

Stakeholder insights on enhancing public transport services in sub-Saharan African cities – Perspectives from Accra-Ghana and Dar es Salaam-Tanzania

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ABSTRACT

Public transport (PT) systems in sub-Saharan African (SSA) cities are critical for urban mobility and economic development, yet they face numerous challenges that hinder their efficiency, equity, and sustainability. These challenges include exorbitant operating costs, deteriorating road infrastructure, and significant gender imbalances among the stakeholders involved in planning, management, and operation. Addressing these interconnected issues is essential for developing robust, equitable, and efficient PT systems that can support the growing urban populations in SSA. Accordingly, this study examines key stakeholders' perspectives on improving PT through an in-depth analysis of PT systems in Accra-Ghana, and Dar es Salaam (DAR)-Tanzania, focusing on stakeholders, existing systems, route configurations, fares, vehicle distribution, service areas, passenger information, operations, and capacity-building needs. The study findings are based on data collected from a semi-structured interview guide administered in person to 20 agencies in Accra-Ghana, and 12 agencies in DAR-Tanzania involving local government, transport regulators, transport unions, user groups, law enforcement, and research institutions. The findings reveal significant gender imbalances among stakeholders, high operating costs, poor road conditions, and poor fare structures in both cities. Despite these challenges, there is a strong commitment to improving PT systems through better route setup, vehicle allocation, and passenger information systems. The study highlights the importance of tailored solutions to address the unique needs and challenges of PT in each city. Policy implications include addressing gender imbalances, improving road conditions, reducing operating costs, and promoting fare transparency and professional certification. By leveraging these insights, policymakers and urban planners can develop targeted interventions to create more efficient, equitable, and sustainable PT systems in Accra-Ghana and DAR-Tanzania and, by extension, in SSA cities.

1. Introduction

The significance of public transport (PT) in achieving a thriving society in terms of socioeconomic vitality, promoting public health, equity, and inclusion, and mitigating climate change has been widely recognized. In sub-Saharan Africa (SSA), the PT system is dominated by paratransit services, about 78 % on average (R Behrens et al., 2016; Roger Behrens et al., 2016a). The paratransit system forms the primary means of access to socioeconomic and cultural opportunities in SSA cities (Cooke et al., 2022; Lucas et al., 2019; Luke, 2024; Porter et al., 2020). Despite providing the largest means of access to opportunities in SSA, the paratransit system does not receive adequate governance,

proper planning, enough investment and financial backing, proper infrastructure, or sufficient research and development activities. The paratransit system in SSA cities is largely characterized by the private sector, which owns, operates, maintains, and manages their vehicles in uncoordinated or loosely coordinated ways that do not explicitly reflect social equity and efficiency goals (Acheampong and Asabere, 2022; R Behrens et al., 2016; Dumedah et al., 2022; Klopp and Cavoli, 2017; Poku-Boansi, 2022).

Paratransit, like any PT system worldwide, is guided by regulators and service providers. The paratransit regulars are often required to ensure effective management, safety, and sustainability of transport services. Specifically, their roles include tasks such as formulating and

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implementing transport policies, enforcing safety standards, regulating fare structures, facilitating coordination across different transport modes, monitoring and evaluating transport services, managing market entry for new operators, and maintaining a competitive environment (Roger Behrens et al., 2016b; Gumbo et al., 2022; Sohail et al., 2004). The paratransit regulators are often national and local government agencies. For example, in Ghana the Driver Vehicle and Licensing Authority (DVLA) registers vehicles and drivers; the Police Motor Transport and Traffic Directorate (MTTD) enforces the rules and regulations; the National Road Safety Commission (NRSC) promotes road safety education; and the Metropolitan, Municipal and District Assemblies (MMDAs) coordinate various transport services. Relatedly, the Land Transport Regulatory Authority (LATRA) regulates the land transport sector in Tanzania. Among its mandates, LATRA is responsible for assessing the supply and demand for passenger services, protecting the financial viability of efficient suppliers, and protecting the interests of consumers concerning costs, quality, and standards of transport services.

However, due to the inability of most national and local authorities in SSA cities to provide enough transport services, the private sector is the main, in some cases the only, service provider (Acheampong and Asabere, 2022; R Behrens et al., 2016). Pro-social interventions by government authorities are often hampered by insufficient governance capacity and lack of proper institutional setup, poor urban planning, inefficient service delivery, inadequate transport services, unregulated traffic systems, poor personal and road safety measures, increasing congestion, and pollution (Ajayi et al., 2023; Ayetor et al., 2021; R Behrens et al., 2016; Clark et al., 2022). Essentially, the paratransit service providers are the backbone of PT services in SSA cities. They provide the vehicle fleet and the labor or workforce to manage and operate the vehicles. In some cases, they even take up some regulatory roles such as coordination, enforcement of standards and monitoring (Hart, 2016; Stasik, 2015, 2017). Most SSA cities could collapse without paratransit services, evidenced by severe impacts on cities whenever transport operations suffer from supply disruptions including industrial strike actions by operators and fuel price increases. Paratransit services are mostly managed by driver unions or associations often with limited or no financial support, where they control the setup, organization, management, and operation of transport services. Many of these tasks are the responsibility of national and local government authorities. Yet, paratransit service providers are often wrongly accused and disproportionately blamed for the poor management and running of PT services in SSA cities (Boateng, 2020, 2021). It is worth investigating whether the real culprit of the poor paratransit system in SSA is the regulators, mostly local governments tasked with managing the transport system.

Despite its critical role in mobility and access to opportunities, the paratransit operation and service in SSA cities is highly inefficient, resulting in unequal access for some populations, traffic congestion, road traffic crashes, and unsafe road environments (Dumedah et al., 2024, 2025b; Ndibatya and Booyesen, 2020). The current paratransit allocation is erratic, dedicated to profitable routes, not always available, depends on available vehicles, and not available on some routes and certain times of the day/year (e.g., nighttime, seasonality) (Dumedah et al., 2023). Additional compelling factors which affect route selection by paratransit operators include traffic congestion, poor road conditions, lack of stations/stops, low demand, excessive competition among paratransit operators, and cases of non-union drivers (Dumedah et al., 2023; Ndibatya and Booyesen, 2020). These conditions create supply uncertainties for passengers regarding access to opportunities, unreliable revenue streams for paratransit service providers, and unsafe road environments for vulnerable road users, including pedestrians, cyclists and motorcyclists (Odamé et al., 2023; Porter et al., 2020). Essentially, the limited equitable and responsive paratransit system has implications on access, network coverage, traffic congestion, driver behavior, road safety, and service quality. That is, the inefficiency and inequity of the paratransit service are among the leading drivers of unequal access to socioeconomic activities in SSA cities.

Accordingly, the current operation of paratransit service does not: (a) guarantee a reliable revenue stream for paratransit owners, drivers and operators; (b) provide safe and reliable access to opportunities for passengers; or (c) ensure a safe road environment for pedestrians, passengers, local authorities, businesses, and the general public. An effective paratransit system is in the interest of all stakeholders, particularly service providers, regulators, passengers and pedestrians. Relatedly, there are limited studies which consistently investigate stakeholder perspectives on key components of the paratransit system such as route setup and allocation, operating procedures and passenger information, and capacity-building needs across SSA cities. PT systems in SSA cities face significant challenges, including high operating costs, limited infrastructure, poor fare structures, and gender imbalances among stakeholders (Roger Behrens et al., 2016b; Lucas et al., 2019; Venter et al., 2021). Despite these issues, there is a commitment to improving PT systems in SSA cities (Acheampong, 2022; Campbell et al., 2019; Klopp, 2021).

On this basis, this study investigates the perception of key stakeholders about approaches to enhance the paratransit system in two African cities, Accra-Ghana and Dar es Salaam-Tanzania (DAR-Tanzania). This study synthesizes the knowledge on and develops an integrated stakeholder framework needed to co-formulate, co-develop, and co-implement an enhanced paratransit service toward improving access to opportunities. The study focuses on identifying tailored solutions to address the unique needs and challenges of each city's PT system. Key areas of investigation include the current PT systems, route setup, fares, vehicle allocation, service zones, passenger information, operational procedures, and capacity-building needs. By exploring these aspects, this study seeks to identify targeted interventions that can enhance the efficiency, equity, and sustainability of PT in Accra-Ghana and DAR-Tanzania and, by extension, other SSA cities.

The comparative nature of this study is unique in using Accra-Ghana and DAR-Tanzania. It is widely recognized that SSA cities face similar challenges with their mobility and access to opportunities (R Behrens et al., 2016; Klopp, 2021). However, mobility and access are always context-specific requiring the need to interrogate the local underlying drivers that underpin the transport system. The selected cities, Accra-Ghana and DAR-Tanzania present compelling differences and commonalities, which imply that interesting findings are likely through a comparative analysis. Accra, the capital and largest city of Ghana may be described as the quintessential rapidly urbanizing African city, being surrounded by sprawling peri-urban development. In Accra-Ghana, the PT system is a mix of minibus (Trotro), shared taxis, three-wheeler (tricycles), and two-wheeler (motorcycles) taxis. DAR-Tanzania is currently Africa's fifth most populous city where about 70 % of the population live in informal settlements. DAR-Tanzania also has a similar mix of PT modes, mostly including minibus, three-wheeler, and two-wheeler taxis. Paratransit minibuses dominate the transport mode share in DAR-Tanzania, where commuters travel as far as 30 km on the arterial roads, which connect the central business district and the residential areas at the fringes (Andreasen and Møller-Jensen, 2017; Kiunsi, 2013; Nkurunziza et al., 2012; Olvera et al., 2003). The mix of PT modes and high population densities in both cities portend significant ramifications for urban transport accessibility, as evident through increased pressure on transport services and infrastructure (low speeds, high travel time, long queues, etc.), as well as elevated usage of motorcycle and tricycle taxis.

1.1. Conceptual framing

The study is grounded in theories that provide a conceptual framework for understanding the design, development, and implementation of improved PT in SSA cities. Specifically, the theories focus on urban transport, institutional governance, and stakeholder collaboration. Urban transport and accessibility theory emphasizes the critical role of transport systems, especially PT, as a key enabler of access to social and

economic opportunities, demonstrating their role in mobility within cities (Cooke et al., 2022; Levine et al., 2012; van Wee, 2016; Wu and Levinson, 2020). Transport-related equity and poverty frameworks emphasize how inadequate services can marginalize vulnerable groups, stressing the need to address disparities linked to social, economic, and environmental disadvantages (Litman, 2024; Lucas et al., 2016a, 2016b; Pereira et al., 2017; Pereira and Karner, 2021). Additionally, principles of equity and efficiency are integrated to balance provider profitability with equitable access for diverse population groups. In doing so, Venter et al. (2020) explored the design and integration of public transport systems in SSA cities, highlighting challenges and opportunities for sustainable and equitable urban mobility.

