally comprises vehicle owners and drivers, who are often organised into geographic associations or cooperatives. It is essential that the paratransit industry develop a comprehensive institutional arrangement to ensure all relevant actors are represented within their geographic association or in the region or city-wide body that engages with city authorities.

CONSULTATION PROCESS WITH THE PARATRANSIT INDUSTRY IN CÉBU, PHILIPPINES REGARDING A NEW BRT (UNDER CONSOLIDATION)

The introduction of a BRT system in Cébu has generated tensions between the authorities and paratransit operators. The different stakeholders are from different functional and geographic purviews and have different, and sometimes conflicting, objectives. There is a need to find a common or middle ground based on the city's objectives.

To identify a role for paratransit and the BRT, a specific consultation and communication process was put in place during the feasibility study phase and, to a certain extent, after project approval. It was recognised that communication at the user level and the general public, which includes paratransit stakeholders, creates a feeling of ownership and pride in the system being developed, which transfers from the grassroots level up to politicians and is a way of ensuring continued political support. It was therefore a priority for the government to turn stakeholders into BRT advocates. The consultation process helped establish critical relationships between the project team, the public, and key players in the city, including local government officials and politicians.

One key lesson learned is that there is a need for focused and sustained communication with multiple stakeholders using different approaches that suit the various audiences. Stakeholder analysis and engagement was crucial to getting a better understanding of the political economy of public transport - who the stakeholders are in the differ-

ent sectors of society, including government, private, and non-government sectors, and how they relate to each other vis-à-vis transport policy. This resulted in a clearer understanding of the sector, identification of the different mobility providers' evolving and optimum roles with respect to the new more formal, high-quality, and high-capacity mass transit system, and identification of mitigating and management measures to address the potential social impacts and economic displacement of members of the sector. While there have been challenges since the early stages of the project, and some remain even now during the BRT construction phase, it is all part of the process of introducing new mass transit systems and integrating incumbent paratransit operators and drivers into the overall public transport system.

CONCLUSION

Paratransit plays a critical role in the mobility of millions in the Global South. Plans to improve mobility in these contexts in response to rapid population growth and urbanisation are often focusing on the implementation of mass transit solutions, including BRTs, e.g. in Dakar, Senegal, or heavy rail, such as the blue line in Lagos, Nigeria. Observation shows that paratransit services rarely disappear. On the contrary, the industry keeps on playing a critical role in mobility provision.

Thus, an inclusive and integrated public transport planning perspective is needed to ensure an effective and sustainable role for the paratransit sector in the mobility system. This vision must be underpinned by a clear role being attributed to paratransit services as part of a wider mobility system and as supporting or supplementing other modes of transport. The government and paratransit operators are critical players needed to outline solutions and implement policies to put the sector on a path of transformation. Policies should rely on the sector's strengths and tackle its weaknesses. Developing such policies requires a deep understanding of the microeconomics and political economy of the sector to ensure its proper transformation. Such an approach will improve urban mobility in the context of population growth, urban development, and constrained public budgets. The following recommendations aim to help guide paratransit stakeholders in implementing this approach.

RECOMMENDATIONS

1. Recognise the variety of services that paratransit provides and promote a general mindset change across the industry.

- Given the wide range of different contexts in the Global South, instead of providing a definition for paratransit, a description of paratransit services should be provided and supported by a **general description of system attributes.**
- In the Global South, "paratransit" is characterised by unscheduled public transport services provided by small-scale transport operators with varying vehicle types, with no obligation to provide services at any time.
- To understand the different characteristics and attributes, the **following framework is proposed:**
  - Governance and organisational arrangements
  - Policy & planning, regulation, licensing, government oversight/role, enforcement, and paratransit organisational arrangement
  - Operating model: vehicle ownership, owner-driver relationship, vehicle maintenance & insurance, driver licences, and training
  - Operational characteristics: description and type of operations, typical route lengths, and vehicle type and size
  - Infrastructure provision and maintenance: public transport stops, interchanges, and rights of way, depots and staging, and traffic signal pre-emption
  - Public perception: paratransit users and non-users.

2. Integrate paratransit into a sustainable and integrated mobility planning approach in contexts where it is prevalent.

- In the Global South, paratransit is the major mobility provider. Therefore, it cannot be limited to a peripheral role to scheduled public transport services in many cities in the Global South.
- **Paratransit should be considered a major mobility solution,** in synergy with mass transit solutions, to improve mobility systems in the context of population and urban growth.
- **The potential roles of paratransit services within a broader integrated public transport network need to be established** at the start of any mobility intervention. Paratransit services can range from main mode to`hybrid (direct or local services) to`distributor or feeder services, subject to technical, financial, social, environmental, and governance analysis.

3. Propose key levers for a path towards effective transformation of the paratransit sector – make an action plan.

- Paratransit presents many strengths, but also weaknesses; **it needs to be transformed in order to play a critical role in integrated public transport networks**.
- To transform the sector, the **paratransit microeconomics and political economy need to be understood.**
  - Acknowledge the evolving and organic role of the paratransit in effectively responding to ever-changing passenger needs and requirements.
  - Ensure basic transport data and information on the paratransit sector is regularly collected and maintained for planning, regulation, and monitoring purposes.
  - Assess the labour impacts and microeconomy of the paratransit industry.
- A vision of the transport system should be established.
  - Adopt an inclusive and integrated public transport policy and planning approach to ensure an effective, efficient, and sustainable role for the paratransit sector.
  - Manage a mindset change of the government and operators, based on a capacity development and training plan.
- A **platform for continuous discussions** between the paratransit industry and government should be set up and contribute to developing **trust**.
- An **institutional arrangement** that structures the **relationship** between the government and paratransit sector should be created. This relationship may evolve over time and should entail sharing joint responsibilities and identifying specific responsibilities for the government and other key stakeholders to empower the industry.

Following these recommendations can help ensure that paratransit, or an improved version of it, is successfully integrated into the evolving overall public transport system, to serve the population's mobility needs in a reliable, safe, efficient, and sustainable manner.

The International Association of Public Transport (UITP) Paratransit Working Group has been working on three complementary topics, or work packages: 1) definition and planning of paratransit; 2) data collection; and 3) a business model framework for the sector. Work Package 1's (WP1) aim is to define the role and function of paratransit, Work Package 2 (WP2) looks at data as a means to better understand the sector, and Work Package 3 (WP3) focuses on understanding the business model by outlining a holistic framework based on the business environment.

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This is an official Policy Brief of UITP, the International Association of Public Transport. UITP represents the interests of key players in the public transport sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport worldwide.

This Policy Brief was prepared by the Paratransit Working Group
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