

HOW JUST IS PUBLIC TRANSPORT IN EAST AFRICAN CITIES?

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Introduction

01

Public transport is most often associated with the provision of collective transport to support the intra-urban mobility needs of an urban population (Mulley & Nelson, 2019).

Governments provide public transport as an important social service in urban areas because it provides a travel mode option for those who would otherwise have none (Murray & Davis, 2001). Research has shown that lacking enough public transport services can contribute to social exclusion and a poor quality of life (Currie & Delbosc, 2010). The problem of transport provision and transport-related social exclusion in African urban areas is severe and complex. The cost of public transport is high relative to households' budgets, making it unaffordable for the urban poor.

In African cities, while the average household spends between 5% to 27.5 % of their daily budget on public transport, the poorest quintile can spend between 53 % and 100 % of their budget on public transport (Kubar & Barret, 2008).

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As a consequence, a large percentage of trips are made on foot, reaching between 30% to 45% in Nairobi, Lagos, and Addis Ababa, and up to 70% in Dar es Salaam and Kampala, with over 50% belonging to a low-income bracket (Haas, 2017; IAPT, 2010). This, in turn, restricts job searches to the territories within walking distance, ultimately excluding the urban poor from potential job opportunities (Vinay et al., 2017).

Public transport challenges in African cities have been exacerbated by the ongoing Covid-19 pandemic. The crisis and the measures taken by governments to deal with the pandemic have deeply affected people's mobility and the public transport sector in Africa (World Bank, 2020). For example, because many cities implemented measures to reduce passenger loads, there is a reduced supply of public transport services. There is also reduced demand for public transport, as governments put in place actions to reduce the movement of people. Due to reduced demand and decreasing revenue, the public transport sector is under financial stress, which in many cases resulted in fare increases. This, in turn, has affected the ability of low-income segments of the population to travel (World Bank, 2020). The Covid-19 pandemic has also exacerbated the vulnerability of transport sector workers, particularly minibuss drivers and conductors in the paratransit system (World Bank, 2020).

Within this context, this working paper examines how just public transport in African cities is seeking to contribute to the larger effort by the Friedrich Ebert Stiftung (FES) of advancing the just city in Africa and promoting just urban outcomes for the “urban invisibles”. The concept of a “Just City” constitutes an attempt to deal with approaches to urban development that produce unjust outcomes. Such conceptualization of the just city is based on a core belief of human dignity based on African values as the starting point for living in the city and is based on four pillars: dignity, equity and diversity, rights and responsibilities, and democracy.¹ The just city is a gateway to advance just urban outcomes amongst what FES calls the “urban invisibles”. By “urban invisibles” FES refers to the most marginalized groups in African urban areas that are invisible in policy and practice and are key recipients of injustice with no means of escaping from it. Specifically, FES puts forward the existence of “mobility invisibles”, which refers to groups of people that find it difficult or impossible to use urban modes of transport (FES, 2020).

This working paper attempts to answer the following questions:

- Which urban mobility solutions have proliferated in African cities, and why?
- How just is public transport in East African cities?
- What would it take to achieve a public transport that is more just?
- How has the ongoing Covid-19 pandemic affected how just public transport is in African cities?

To answer these questions, a study of two urban regions in East Africa was conducted

with the support of FES country offices. The cases of Dar es Salaam (DAR), Tanzania, and Kampala Metropolitan Area (KMA), Uganda, were studied. Both DAR and KMA are among the fastest growing African metropolitan areas and their urban sprawl patterns continue to put enormous pressure over their transport systems (Joseph et al., 2021; Vermeiren et al., 2012).² While both case studies are in East Africa, the results of this study aim at identifying findings and producing insights applicable to other regions across Africa.

This study analyzes public transport in the case studies through the lens of the Socially Just Public Transport Pillars as proposed by FES (2020), which entails examining five key pillars:

- Availability,
- Safe and affordable access,
- Inclusion,
- Human rights and equity, and
- Sustainability.

The results of the study show how and why, when seen through the lenses of the Socially Just Public Transport Pillars, public transport systems in DAR and KMA are far from just. Nevertheless, the study allowed to identify actions to advance a more just public transport in the case studies. Investing in roads infrastructure in territories with low availability of minibus services and implementing policies to lower the fare of public transport are strategies to improve *availability* and *affordability* of public transport, which in turn would contribute to public *transport* as a *human right*, more *equitable*, and more *sustainable*.