Also, the study leverages institutional theory to examine how formal structures, legal frameworks, and organizational behaviors affect the success or failure of policies (Manazir, 2023; Parsons, 2007; Scott, 2005). It explores the interplay between regulatory authorities and service providers, emphasizing the role of governance structures (or their absence), policies, and institutional capacity in shaping transport system efficiency, equity, and safety. For example, Christie et al. (2013) identified critical governance indicators impacting infrastructure development and sustainability in the transport sector in SSA. Similarly, Cirolia et al. (2020) highlighted transport governance in SSA cities is shaped by fragmented systems of urban governance resulting from decades of fiscal, territorial, and political decentralization. This has led to challenges such as misaligned urban boundaries, insufficient resources, uncoordinated mobility systems, and a focus on politically attractive large-scale projects over integrated and equitable transport solutions. Also, stakeholder theory and public participation (Freeman, 2010; Gonzalez-Feliu et al., 2018; Pappers et al., 2021; Susnienė and Jurkauskas, 2008) underscores the importance of engaging all stakeholders (e.g., government agencies, private actors, transport unions, and

the public) through public participation and co-creation processes in decision-making to ensure successful policy outcomes.

This conceptual basis emphasizes the importance of improving PT services in SSA cities by incorporating urban transport and accessibility theories alongside institutional governance and stakeholder approaches. Strengthened governance is essential for enhancing regulatory and institutional capacity, facilitating better coordination, investment in infrastructure, and the establishment of higher efficiency and safety standards for PT services. Insights from policy formulation can contribute to the creation of targeted strategies that address PT inefficiencies and inequities. Furthermore, robust stakeholder collaboration fosters the co-creation of solutions among regulators, private operators, and users, enabling interventions that are tailored to local mobility needs.

2. Material and methods

2.1. Study area

The study was carried out in two cities: Accra-Ghana and DAR-Tanzania. In Accra-Ghana, the rapidly expanding areas of Accra Municipal Assembly (AMA) and Korle Klottey Municipality were selected as the study communities, as shown in Fig. 1. Both AMA and Korle Klottey face severe traffic congestion, inadequate PT, deteriorating road infrastructure, air pollution from rising vehicle traffic, limited pedestrian-friendly spaces, and inefficient urban transport planning (Acheampong et al., 2022; Okafor et al., 2023; Poku-Boansi et al., 2019). According to the 2021 Ghana Statistical Services Population and Housing Census, the area has a combined population of 352,762 inhabitants, comprising 47.4 % males and 51.6 % females. The available paratransit modes in this area include minibus (Trotro), shared

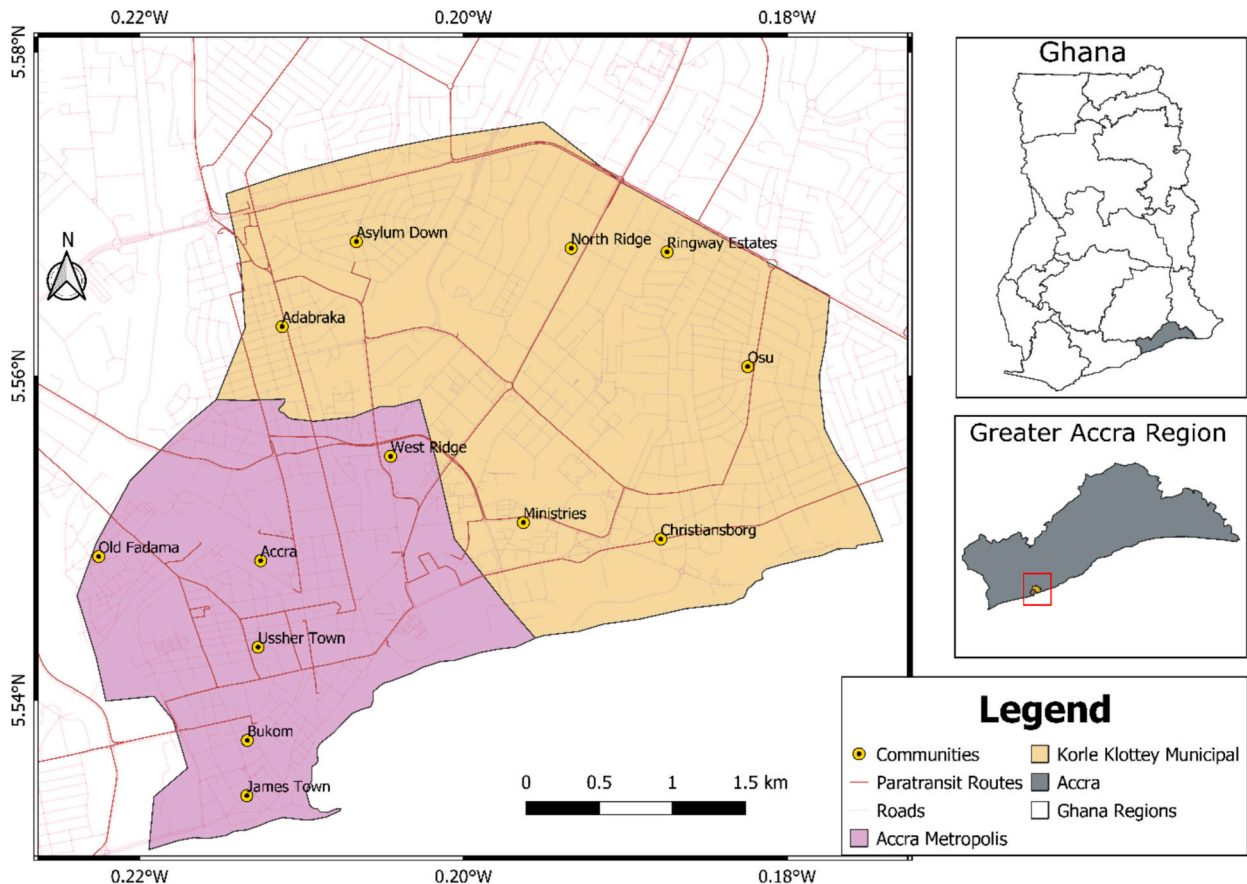


Fig. 1. Study area in Accra-Ghana (Accra Metropolis and Korle Klottey Municipal) showing road networks, major communities and paratransit routes.

taxi, three-wheelers (tricycles) and two-wheelers (motorcycles), which are used by residents for their daily commute to access socioeconomic and other opportunities. The primary and widely used paratransit modes are the minibus with a carrying capacity of 12–28 persons and shared taxi with a carrying capacity of 3–5 persons.

In Accra-Ghana, the provision of PT is the responsibility of local government at the District or Municipal level, although national ministerial resources can be transferred to the local administrative levels. Despite this mandate, local governments have limited direct action within the sector where operating permits are often used as a revenue generating exercise, and there is limited consideration of emission monitoring, network planning or the adequacy of service supply (IBIS Transport Consultants Ltd, 2005). Typically, the income taxes generated from PT operations are not used to develop the sector (IBIS Transport Consultants Ltd, 2005). Also, the PT network was not properly designed, where unrealistic price controls have led to high proliferation of routes, the breaking up of routes into shorter sections by operators to increase their revenue, and the emergence of several branches of transport unions. These are underpinned by piecemeal operating procedures that are set up to mostly maximize the operator revenue stream rather than prioritize passenger needs and minimize vehicular emissions.

In DAR-Tanzania, the selected study community is the Kinondoni municipality shown in Fig. 2. DAR-Tanzania is located at the country's eastern border, adjacent to the India Ocean. According to the 2022 Population and Housing Census for Tanzania Mainland, Kinondoni municipality has a population of about 982,328 people, comprising 48.3 % males and 51.7 % females. As the commercial and industrial capital of the country, DAR-Tanzania has a high concentration of trade, services, manufacturing, and transportation hubs. The common paratransit modes in DAR-Tanzania are minibuses (dala dala), three-wheelers (Bajaji), and two-wheelers (Bodaboda). There is also a Bus

Rapid Transit (BRT) service that operates in dedicated lanes along the city's principal arteries. Kinondoni municipality has experienced significant urban sprawl driven by rapid population growth, demand for housing, and inadequate spatial planning. This expansion has impacted PT accessibility, leading to increased travel distances, traffic congestion, and higher costs for transport services (Andreasen and Møller-Jensen, 2017; Kiunsi, 2013; Nkurunziza et al., 2012). The area also features diverse economic activities, varying population densities, and administrative units that contribute to its urban dynamics.

The land public transport in the form of the above modes is regulated by the Land Transport Regulatory Authority (LATRA), which was established under Section 4 of the Land Transport Regulatory Authority Act, 2019 to regulate the land transport sector. Among its mandates, LATRA is responsible for assessing the supply and demand for passenger services, protecting the financial viability of efficient suppliers, and protecting the interests of consumers in relation to costs, quality and standards of transport services. Based on this mandate, the formulation, development and implementation of efficient PT is the responsibility of LATRA.

2.2. Study approach

The study engaged key stakeholders to gather insights on PT services in both cities, addressing their perspectives, concerns, and needs with a focus on end-user requirements. Stakeholders included representatives from transport agencies, driver associations, vulnerable groups, PT users, and local government entities. A preliminary document review analyzed stakeholder roles and activities in transport accessibility, highlighting their contributions to collaboratively generate knowledge on PT systems in each city.

The data collection instrument was based on a semi-structured

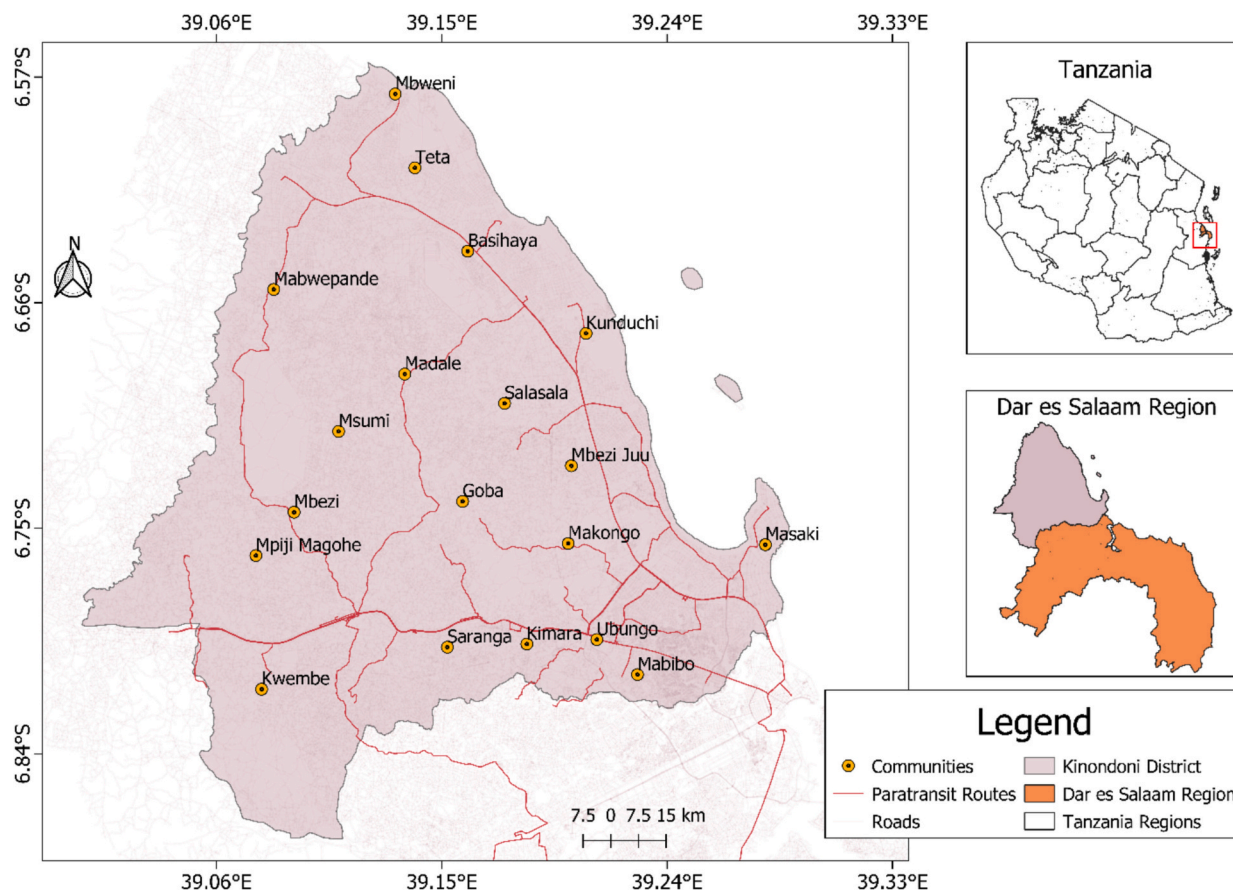


Fig. 2. Study area in Dar es Salaam-Tanzania (Kinondoni Municipal) showing road networks, major communities and paratransit routes.

interview guide having closed- and open-ended questions designed to facilitate the consultation process. The interview guide (see Appendix) focused on the following themes: (a) stakeholder background and goals; (b) the current public transport system; (c) route setup and fares; (d) vehicle allocation & route ranking; (e) service zones & route delineation; (f) passenger information system; (g) operation procedures; and (h) capacity building needs. A related break-out session included a discussion focusing on (a) policy and finance, (b) operators, (c) users, and (d) research and development activities. Participants completed informed consent and interviewer-administered questionnaires. This approach for empirical data collection was used in both study cities: Accra-Ghana and DAR-Tanzania. Institutional Review Board, the HuSSREC, Humanities and Social Sciences Research Ethics Committee, approved the study protocol (Ref: HuSSREC/AP/117/VOL. 2).

The in-person stakeholder consultation workshops were organized in Accra-Ghana on 23 November 2023 and in DAR-Tanzania on 1 March 2024. Both workshops were organized under the theme “*Urban Public Transport in SSA Cities*”, with the challenge being addressed as “*what is the perception of key stakeholders such as driver unions/associations, para-transit operators, passengers, local government, law enforcement, transport agencies, public officials, etc. about how a Smart Paratransit Allocation System (SPAS) could be co-formulated, co-developed, co-implemented, and co-enforced in two African cities, Accra-Ghana and Dar es Salaam-Tanzania?*”. The SPAS framework is envisioned as a collaborative initiative involving key PT stakeholders to effectively address end-user needs. Stakeholder responses were captured manually on paper and digitally via mobile devices. In Accra-Ghana, 27 respondents representing 20 stakeholder agencies participated, as outlined in Table 1. In DAR-Tanzania, 13 respondents from 12 stakeholder agencies contributed, as detailed in Table 2.

3. Results and discussion

3.1. Stakeholder background

The information in Table 3 shows the background characteristics of stakeholders in Accra-Ghana and DAR-Tanzania. It highlights gender distribution, and the number of years stakeholders are involved in the PT business. In Accra-Ghana, 92.6 % of the stakeholders are male, and 7.4 % are female. In contrast, in DAR-Tanzania, the stakeholders are exclusively male, with 100 % representation. This disparity suggests a gender imbalance within the transport sector stakeholders in both cities, with a slightly more male dominance in DAR-Tanzania. Focusing on stakeholder years of involvement in the PT business, the results indicate that the greater than 10 years category represents the maximum for both cities with 39.1 % for Accra-Ghana and 38.5 % for DAR-Tanzania. This pattern indicates that stakeholders in both cities tend to remain engaged in the PT business for several years, reflecting a certain level of experience and commitment within the industry. The absence of stakeholders with less than one year of involvement suggests that new entrants are relatively uncommon or that those who enter quickly progress into higher years of involvement.

3.2. The current public transport system

The information outlining the current PT system in both cities is presented in Table 4. PT modes show distinct patterns between DAR-Tanzania and Accra-Ghana. Buses are more widely utilized in DAR-Tanzania, while minibuses are popular in both cities, albeit slightly more favored in DAR-Tanzania. Conversely, taxis and ride-hailing services are more prevalent in Accra-Ghana, whereas two- and three-wheelers dominate more significantly in DAR-Tanzania. The distribution illustrates similar minibus usage across both cities but highlights DAR-Tanzania's greater dependence on buses and two- and three-wheelers, in contrast to Accra-Ghana's stronger reliance on taxis and ride-hailing services. These differences likely reflect variations in

Table 1

List of participating stakeholder agencies in Accra-Ghana.

S/ N	Agency Name	Description
1	Department of Urban Roads (DUR)	Plans, develops and manages urban road networks and related infrastructure.
2	Ghana Highway Authority (GHA)	Tasked with the planning, development, and maintenance of Ghana's trunk road network.
3	Accra Metropolitan Assembly (AMA)	The local government of Accra is tasked with urban planning, development, and service delivery and aims to enhance the quality of life for residents through sustainable and equitable socioeconomic initiatives.
4	Ga Central Municipal Assembly (GCMA)	The local government of Ga Central (Sowutuom area), tasked with urban planning, development, and service delivery.
5	Land Use and Spatial Planning Authority (LUSPA)	It is a national regulatory body responsible for spatial planning and the management of human settlements. It promotes sustainable development through effective land use, planning standards, and environmental principles.
6	Driver and Vehicle Licensing Authority (DVLA)	It is responsible for regulating driver and vehicle licensing, promoting road safety, and ensuring the use of roadworthy vehicles through standards, testing, and compliance frameworks.
7	National Road Safety Authority (NRSA)	NRSA is the lead agency for road safety management. NRSA focuses on promoting road safety, regulating standards, and coordinating activities to reduce road traffic crashes, injuries, and fatalities.
8	Motor Transport and Traffic Directorate (MTTD), Ghana Police Service	The MTTD is responsible for road safety management, traffic regulation enforcement, and accident investigation. It works to educate road users, control traffic, and collaborate with stakeholders to reduce road crashes and ensure safer mobility across the country.
9	Ghana National Fire Service (GNFS)	The GNFS is responsible for fire prevention, management, and rescue operations across Ghana. It aims to protect lives and property through public education, technical advice, and emergency response services while promoting fire safety awareness and preparedness.
10	National Ambulance Service (NAS)	NAS provides pre-hospital emergency care and medical transport services nationwide. Its mission is to deliver high-quality, cost-effective emergency healthcare through trained personnel and integrated systems.
11	Ghana Health Service	It is responsible for implementing national health policies, managing public health services, and promoting equitable access to quality healthcare, with a focus on primary healthcare at regional, district, and sub-district levels.
12	Ghana Road Transport Coordinating Council (GRTCC)	GRTCC is a government body responsible for coordinating and regulating the road transport industry in Ghana. It oversees transport fare adjustments, ensures compliance among operators, and addresses issues such as fuel price changes to promote efficient and reliable transportation services.
13	Ghana Private Roads Transport Union (GPRTU)	GPRTU is a trade union representing commercial drivers, vehicle owners, and related workers across Ghana. It plays a key role in regulating transport operations, fare adjustments, and working conditions while providing

(continued on next page)

Table 1 (continued)

S/ N	Agency Name	Description
14	Ghana Co-Operative Transport Association	financial and welfare support to its members. It is a union that represents transport operators and promotes cooperative principles to enhance efficiency and professionalism in the transport sector. It focuses on improving service delivery, ensuring road safety, and fostering collaboration among its members for sustainable growth.
15	Ghana Cycling Federation	GCF is the governing body for cycling in Ghana, promoting the sport through events, training, and competitions. It aims to develop cycling talent, foster community engagement, and enhance the sport's visibility.
16	Ghana Society of the Physically Disabled (GSPD)	GSPD is an advocacy organization dedicated to promoting the rights, inclusion, and empowerment of persons with physical disabilities in Ghana. It focuses on addressing accessibility challenges, fostering equal opportunities, and ensuring representation in governance and decision-making processes.
17	Ghana Federation of Disability (GFD)	GFD is a national umbrella body for organizations representing persons with disabilities in Ghana. It advocates for disability rights, inclusion, and equal opportunities, working to influence policies and promote the active participation of persons with disabilities in all aspects of society.
18	World Bank – Ghana office	It supports Ghana's development through financial assistance, policy advice, and technical expertise. It focuses on fostering economic growth, reducing poverty, and promoting sustainable development across various sectors, including education, health, infrastructure, and governance.
19	University of Cape Coast	A national institution of higher learning offering diverse programs across undergraduate, graduate, and professional levels, fostering research, innovation, and community engagement to support national and global development.
20	Kwame Nkrumah University of Science and Technology	A national institution of higher learning offering diverse programs across undergraduate, graduate, and professional levels, fostering research, innovation, and community engagement to support national and global development.

infrastructure, availability, and PT preferences in the two cities.

In both cities, stakeholders universally acknowledged that a strong understanding of PT enhances service delivery. Similarly, the majority of stakeholders agreed that knowledge of PT fare estimation is crucial for reducing conflicts and improving service outcomes. Regarding the impact of PT fares on service delivery, stakeholders in DAR-Tanzania demonstrated a stronger consensus compared to those in Accra-Ghana. Stakeholders in Accra-Ghana were more inclined to adopt a neutral stance, unlike their counterparts in DAR-Tanzania, who were less likely to do so. These differing perspectives highlight the influence of contextual factors on stakeholder opinions, offering valuable insights into their decision-making processes and preferences within distinct urban settings.

In both cities, the majority of stakeholders expressed dissatisfaction with the current public transportation (PT) systems, with 64 % in Accra-

Table 2

List of participating stakeholder agencies in DAR-Tanzania.

S/ N	Agency Name	Description
1	Land transport regulatory authority (LATRA)	LATRA oversees the regulation of land transport services, including road, rail, and cable transport. It ensures safety, efficiency, and accessibility while promoting sustainable development through stakeholder collaboration and technological advancements.
2	Tanzania Roads Agency (TANROADS)	TANROADS manages the development, maintenance, and operation of Tanzania's trunk and regional road networks. It ensures efficient, safe, and sustainable road infrastructure to support socioeconomic growth and connectivity across the country.
3	Tanzania Rural and Urban Roads Agency (TARURA)	TARURA is responsible for the development, maintenance, and management of rural and urban roads across Tanzania, aiming to improve connectivity, support economic activities, and enhance access to social services in both rural and urban areas.
4	Road Safety Ambassadors (RSA) of Tanzania	RSA is an advocacy organization dedicated to improving road safety, particularly for pedestrians and vulnerable road users. Through evidence-based interventions, public campaigns, and stakeholder engagement, RSA promotes initiatives like reduced speed limits in urban areas to enhance safety and reduce road traffic crashes.
5	Tanzania Road Safety Initiative (TARSI)	TARSI aims to improve road safety across Tanzania through evidence-based strategies, public awareness campaigns, and stakeholder collaboration. It focuses on reducing traffic accidents, enhancing infrastructure safety, and promoting responsible road user behavior to create safer mobility systems nationwide.
6	Association of Transporters in Dar es Salaam (UWADAR)	An association of transporters that focuses on promoting a safe, reliable, and efficient road freight industry. DARCOBOA represents commuter bus operators in DAR-Tanzania. It aims to improve urban transport services, collaborating on initiatives like the Dar es Salaam Rapid Transit (DART) project to enhance efficiency, safety, and accessibility for passengers.
7	Dar es Salaam Commuter Bus Owners Association (DARCOBOA)	CMPD focuses on improving the welfare of its members, promoting road safety, and fostering collaboration with stakeholders to enhance the efficiency and reliability of motorcycle transport services in Dar es Salaam.
8	Dar es Salaam Motorcycle Drivers and Owners Association (CMPD)	An association of three-wheeler [bajaji] operators who play a significant role in urban and rural transport, offering affordable and accessible mobility.
9	Three Wheelers Association	UWABA (Umma wa Wapanda Baiskeli) is an advocacy group promoting cycling as a sustainable and safe mode of transport in Dar es Salaam. It organizes events like cycle caravans, collaborates with stakeholders, and raises awareness about the benefits of cycling for health, the environment, and urban mobility.
10	Dar es Salaam cycling community (UWABA)	SHIVYAWATA is an NGO that unites various organizations representing persons with disabilities in Tanzania. It advocates for disability rights, inclusion, and empowerment, aiming to
11	Tanzania Federation of Disabled People's Organizations (SHIVYAWATA)	

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Table 2 (continued)

S/ N	Agency Name	Description
12	University of Dar es Salaam (UDSM)	create a barrier-free and inclusive society through policy influence, public awareness, and stakeholder collaboration. A national institution of higher learning offering diverse programs across undergraduate, graduate, and professional levels, fostering research, innovation, and community engagement to support national and global development.

Table 3

Background characteristics of stakeholders in Accra-Ghana and DAR-Tanzania.

Variable	Percent – Gh.	Percent – Tanz.
Gender		
Male	92.6	100.0
Female	7.4	0.0
Years involved in PT business		
< 1 year	0.0	0.00
1–3 years	30.4	15.4
4–6 years	17.4	23.1
7–10 years	13.0	15.4
>10 years	39.1	38.5

Table 4

Current PT characteristics in Accra-Ghana and DAR-Tanzania.

Variable	Percent - Gh.	Percent - Tanz.	Variable	Percent - Gh.	Percent - Tanz.
Operated Modes			Current PT is effective		
Bus	13.2	22.2	Agree	12.0	0.0
Minibus [e.g. Troto]	27.9	30.6	Neutral	24.0	46.2
Taxi	22.1	2.8	Disagree	64.0	53.8
Ride-hailing [Bolt, Yango]	23.5	8.3	Modify current PT		
Three-wheeler [Pragia]	4.4	19.4	Yes	100.0	92.3
Two-wheeler [Motorbike]	7.4	16.7	No	0.0	7.7
None	1.5	0.0	New PT features		
Knowledge is good for PT			New routes	8.7	12.1
Agree	100.0	100.0	New services – express, local, etc.	9.7	21.2
Neutral	0.0	0.0	Fair and transparent fares	15.5	12.1
Disagree	0.0	0.0	One fare – integrated fare system	10.7	9.1
Knowledge will improve PT			Improved customer service	22.3	12.1
Agree	92.6	84.6	Service zones	8.7	3.0
Neutral	7.4	15.4	Ticketed fares	4.9	15.2
Disagree	0.0	0.0	Mobile ticketing	6.8	12.1
PT fares affect service			Integrated service [Minibus, Taxi]	12.6	3.0
Agree	37.5	46.2			
Neutral	50.0	15.4			
Disagree	12.5	38.5			

Ghana and 53.8 % in DAR-Tanzania disagreeing that the systems are effectively serving their purpose. However, stakeholders in DAR-Tanzania were more inclined to adopt a neutral position compared to their counterparts in Accra-Ghana. Both groups overwhelmingly supported the need to modify or reorganize existing PT systems. The findings are reinforced by statements from respondents in both cities.

A respondent from Accra-Ghana said: “I believe the public transport in its current form needs to be modified, especially the usage of the public terminals and its management. It is barely functional, highly inefficient and very dangerous due to reckless drivers and the terrible condition of vehicles. Fare allocation is very inconsistent and can vary in different vehicles.”

A respondent from DAR-Tanzania said: “The current public transport system, e.g. DART Bus, is ineffective because the buses are few to serve the majority of the passengers; hence, it needs to be modified to serve the purpose and increase the economy. There are some areas that are very difficult, but there are also some that are good; the challenge is the road and the lack of buses and fares for passengers.”

When identifying potential enhancements, stakeholders in Accra-Ghana prioritized improved customer service (22.3 %), fair and transparent fares (15.5 %), and integrated service (12.6 %). In DAR-Tanzania, the focus was on introducing new services, such as express and local options (21.2 %), implementing ticketed fares (15.2 %), and addressing multiple areas equally - new routes, fair and transparent fares, improved customer service, and mobile ticketing, each at 12.1 %. These results point to a greater demand for route expansion in DAR-Tanzania, likely influenced by urban planning, population density, and existing PT challenges. The emphasis on new services underscores a broader need to enhance PT efficiency and diversity, improving accessibility and convenience for commuters. The high demand for PT in DAR-Tanzania has been widely recognized (Andreasen and Møller-Jensen, 2017; Kiunsi, 2013; Sohail et al., 2004). These findings underline the distinct priorities and perspectives of stakeholders in the two cities, highlighting the importance of tailored solutions to address their unique PT needs and challenges.

3.3. Route setup and fares

Information on route setup and travel fares for PT in both cities is presented Table 5. In both Accra-Ghana and DAR-Tanzania, passenger demand, road surface condition, and distance or travel duration are the top factors influencing PT route setup, highlighting the shared importance of these variables. Passenger demand and vehicle supply are comparable in both cities, emphasizing the equal necessity and availability of PT. However, fares are slightly lower in Accra-Ghana, while fuel costs are higher compared to DAR-Tanzania. Higher fuel costs in Accra-Ghana lead to increased operational expenses, which impact PT profitability and fares, potentially reducing efficiency and sustainability. Road conditions play a greater role in DAR-Tanzania, where better road infrastructure can enhance passenger satisfaction and lower vehicle maintenance costs (Tamakloe et al., 2022; Venter et al., 2014). These findings underscore the critical factors shaping PT systems and reveal distinct operational and infrastructural challenges between the two cities.

In DAR-Tanzania, the higher percentage for distance or duration traveled suggests passengers spend more time or cover longer distances using PT, likely influenced by the geographical layout and service distribution. Both cities show comparable values for service type, emphasizing the importance of diverse PT options to cater to passenger preferences and needs. However, the higher spare parts costs in Accra-Ghana point to increased maintenance expenses, potentially impacting the reliability and availability of PT services. Stakeholders in Accra-Ghana identified passenger demand and vehicle supply as the top factors for route setup, with operating costs and road conditions tied for third. Meanwhile, DAR-Tanzania stakeholders prioritized road conditions, travel distance or duration, and passenger demand. This alignment of passenger demand and road conditions highlights shared

Table 5
Information on route setup and fares in Accra-Ghana and DAR-Tanzania.

Variable	Percent – Gh.	Percent – Tanz.	Variable	Percent – Gh.	Percent – Tanz.
Responsible for Route Setup			Fare-setting factors needed		
Yes	33.3	45.5	Passenger demand	14.4	8.6
No	66.7	54.5	Vehicle supply	7.2	3.4
Participate in Route Setup			Fare	3.6	1.7
Yes	33.3	45.5	Affordability – ability to pay	10.8	6.9
No	66.7	54.5	Fuel cost	15.3	15.6
Current Route Setup Factors			Operating costs	10.8	12.1
Passenger demand	20.2	20.3	Road condition	9.0	20.7
Vehicle supply	10.5	10.2	Distance or duration traveled	11.7	8.6
Fare	9.6	10.2	Service type [Minibus, Taxi]	6.3	15.5
Fuel cost	9.6	8.5	Spare parts cost	10.8	6.9
Operating costs	8.8	6.8	Current PT fare structure		
Road condition	13.2	16.9	Flat fare	11.1	4.3
Distance or duration traveled	12.3	13.6	Distance-based fare	30.6	47.8
Service type [Minibus, Taxi]	9.6	10.2	Zonal fares	15.3	4.3
Spare parts cost	6.1	3.4	Time-based fare	18.1	8.7
Route Setup Factors Needed			Mode-based fare	20.8	17.5
Passenger demand	16.2	17.9	Concession or discount	4.2	17.4
Vehicle supply	14.1	8.9	PT fare structure needed		
Fare	10.1	5.4	Flat fare	6.6	14.3
Fuel cost	10.1	10.7	Distance-based fare	31.1	38.1
Operating costs	12.1	7.1	Zonal fares	18.0	9.5
Road condition	12.1	19.7	Time-based fare	8.2	4.8
Distance or duration traveled	11.1	19.6	Mode-based fare	19.7	23.8
Service type [Minibus, Taxi]	6.1	7.1	Concession or discount	16.4	9.5
Spare parts cost	8.1	3.6	Current PT fares are too high		
PT fares are transparent			Agree	63.0	50.0
Agree	16.0	61.5	Neutral	25.9	33.3
Neutral	20.0	23.1	Disagree	11.1	16.7
Disagree	64.0	15.4	Current PT fares are too low		
Participate in fare-setting			Agree	12.0	18.2
Yes	22.2	38.5	Neutral	32.0	18.2
No	77.8	61.5	Disagree	56.0	63.6

Table 5 (continued)

Variable	Percent – Gh.	Percent – Tanz.	Variable	Percent – Gh.	Percent – Tanz.
Current fare-setting factors			PT fare should be ticketed		
Passenger demand	13.3	7.9	Agree	65.4	76.9
Vehicle supply	2.9	4.8	Neutral	7.7	15.4
Fare	3.8	0.0	Disagree	26.9	7.7
Affordability – ability to pay	1.9	3.2	Integrate all PT fares		
Fuel cost	23.8	19.0	Agree	56.0	50.0
Operating costs	11.4	14.3	Neutral	20.0	8.3
Road condition	5.7	17.5	Disagree	24.0	41.7
Distance or duration traveled	15.2	14.3	Aware of fare policy		
Service type [Minibus, Taxi]	9.5	12.7	Yes	19.2	41.7
Spare parts cost	12.4	6.3	No	80.8	58.3

priorities, while the differences reflect unique operational contexts in each city.

Regarding PT fare transparency, most respondents in Accra-Ghana (64 %) expressed dissatisfaction, compared to only 16 % who agreed with its transparency. In DAR-Tanzania, a majority (61.5 %) agreed that fares were transparent, reflecting a more positive perception. This disparity suggests that factors like fare structure, service efficiency, or investment levels might be better in DAR-Tanzania than in Accra-Ghana. This is partly backed by the distance-based fare structure used by LATRA in DAR-Tanzania (Dumedah et al., 2025a; Land Transport Regulatory Authority - LATRA, 2022), compared to the unclear fare structure in Accra-Ghana. When examining current fare-setting factors, stakeholders in Accra-Ghana highlighted fuel costs, travel distance or duration, and passenger demand as the top considerations. In DAR-Tanzania, fuel costs, road conditions, and travel distance or duration were the leading factors, showing shared priorities between the cities regarding fuel costs and travel metrics. For factors that stakeholders believe should influence fare-setting, Accra-Ghana emphasized fuel costs, passenger demand, and travel distance or duration. In DAR-Tanzania, road conditions, fuel costs, and service type were prioritized, showcasing the importance of road conditions in DAR-Tanzania due to their greater variability and impact on PT operations.

Stakeholder perspectives reveal diverse PT fare structures in Accra-Ghana and DAR-Tanzania. The top three fare types in Accra-Ghana include distance-based, mode-based, and time-based fares, while DAR-Tanzania emphasizes distance-based, mode-based, and concession or discount fares. Flat and zonal fares are more prevalent in Accra-Ghana, with rates of 15.3 % and 18.1 %, respectively, compared to lower reliance on these structures in DAR-Tanzania. Conversely, DAR-Tanzania favors distance-based pricing and offers more concessions (17.4 %) than Accra-Ghana (4.2 %). Mode-based fares are similarly utilized in both cities, reflecting a balanced approach. The distinct reliance on flat, zonal, and time-based fares in Accra-Ghana versus distance-based and discounted fares in DAR-Tanzania highlights differences in operational strategies influenced by socioeconomic and infrastructural contexts. Findings from Saddier et al. (2017) further underscore the variability of fare structures and stable PT routes in Accra-Ghana.

Stakeholders in Accra-Ghana and DAR-Tanzania have distinct preferences for fare structures. In Accra-Ghana, the top suggested fare types include distance-based, mode-based, and zonal fares, while stakeholders in DAR-Tanzania prioritize distance-based, mode-based, and flat fares.

DAR-Tanzania demonstrates a preference for flat and distance-based fare systems, whereas Accra-Ghana favors zonal, time-based, and concession fares. Despite these differences, both cities show a shared preference for the balanced application of mode-based and distance-based fares, reflecting a common perspective on these essential fare-setting methods.

Stakeholders in Accra-Ghana and DAR-Tanzania have varied perceptions of current PT fares. A majority of respondents in Accra-Ghana (63 %) and DAR-Tanzania (50 %) agree that PT fares are too high, with only a small proportion disagreeing – 11.1 % in Accra-Ghana and 16.7 % in DAR-Tanzania. Accra-Ghana demonstrates a higher level of dissatisfaction regarding fare levels compared to DAR-Tanzania. On whether PT fares are perceived as too low, most respondents disagreed in both cities—56 % in Accra-Ghana and 63.6 % in DAR-Tanzania. Neutral responses were more common in Accra-Ghana (32 %) than in DAR-Tanzania (18.2 %). This was further disaggregated into operators, regulators and users. In Accra-Ghana, 78.6 % of regulators perceive the fares as too high, with 21.4 % remaining neutral. Among operators, perspectives are divided evenly, as 43 % consider fares too high while 43 % disagree. Similarly, user opinions are equally split, with 50 % viewing fares as too high and 50 % disagreeing. In DAR-Tanzania, 43 % of regulators view fares as too high, while 28.5 % remain neutral and 28.5 % disagree. Among operators, 33.3 % perceive fares as too high, with 66.7 % expressing neutrality. Users unanimously regard fares as too high. Overall, stakeholder views on fares differ, with regulators and operators expressing mixed opinions in both cities, while users in DAR-Tanzania unanimously agree that fares are too high.

Findings reveal a strong consensus among respondents in both Accra-Ghana (65.4 %) and DAR-Tanzania (76.9 %) supporting the ticketing of PT fares, with minimal neutral opinions. However, disagreement levels differ significantly, with 26.9 % in Accra-Ghana and 7.7 % in DAR-Tanzania opposing ticketing. Regarding fare integration, a considerable portion of respondents in both cities – 56 % in Accra-Ghana and 50 % in DAR-Tanzania – favor integrating all PT fares, while disagreement is notably higher in DAR-Tanzania (41.7 %) compared to Accra-Ghana (24 %). Overall, respondents agree on fare integration, though DAR-Tanzania displays greater resistance relative to Accra-Ghana. These patterns suggest varied perceptions shaped by local contexts.

Stakeholder awareness of PT fare policy varies significantly between the two cities, with 80 % of respondents in Accra-Ghana and 58.3 % in DAR-Tanzania unaware of existing policies. The relatively higher awareness in DAR-Tanzania suggests better communication and implementation efforts, potentially fostering greater public satisfaction and compliance. Conversely, Accra-Ghana's lower awareness highlights a need for enhanced public engagement and information dissemination to improve understanding and acceptance of fare structures. These differences in awareness levels could affect perceptions of equity and accessibility, emphasizing the importance of targeted outreach, particularly in Accra-Ghana, to address gaps and promote inclusivity. The following highlight respondents' comments on route setup and fares in both cities.

A respondent from Accra-Ghana said: "The route setup should be clearly demarcated and also consider the condition of the road, and the population in the area. Public transport fares should improve confidence to passengers. I think when all the public transport are integrated to one umbrella, it will strengthen them and they will be fair and transparency to the passengers."

A respondent from DAR-Tanzania said: "The route setup should be clear and defined, fare should be reasonable, route setup should involve other stakeholders, the rise and fall of fuel cost should go with fares, and must consider peak and off-peak periods."

3.4. Vehicle allocation & route ranking

Information on vehicle allocation and route ranking in both cities is presented Table 6. Stakeholder involvement in PT vehicle allocation is limited, with 80.8 % of respondents in Accra-Ghana, and 61.5 % in DAR-Tanzania, reporting no participation. DAR-Tanzania's comparatively

Table 6

Information on vehicle allocation and route ranking in Accra-Ghana and DAR-Tanzania.

Variable	Percent - Gh.	Percent -Tanz.	Variable	Percent - Gh.	Percent - Tanz.
Allocate PT vehicles			Demand higher than supply		
Yes	19.2	38.5	Agree	69.6	91.7
No	80.8	61.5	Neutral	17.4	0.0
Vehicle allocation factors			Disagree	13.0	8.3
Vehicle characteristics	28.8	12.8	Are routes ranked the same?		
Road condition	9.1	14.9	Yes	12.5	9.1
Route distance or duration	16.7	14.9	No	87.5	90.9
Service type [Minibus, Taxi]	22.7	21.3	Current route ranking factors		
Existing vehicle supply	7.6	14.9	Passenger demand	22.0	14.3
Passenger demand	15.2	21.3	Vehicle supply	7.3	14.3
Vehicle allocation factors needed			Fare	7.3	7.1
Vehicle characteristics	23.0	13.6	Road condition	26.8	21.4
Road condition	10.8	18.2	Route distance or duration	17.1	25.0
Route distance or duration	18.9	20.5	Service type [Minibus, Taxi]	19.5	17.9
Service type [Minibus, Taxi]	14.9	18.2	Needed route ranking factors		
Existing vehicle supply	10.8	11.4	Passenger demand	26.0	18.8
Passenger demand	21.6	18.2	Vehicle supply	12.0	6.3
Too many vehicles allotted			Fare	10.0	6.3
Agree	53.8	41.7	Road condition	20.0	21.9
Neutral	30.8	16.7	Route distance or duration	20.0	21.9
Disagree	15.4	41.7	Service type [Minibus, Taxi]	12.0	25.0
Inadequate terminal amenities			Integrate PT modes		
Agree	73.1	50.0	Agree	68.2	58.3
Neutral	15.4	25.0	Neutral	13.6	0.0
Disagree	11.5	25.0	Disagree	18.2	41.7

higher allocation percentage suggests a more structured PT system, which may enhance service reliability and efficiency. Conversely, Accra's lower participation highlights the need for improved PT management to meet population demands. Addressing these allocation challenges in both cities could significantly enhance PT systems, benefiting commuters and advancing urban mobility (Dumedah et al., 2023).

Vehicle allocation factors reveal both differences and similarities between Accra-Ghana, and DAR-Tanzania. Accra-Ghana prioritizes vehicle characteristics, emphasizing quality and passenger comfort,

while DAR-Tanzania focuses on road conditions and reliance on the existing fleet, reflecting the importance of infrastructure quality and vehicle supply. Both cities consider route distance/duration and service type as critical factors, highlighting their significance in ensuring operational efficiency and service delivery. These findings have key implications for PT management, infrastructure development, and vehicle investment strategies (Andreasen and Møller-Jensen, 2017; Olvera et al., 2003).

Stakeholders' preferences for vehicle allocation factors reveal distinct priorities between Accra-Ghana, and DAR-Tanzania. Accra-Ghana places greater emphasis on vehicle characteristics, reflecting a focus on quality and type, while its lower concern for road conditions suggests relatively better infrastructure. Conversely, DAR-Tanzania prioritizes road conditions and service type, highlighting efforts to address diverse road qualities and offer varied PT services. Both cities share a balanced approach to route distance or duration and existing vehicle supply, indicating common strategies and challenges in vehicle allocation related to operational efficiency and passenger demand.

Stakeholder perspectives on vehicle allocation reveal shared concerns in Accra-Ghana and DAR-Tanzania, though the degree of concern varies. Accra-Ghana shows a higher agreement that too many vehicles are allotted, pointing to challenges with vehicle congestion and the need for enhanced traffic management and PT options. In contrast, DAR-Tanzania exhibits greater disagreement, reflecting more effective policies or a lower perceived impact of allocation issues. These contrasting views highlight differing levels of satisfaction with PT policies and infrastructure in the two cities.

Stakeholder perspectives highlight dissatisfaction with PT terminal amenities in Accra-Ghana, compared to more neutral views in DAR-Tanzania, signaling the need for targeted improvements to enhance public satisfaction in both cities. Also, both cities face the common challenge of passenger demand exceeding PT supply, with DAR-Tanzania experiencing this issue more acutely. Furthermore, a significant majority of PT routes - 87.5 % in Accra-Ghana and 90.9 % in DAR-Tanzania - are not ranked the same, indicating high variability that may impact the efficiency and effectiveness of PT services. These findings underscore the need for tailored interventions to address disparities in terminal amenities, supply-demand imbalances, and route optimization.

Stakeholders' perspectives on route ranking factors reveal notable differences and similarities between Accra-Ghana, and DAR-Tanzania. Accra-Ghana prioritizes road conditions and passenger demand, reflecting a greater need for public transportation services, which may require more frequent schedules or larger vehicles. DAR-Tanzania emphasizes route distance or duration and road conditions, indicating a focus on efficient scheduling and infrastructure quality. Both cities share common views on fares and service types, while enhanced road conditions in both cities can improve travel quality and route attractiveness. These differences highlight varying PT dynamics, while shared challenges, such as infrastructure and route optimization, influence efficiency, affordability, and availability of services in both cities. The findings on whether to integrate PT modes reveal that both cities show majority support for integrating PT modes, with Accra-Ghana displaying stronger agreement and less polarization. This suggests that integration in Accra-Ghana may proceed more smoothly, while DAR-Tanzania's polarized opinions, marked by the absence of neutral responses, indicate the need for targeted communication efforts to address concerns and foster greater acceptance of integration. The following highlights respondents' comments on vehicle allocation in both cities.

A respondent from Accra-Ghana said: "Vehicle allocation should be done well for easy identification, and route ranking should also be done with the agency for the comfort of the passengers. Studies should be conducted frequently to determine trip demand of various routes to determine vehicle allocation and route distribution or creation."

A respondent from DAR-Tanzania said: "There is still a big challenge because there are some areas that Daladala does not reach, and the challenge is that the cost of fuel is rising because in some parts you are spending a lot of

money on transportation. Vehicle allocation should consider the passengers in that area so that they should be directly proportional. Route ranking should consider the demand of passengers and the accessibility of the area."

3.5. Service zones & route delineation

Information on PT service zones and route delineation in both cities is presented in Table 7. The findings show significant adoption of service zones in both cities, with 63 % in Accra-Ghana, and 83.3 % in DAR-Tanzania, highlighting a shared commitment to enhancing PT service delivery. However, DAR-Tanzania's higher adoption rate suggests potential areas for improvement in Accra-Ghana's PT planning. Stakeholder preferences also reveal strong support for service zones, with 92.6 % in Accra-Ghana and 75 % in DAR-Tanzania in favor. Accra-Ghana's higher preference indicates easier acceptance, while DAR-Tanzania's higher neutrality and disagreement levels point to the need for community engagement and education. Tailored strategies addressing the unique needs of each city are crucial for the successful implementation and effectiveness of service zones.

Concerning the assignment of vehicles to routes/zones, both cities show strong support for assigning vehicles to specific routes or zones, with high agreement levels of Accra-Ghana (77.8 %) and DAR-Tanzania (81.8 %) and minimal disagreement. This consensus highlights the significance of vehicle assignment in improving operational efficiency and PT policy adherence. However, the presence of neutral responses suggests the need for further stakeholder engagement to enhance

Table 7

Information on service zones and route delineation in Accra-Ghana and DAR-Tanzania.

Variable	Percent – Gh.	Percent – Tanz.	Variable	Percent – Gh.	Percent – Tanz.
Are service zones used?			Current PT scheduling		
Yes	63.0	83.3	Formal scheduling	22.0	35.7
No	37.0	16.7	Predetermined frequency	12.2	7.1
Prefer service zones			Predetermined departure	7.3	21.4
Agree	92.6	75.0	Queue-to-load scheduling	58.5	35.7
Neutral	3.7	8.3	Preferred PT scheduling		
Disagree	3.7	16.7	Formal scheduling	31.7	20.0
Assign vehicles to routes/zones			Predetermined frequency	24.4	13.3
Agree	77.8	81.8	Predetermined departure	22.0	33.3
Neutral	11.1	9.1	Queue-to-load scheduling	22.0	33.3
Disagree	11.1	9.1	Preferred route system		
Cap vehicle to route by demand			Trunk routes	24.1	16.7
Agree	70.4	81.8	Feeder routes	17.2	26.7
Neutral	25.9	0.0	Rapid routes	24.1	20.0
Disagree	3.7	18.2	Express routes	15.5	36.7
Assign vehicles/operators equally			Hybrid routes	19.0	0.0
Agree	74.1	91.7			
Neutral	11.1	0.0			
Disagree	14.8	8.3			

understanding and acceptance of these practices.

Stakeholder perspectives indicate majority support for capping vehicle assignment by demand in both cities, with DAR-Tanzania showing stronger agreement and a more decisive public opinion. The polarized stance in DAR-Tanzania may lead to advocacy or opposition groups, while Accra-Ghana's notable neutral responses highlight the need for further public engagement. Tailored awareness and stakeholder strategies are essential for successful implementation in both contexts. Regarding equal vehicle or operator assignment, 74.1 % agreement in Accra-Ghana and 91.7 % in DAR-Tanzania suggest broader acceptance in DAR-Tanzania.

The findings on the current PT scheduling reveal that both cities significantly rely on queue-to-load scheduling, with Accra-Ghana showing a higher prevalence (58.5 %) compared to DAR-Tanzania (35.7 %). DAR-Tanzania demonstrates a more structured approach with a greater emphasis on formal scheduling, while Accra-Ghana relies more on predetermined frequency to maintain regular service intervals. Preferences for PT scheduling also differ, as Accra-Ghana prioritizes formal scheduling and predetermined frequency, whereas DAR-Tanzania favors predetermined departure and queue-to-load scheduling. These variations reflect distinct operational strategies and needs of each city, shaping the effectiveness and user experience of their PT systems.

Stakeholder perspectives on preferred PT route systems reveal distinct approaches in both cities. Accra-Ghana prioritizes trunk and hybrid routes, indicating a centralized and flexible route system focused on main thoroughfares and diverse passenger options. DAR-Tanzania emphasizes feeder and express routes, reflecting a more distributed and efficient system designed to manage high passenger volumes and alleviate congestion. Both cities maintain similar percentages of rapid routes, showcasing shared strategies for speedier service. These differences highlight unique PT management strategies, with Accra-Ghana leaning toward centralization and flexibility and DAR-Tanzania favoring distribution and efficiency. The following highlights respondents' comments on service zones and route delineation in both cities.

A respondent from Accra-Ghana said: "Some improvements can be made on the existing service zones and routes. Focus should be placed on routes in remote communities. The system will largely improve the public transport system if measures are put in place to ensure that drivers especially do not capitalise by way of dividing the routes into bits and have different fares to make profit. Furthermore, effort should be made to bring all drivers into the unions."

A respondent from DAR-Tanzania said: "The routes are still not the same because there are some areas where the routes have not been built yet, so there are still challenges with transport. Also, some routes with a big challenge of queues, for example Mbagala, the queues are big, so an alternative method is needed to balance and make new routes in some areas."

Table 8
Stakeholder views on passenger information in Accra-Ghana and DAR-Tanzania.

Variable	Percent – Gh.	Percent – Tanz.	Variable	Percent – Gh.	Percent – Tanz.
Provide basic route Info.			Provide PT Info. desk		
Agree	87.0	91.7	Agree	92.6	90.9
Neutral	13.0	0.0	Neutral	7.4	9.1
Disagree	0.0	8.3	Disagree	0.0	0.0
Identify PT routes			Ensure accurate information		
Agree	91.3	91.7	Agree	92.6	72.7
Neutral	8.7	8.3	Neutral	3.7	18.2
Disagree	0.0	0.0	Disagree	3.7	9.1

3.6. Passenger information system

Information on passenger information in both cities is presented [Table 8](#). The findings reveal a high level of agreement on providing basic route information in both cities, with 87 % in Accra-Ghana, and 91.7 % in DAR-Tanzania. While Accra-Ghana's notable neutral responses highlight areas for improvement, DAR-Tanzania's minor disagreements suggest opportunities for fine-tuning satisfaction. Regarding identification information for PT routes, both cities exhibit strong consensus and uniformity, with high agreement levels, minimal neutral responses, and no disagreements, indicating a clear and consistent understanding of PT routes.

Stakeholder perspectives demonstrate strong agreement on the provision of PT information desks in both cities, with over 90 % agreement and no disagreement. A slight variation in neutral responses suggests the potential for enhancing public satisfaction or awareness in DAR-Tanzania. Regarding accurate passenger information, Accra-Ghana shows higher agreement, reflecting more effective PT planning, while DAR-Tanzania's higher neutrality and disagreement indicate challenges in providing precise route information. These findings highlight the need for tailored strategies to improve passenger information systems in both cities. The following highlights respondents' comments on passenger information systems in both cities.

A respondent from Accra-Ghana said: "Public transport is very important, but on the side of the disable, it's very challenging. The bus stop, driver, and the buses are not friendly. The Passenger Information System will enable transport operators to trace their passengers and meet their demands. The passengers will also develop a sense of trust and security with the system."

A respondent from DAR-Tanzania said: "The routes information is necessary from start to destination also with information of the bus fares in general everything should be transparent and organized."

3.7. Operation procedures

Information on operational procedures in both cities is presented [Table 9](#). The findings show that professional etiquette holds greater value in Accra-Ghana than in DAR-Tanzania, suggesting stricter formalities in Accra-Ghana and a more casual approach in DAR-Tanzania. Stakeholders in both cities strongly prefer distinct uniforms for operators, emphasizing the need to consider cultural nuances when implementing uniform policies. The shared preference for uniformity in professional appearance underscores its role in enhancing organizational identity and professionalism.

The findings reveal strong support for professional certification in Accra-Ghana (85.2 %) and DAR, Tanzania (91.7 %), indicating widespread approval for policies promoting standardization and regulation across professional settings. Variations in neutral and disagreement responses suggest differing levels of acceptance and potential challenges, which could shape the structure and implementation of training initiatives. The notably higher agreement in DAR-Tanzania highlights a competitive and quality-driven market, influencing the approach of PT businesses and professionals toward certification and ongoing skill development.

Concerning stakeholder perspectives on preferred operational procedures, the findings indicate that both cities prioritize safe driving, customer service, and lost-and-found procedures. Accra-Ghana places greater emphasis on professional behavior and vehicle maintenance, reflecting a commitment to high service standards. However, the lower focus on stop announcements and road-sharing practices suggest areas needing improvement. DAR-Tanzania prioritizes safety and passenger communication, as seen in higher percentages for safe driving and stop announcements. Yet, the lower focus on vehicle cleanliness and professional conduct highlights potential areas for enhancement. These contrasts underscore the distinct operational priorities and challenges in each city, offering insights into tailored improvements in public transport services. The following highlights respondents' comments on

Table 9

Information on operational procedures in Accra-Ghana and DAR-Tanzania.

Variable	Percent – Gh.	Percent – Tanz.	Variable	Percent – Gh.	Percent – Tanz.
Professional etiquette			Preferred operational procedures		
Yes	57.7	22.2	Safe driving and operation	12.4	13.5
Somewhat	19.2	11.1	Well-functioning vehicle	12.4	10.1
No	23.1	66.7	Customer service	11.9	12.4
Operators need distinct uniform			Professional behavior	12.9	10.1
Agree	88.5	91.7	Professional Uniforms	10.4	12.4
Neutral	11.5	0.0	Clean vehicle	12.4	4.5
Disagree	0.0	8.3	Stop Announcements	2.5	10.1
Require professional certification			Lost and found service	10.9	10.1
Agree	85.2	91.7	Serving passengers with disabilities	10.4	9.0
Neutral	11.1	0.0	Share road with pedestrians and cyclists	4.0	7.9
Disagree	3.7	8.3			

operating procedures in both cities.

A respondent from Accra-Ghana said: “The operations are okay but we need some improvements in personal hygiene and dressing of bus conductors and drivers to promote respect and also make passengers feel welcomed. They should ensure the safety and security of passengers. Occasional education, as well as enforcement of rules and regulations are needed.”

A respondent from DAR-Tanzania said: “They should provide a good service for passengers, avoid a delay time and waiting time in bus stops/terminals, supply adequate buses, and have good traffic management.”

3.8. Capacity building needs

Information on capacity-building needs in both cities is presented [Table 10](#). The findings reveal a shared challenge in stakeholder capacity, with 68 % in Accra-Ghana, and 54.5 % in DAR-Tanzania, indicating insufficient capacity. While DAR-Tanzania shows a slightly higher sufficiency rate, both cities face significant gaps. Capacity needs differ, as DAR-Tanzania prioritizes PT operations, safe driving, and customer service, reflecting a demand for skilled personnel in these areas. Additionally, it highlights the need for improved traffic management, financial oversight, and customer satisfaction. Conversely, Accra-Ghana focuses on professional certification, PT regulations, vehicle maintenance, financial and personnel management, and basic ICT skills, emphasizing a need for certified professionals, compliance with standards, and enhanced human resource and technological capabilities. Both cities share a common need for improved road safety, underscoring its importance in addressing PT challenges.

Table 10

Information on capacity building needs in Accra-Ghana and DAR-Tanzania.

Variable	Percent – Gh.	Percent – Tanz.	Variable	Percent – Gh.	Percent – Tanz.
Stakeholder capacity is enough			Local government capacities needed		
Yes	32.0	45.5	Public transport planning	15.0	17.4
No	68.0	54.5	Public transport operations	12.4	8.7
Capacities needed			Traffic management	15.7	15.2
Public transport operations	11.6	13.3	Transport (Road) Safety	15.0	10.9
Safe driving and operation	12.1	14.5	PT regulations and standards	15.7	15.2
Professional certification	9.2	7.2	PT policy development	11.1	17.4
PT regulations, standards, and compliance	11.1	9.6	PT infrastructure maintenance and management	15.0	15.2
Traffic management	8.2	9.6	Preferred operator and local government partnerships		
Transport (Road) Safety	10.6	10.8	Regular engagements, workshops	23.6	22.7
Customer service	9.2	12.0	Channels for communication and resolution of issues	21.8	20.5
Vehicle maintenance and management	11.6	9.6	Establish transparent standard operating procedures	21.8	20.5
Financial management and budgeting	5.8	7.2	Establish a support system e.g., training for operators	18.2	25.0
Personnel management	5.8	4.8	Establish a professional association	14.5	11.4
Basic ICT	4.8	1.2			
Build operators and local government partnerships					
Agree	37.0	50.0			
Neutral	44.4	8.3			
Disagree	18.5	41.7			

conductors, driver unions, and local government on customer service and transport road safety.”

A respondent from DAR-Tanzania said: “In order to achieve better results, it is important for those with the authority to manage the sector to consider the opinions of stakeholders and to work and not end up in the office.”

4. Conclusion and implications

This study presents a detailed comparative analysis of PT in Accra-Ghana and DAR-Tanzania, focusing on stakeholder profiles, existing PT systems, route configurations, fares, vehicle allocation, service zones, passenger information, operational procedures, and capacity-building needs. Both cities face common challenges, including gender imbalance among stakeholders, high operational costs, inadequate fare structures, and a need for capacity development. Nevertheless, they demonstrate a shared commitment to enhancing their PT systems through improved route planning, vehicle distribution, and passenger information services. The findings emphasize the necessity of tailored approaches to effectively address the distinct needs and challenges of each city's PT system.

The comparative analysis of PT systems in Accra-Ghana and DAR-Tanzania reveals significant insights into the operational dynamics, stakeholder perspectives, and areas for improvement in both cities. The study highlights a pronounced gender imbalance among stakeholders, with more male dominance in both cities. Both cities exhibit a high level of stakeholder experience and commitment to the PT business, indicating a stable and experienced workforce. The current PT systems in both cities show distinct preferences and challenges. DAR-Tanzania relies more on buses and two- and three-wheelers, while Accra-Ghana has a higher prevalence of taxis and ride-hailing services. Stakeholders in both cities agree on the importance of good knowledge and understanding of PT for improved service delivery and fare estimation to reduce conflicts.

Despite the shared challenges, such as higher operating costs in Accra-Ghana and the need for better road conditions in DAR-Tanzania. Stakeholders in both cities overwhelmingly support modifying or reorganizing the current PT systems. The demand for new services, route expansion, and improved customer service reflects a broader need for enhancing PT efficiency and accessibility. The study also underscores the importance of transparent fare structures, professional certification, and stakeholder capacity building. While both cities face challenges in these areas, the findings suggest tailored approaches to address the unique needs and priorities of each city. By leveraging these insights, policymakers and urban planners can develop targeted interventions to improve PT services, enhance stakeholder engagement, and ultimately create more efficient and sustainable urban transport systems in Accra-Ghana and DAR-Tanzania.

These findings have several policy implications to develop the SPAS for improving PT in Accra-Ghana and DAR-Tanzania and, by extension, SSA cities. Addressing gender imbalance among stakeholders is crucial as policies aimed at encouraging female participation in the PT sector can help create a more inclusive and diverse workforce. Also, improving road conditions in DAR-Tanzania and reducing operating costs in Accra-Ghana should be prioritized. Investments in infrastructure and cost-effective measures can enhance the overall efficiency and sustainability of PT services. The demand for new services, route expansion, and improved customer service highlights the need for continuous innovation and adaptation in PT systems. Policymakers should consider implementing flexible and responsive PT policies that cater to the evolving needs of commuters. Further, transparent fare structures and professional certification are essential for building trust and ensuring high standards in PT services. Policies that promote fare transparency and professional development can lead to better service delivery and stakeholder satisfaction. Building capacity for stakeholders is vital for the long-term success of PT systems. Training programs and workshops

can equip stakeholders with the necessary skills and knowledge to navigate the complexities of the PT sector effectively. In sum, by addressing these findings and policy implications, Accra-Ghana, DAR-Tanzania, and SSA cities can create more efficient, equitable, and sustainable PT systems that meet the needs of their urban populations.

We acknowledge the study's limitations and areas of potential future research. This study faced challenges with gender imbalance, as there was a significant male dominance among stakeholders, thus limiting the diversity of perspectives. Also, the study was confined to Accra-Ghana and DAR-Tanzania, with findings that may not be generalizable to all SSA cities without further validation. Relatedly, specific operational details, such as exact figures on operating costs, fare structures, and vehicle allocations, were generalized, potentially overlooking the unique nuances of each city's PT system. Future studies should cross-reference self-reported data with objective measures or external sources to enhance the reliability of the results. External socioeconomic and political factors influencing PT were not deeply explored, potentially affecting the comprehensiveness of the analysis. Future studies should adopt more robust methodologies, expand the scope of analysis, and engage a wider range of stakeholders to provide a more comprehensive understanding of PT systems. This can help create more inclusive and accurate knowledge to support the development of effective and sustainable urban transport solutions. Despite these limitations, the study offers valuable insights into the PT systems in Accra-Ghana and DAR-Tanzania. By acknowledging and addressing these constraints, future research can build on these findings and contribute to a more efficient, equitable, and sustainable PT system in SSA cities.

CRediT authorship contribution statement

Gift Dumedah: Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Hannibal Bwire:** Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Funding acquisition, Data curation. **Albert Mwauzi:** Writing – review & editing, Visualization, Resources, Investigation, Data curation. **Steven Jones:** Writing – review & editing, Writing – original draft, Validation, Funding acquisition, Formal analysis, Conceptualization.

Informed consent

All study participants were informed of the study, offered voluntary participation, and informed of their privacy. Participant consent was collected verbally. This was carried out by reading out loud the nature and purpose of the study to the participants and explaining it to them before administering the study instrument. We used verbal consent to ensure clarity of information, verification, and documentation.

Ethics

Institutional Review Board, the HuSSREC, Humanities and Social Sciences Research Ethics Committee, approved the study protocol (Ref: HuSSREC/AP/117/VOL. 2).

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Gift Dumedah reports financial support was provided by Volvo Research and Educational Foundations. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Appendix

Section A: Stakeholder Background and Goals

1. What is the name of **your agency**?

.....

2. What **role(s)/activities** does/do your agency carry out in this/these community(ies)?

.....

3. What is your **position (or rank)** in your agency?

.....

4. What is **your role or what activities** do you carry out in your agency?

.....

5. What is **your sex**?

- a) Male
- b) Female

6. Number of years involved in public/private transport business.

- a) < 1 year
- b) 1 – 3 years
- c) 4 – 6 years
- d) 7 – 10 years
- e) >10 years

Section B: The Current Public Transport System

7. Which **modes of public transport** do you frequently use or operate? Tick all that apply.

- a) Bus
- b) Minibus [e.g. Trotro]
- c) Taxi
- d) Ride-hailing [Uber, Bolt, Yango, etc.]
- e) Three-wheeler [Pragia]
- f) Two-wheeler [Motorbike]
- g) None

8. The **current public transport system** is effective – it is serving its purpose very well.

- a) Agree
- b) Neutral
- c) Disagree

Other comments

.....

9. Would you like the current public transport system **modified or reorganized**?

- a) Yes
- b) No

Please explain your response.

.....

10. If **Yes above**, what would you like added, taken away, or modified? Tick all that apply.

- a) New routes
- b) New services – express, local, etc.
- c) Fair and transparent fares
- c) One fare – integrated fare system
- d) Improved customer service
- e) Service zones
- f) Ticketed fares
- g) Mobile ticketing
- h) Integrated service [e.g. Minibus, Taxi]

Other factors and comments.

.....

11. Good **knowledge and understanding** of the public transport system for stakeholders will improve its service delivery.

- a) Agree
- b) Neutral
- c) Disagree

Other comments

.....

12. Good **knowledge and understanding of fare** estimation for the public transport system for stakeholders will reduce conflict and improve service delivery.

- a) Agree
- b) Neutral
- c) Disagree

Other comments

.....

13. Public transport and its **fares** affect my agency's goals and activities.

- a) Agree
- b) Neutral
- c) Disagree

Other comments

.....

 14. Your general comments about **the current public transport system** in your city.

.....
Section C: Route Setup and Fares

15. Is there any agency responsible for coordinating the **setting up of routes** for public transport?

- a) Yes
 b) No

Other comments

16. Does your agency participate in setting up **routes for public transport**?

- a) Yes
 b) No

Other comments

17. Which agencies/stakeholders do you know to participate in setting up **routes for public transport**?

.....

 18. What factors/criteria do you know are considered or used in setting up **routes for public transport**? Tick all that apply.

- a) Passenger demand
 b) Vehicle supply
 c) Fare
 d) Fuel cost
 e) Operating costs
 f) Road condition
 g) Distance or duration traveled
 h) Service type [Minibus, Taxi, etc.]
 i) Spare parts cost

Other factors and comments

19. Which factors/criteria do you think should be included in setting up **routes for public transport**? Tick all that apply.

- a) Passenger demand
 b) Vehicle supply
 c) Fare
 d) Fuel cost
 e) Operating costs
 f) Road condition
 g) Distance or duration traveled
 h) Service type [Minibus, Taxi, etc.]

i) Spare parts cost

Other factors and comments

20. **Fares** for the public transport system are **transparent and clear** to everyone [e.g. drivers, operators, passengers, local government, etc.] in this city.

- a) Agree
 b) Neutral
 c) Disagree explain your response.

21. Which agency do you know coordinates the negotiation of **public transport fares**?

22. Does your agency participate in negotiating **public transport fares**?

- a) Yes
 b) No

23. Which agencies/stakeholders do you know participate in negotiating **public transport fares**?

24. What factors/criteria do you know are considered or used in calculating **public transport fares**? Tick all that apply.

- a) Passenger demand
 b) Vehicle supply
 c) Fare
 d) Affordability – the ability to pay
 e) Fuel cost
 f) Operating costs
 g) Road condition
 h) Distance or duration traveled
 i) Service type [Minibus, Taxi, etc.]
 j) Spare parts cost

Other factors and comments

25. Which factors/criteria do you think should be included in calculating **public transport fares**? Tick all that apply.

- a) Passenger demand
 b) Vehicle supply
 c) Fare
 d) Affordability – the ability to pay
 e) Fuel cost
 f) Operating costs
 g) Road condition
 h) Distance or duration traveled
 i) Service type [Minibus, Taxi, etc.]

j) Spare parts cost

Other factors and comments

.....

26. Which **fare structure(s)** are currently used by the public transport system in this study area under consideration? Tick all that apply.

- a) Flat fare: same fares regardless of distance traveled, or passenger category.
- b) Distance-based: charge by distance traveled.
- c) Zonal fares: charged by the number of zones traveled.
- d) Time-based: fares varied by time of day, e.g., peak, off-peak fares.
- e) Mode fare: charged by travel mode, e.g., Minibus, Taxi, etc.
- f) Concession or discount: based on rider characteristics [e.g., children, elderly, school kids, etc.]

Other factors and comments

.....

27. Which **fare structure(s)** do you think should be used by the public transport system in this study area under consideration? Tick all that apply.

- a) Flat fare: same fares regardless of distance traveled, or passenger category.
- b) Distance-based: charge by distance traveled.
- c) Zonal fares: charged by the number of zones traveled
- d) Time-based: fares varied by time of day, e.g., peak, off-peak fares.
- e) Mode fare: charged by travel mode, e.g., Minibus, Taxi, etc.
- f) Concession or discount: based on rider characteristics [e.g. children, elderly, school kids, etc.]

Other factors and comments

.....

28. **Current fares** for the public transport system are very high [i.e., expensive].

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

29. **Current fares** for the public transport system are too low [i.e., cheap] for quality service.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

30. I prefer that **all fares** for the public transport system be **ticketed**.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

31. I prefer that fares for all public transport services be **integrated into one system**.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

32. Do you know about any **fare policy** for the public transport system in your city/country?

- a) Yes
- b) NoPlease explain your response.

.....

33. Your general comments about **route setup and fares** in the public transport in your city.

.....

Section D: Vehicle Allocation & Route Ranking

34. Does your agency participate in **registering or allocating vehicles** to public transport routes?

- a) Yes
- b) No

35. Which agencies/stakeholders do you know to participate in **registering or allocating vehicles** to public transport routes?

.....

36. What factors/criteria do you know are considered or used in **registering or allocating vehicles** to public transport routes? Tick all that apply.

- a) Vehicle characteristics
- b) Road condition
- c) Route distance or duration
- d) Service type [Minibus, Taxi, etc.]
- e) Existing vehicle supply
- f) Passenger demand

Other factors and comments

.....

37. Which factors/criteria do you think should be included in **registering or allocating vehicles** to public transport routes?
Tick all that apply.

- a) Vehicle characteristics
- b) Road condition
- c) Route distance or duration
- d) Service type [Minibus, Taxi, etc.]
- e) Existing vehicle supply
- f) Passenger demand

Other factors and comments

.....

.....

38. There are **too many vehicles** allocated to routes in the current transport system.

- a) Agree
- b) Neutral
- c) Disagree

Other factors and comments

.....

.....

39. Basic amenities [parking lot, waiting area, washroom/toilet, lighting, etc.] at bus terminals are highly inadequate.

- a) Agree
- b) Neutral
- c) Disagree

Other factors and comments

.....

.....

40. **Demand for transport services** is higher than supply in the current public transport system.

- a) Agree
- b) Neutral
- c) Disagree

Other factors and comments

.....

.....

41. Are all public transport **routes** where you operate **ranked the same**?

- a) Yes
- b) No

Please explain your response.

.....

.....

42. Which agencies/stakeholders do you know to participate in **ranking** public transport routes?

.....

.....

43. What factors/criteria do you know are considered or used in **ranking** public transport routes?

- a) Passenger demand
- b) Vehicle supply
- c) Fare
- d) Road condition
- e) Route distance or duration
- f) Service type [Minibus, Taxi, etc.]

Other factors and comments

.....

.....

44. Which factors/criteria do you think should be included in **ranking** public transport routes?

- a) Passenger demand
- b) Vehicle supply
- c) Fare
- d) Road condition
- e) Route distance or duration
- f) Service type [Minibus, Taxi, etc.]

Other factors and comments

.....

.....

45. All **public transport modes** [minibus, taxi, three-wheelers] should **be integrated** to work together and run different services.

- a) Agree
- b) Neutral
- c) Disagree

Other factors and comments

.....

.....

46. Your general comments on **vehicle allocation and route ranking** in the public transport system.

.....

.....

Section E: Service Zones & Route Delineation

47. Is the current public transport system **structured into service zones** in your city?

- a) Yes
- b) No

Please explain your response.

.....

.....

48. I prefer that the public transport system is **structured into service zones** in this city.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

49. I prefer that the public transport **vehicles** are assigned to **dedicated routes**.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

50. I prefer that the number of **vehicles** assigned to routes is **capped in proportion to the passenger demand**.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

51. The public transport vehicles should be **scheduled** so that each operator has **equal opportunities to earn revenue** and operates in accordance with his/her allotted schedule.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

52. **Which scheduling** of public transport vehicles are currently used in this city? Tick all that apply.

- a) Formal scheduling: departure and arrival times, frequencies at different times and stops are specified
- b) Predetermined frequency scheduling: e.g. every 10mins from 0600 to 0900, etc.
- c) Predetermined departure scheduling: dispatch at specified times, e.g. 0600, 0630, 0700, etc.
- d) Queue-to-load scheduling: queue at the terminal until fully loaded before departing

Other scheduling and comment

.....

.....

53. **Which scheduling** of public transport vehicles would you prefer are used in this city? Tick all that apply.

- a) Formal scheduling: departure and arrival times, frequencies at different times and stops are specified
- b) Predetermined frequency scheduling: e.g. every 10mins from 0600 to 0900, etc.
- c) Predetermined departure scheduling: dispatch at specified times, e.g. 0600, 0630, 0700, etc.
- d) Queue-to-load scheduling: queue at the terminal until fully loaded before departing

Other scheduling and comment

.....

.....

54. What **kinds of routes** would you prefer for the public transport system? Tick all that apply.

- a) Trunk routes
- b) Feeder routes
- c) Rapid routes
- d) Express routes
- e) Hybrid routes

Other route types and comments

.....

.....

55. Your general comments on **service zones and route delineation** in the public transport system.

.....

.....

Section F: Passenger Information System

56. I prefer that the public transport system provide **basic route information** [e.g. origin and destination terminals, intervening stops, fare, operating hours, etc.] for all journeys.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

57. I prefer that all public transport routes and their **vehicles are clearly identified** for all journeys.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

58. I prefer that all public transport terminals have **information desks** [for inquiries and complaints] that are well-resourced with trained personnel.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

59. I prefer that all **passenger information** for the public transport system is **accurate**, up-to-date, openly available and accessible.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

.....

.....

60. Your general comments on the **passenger information system** for public transport services.

Section G: Operation Procedures

61. All current **operators** [e.g. drivers, conductors, patrons, etc.] of the public transport system are **well-trained**, professional, and have appropriate professional etiquette.

- a) Yes
- b) Somewhat
- c) No Please explain your response.

62. I prefer that all **operators** [e.g. drivers, conductors, patrons, etc.] of the public transport system are in **distinct uniform with identification tags**

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

63. I prefer that all **operators** [e.g. drivers, conductors, patrons, etc.] of the public transport system are **certified** through accredited and professional certification.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

64. What **operational procedures** would you like to see in the public transport system in your city? Tick all that apply.

- a) Safe driving and operation
- b) Well-functioning vehicle
- c) Customer service
- d) Professional behaviour
- e) Professional Appearance/Uniforms
- f) Clean vehicle
- g) Stop Announcements
- h) Lost and found items
- i) Serving passengers with disabilities
- j) Sharing the road with cyclists and pedestrians

Please explain your response.

65. Your general comments on **operation procedures** in the public transport system.

Section H: Capacity Building Needs

66. The **capacities of stakeholders** [drivers, operators, local government, transport agencies, etc.] in the public transport system are sufficiently adequate for effective service delivery.

- a) Yes
- c) No

Please explain your response.

67. What **capacity needs** would you like to see built for **public transport operators** [drivers, conductors, patrons, etc.]? Tick all that apply.

- a) Public transport operations
- b) Safe driving and operation
- c) Professional certification
- d) Public transport regulations, standards, and compliance
- e) Traffic management
- f) Transport (Road) Safety
- g) Customer service
- h) Vehicle maintenance and management
- i) Financial management and budgeting
- j) Personnel management
- k) Basic ICT

Other factors and comments

68. What **capacity needs** would you like to see built for **local government and public officials**? Tick all that apply.

- a) Public transport planning
- b) Public transport operations
- c) Traffic management
- d) Transport (Road) Safety
- e) Public transport regulations, standards, and enforcement
- f) Public transport policy development
- g) Public transport infrastructure maintenance and management

Other factors and comments

69. **Partnerships and collaborations** between public transport operators [drivers, conductors, patrons, driver unions, etc.] and local government [regulators, policy makers, law enforcement, etc.] are strong and healthy.

- a) Agree
- b) Neutral
- c) Disagree

Please explain your response.

70. In what ways can **partnerships and collaborations** between public transport operators [drivers, conductors, patrons, driver unions, etc.] and local government [regulators, policy makers, law enforcement, etc.] be made stronger? Tick all that apply.

- a) Regular engagements, e.g., workshops
- b) Establish channels for communication and resolution of issues.

- c) Establish transparent standard operating procedures.
- d) Establish a support system [e.g., training, sponsorship, etc.] for public transport operators.
- e) Establish a professional association.

Other factors and comments

71. Your general comments on **capacity building needs** for the public transport system.

72. Your final comments about the **public transport system** in your city.

END

Data availability

Data will be made available on request.

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