1 For a thorough review of FES's conceptualization of the just city in Africa see FES (2020), pp. 7-19.

2 Dar es Salaam (DAR) has an estimated population of 5.3 million people and is one of the most rapidly growing megacities in Africa. It is a monocentric city and 75 percent of all residential housing is built in unplanned neighborhoods (Joseph et al., 2021). Kampala Metropolitan Area (KMA) is the most productive and urbanized region of Uganda (Kiggundu et al., 2021). Comprising Kampala District, and the surrounding Wakiso, Mukono and Mpigi districts, KMA has an estimated population of 2.5 million people, contributes 40 percent of Uganda's GDP, generates 46 percent of all formal employment in the country, and hosts 70 percent of the country's manufacturing plants (KCCA, 2019; Kiggundu et al., 2021)



Public
transport and
just urban
outcomes

02

Cities provide a wide array of opportunities and services to their inhabitants: schools, hospitals, green spaces, jobs, governmental offices, consumer goods, etc.

But there is a problem. Such opportunities and services are not evenly distributed throughout urban space, and given people's residential location and socioeconomic condition, not everyone has the same level of accessibility to them (Duranton & Guerra, 2016; Geurs & van Wee, 2004; Kellerman, 2006; van Wee & Geurs, 2011). Having access to the city and its resources—including, for example, access to schools, hospitals, and other aspects of cultural, social, and economic life—is inescapably tied to a *getting to* component that is only possible by moving physically across urban spaces (Verlinghieri & Venturini, 2018). For the population that lacks the means to purchase a private vehicle, public transport systems are often the only alternative to physically move across urban spaces and reach the places offering urban opportunities and services.

Scholars have developed concepts to better understand how lack of access to public transport can produce social exclusion (Church et al., 2000; Kenyon, 2003). These concepts are useful analytical tools for an assessment of unjust urban outcomes suffered by the "mobility invisibles" in African urban areas (FES, 2020).

Transport disadvantage occurs when people in need of public transit services do not have sufficient public transit service opportunities (Murray & Davis, 2001).

Social disadvantage occurs when individuals or groups of individuals are either low-income, unemployed, or have low political engagement and participation, and lack social support (Currie & Delbosc, 2010).

When transport and social disadvantages overlap, they interact to produce what scholars call *transit poverty* (Lucas, 2012), "which in turn exacerbates the problems of [in]accessibility to opportunities, services and interactions that increase the risk of becoming socially excluded" (Oviedo & Titheridge, 2016: p. 153).

Transport-related social exclusion has been defined as "the process by which people are prevented from participating in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks, due in whole or part to insufficient mobility in a society and environment built around the assumption of high mobility" (Kenyon, 2003, p. 210). It can be argued, thus, that the "mobility invisibles" in African urban areas suffer from transport-related social exclusion.

As this literature review conveys, transport policies can serve the purpose of preventing transport poverty and social exclusion for the "mobility invisibles", thus achieving increased equity in the population's access to urban opportunities and services.

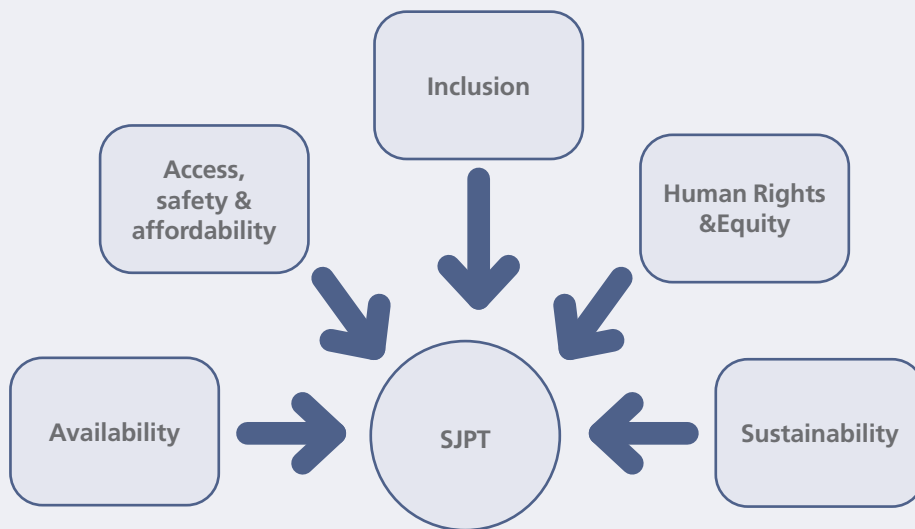
HOW JUST IS PUBLIC TRANSPORT IN EAST AFRICAN CITIES?

The just city in Africa framework proposed by FES seeks to provide a blueprint for achieving public transport outcomes that are more just. Given that the word *just* is a polysemic term that can mean different things to different people (Stone, 2012), a working definition of what *just* means in the context of public

transport must be clearly defined. This paper adopts the definition of socially just public transport developed by the Socially Just Public Transport Working Group (SJPT-WG) based in Nairobi (Figure 1).

FIGURE 1

Socially Just Public Transport Pillars Source: FES, 2020



The concept of Socially Just Public Transport as proposed by FES is based on five pillars (2020, p. 92-95):

- **Pillar 1:** Availability. Socially just public transport should be available, adequate in proportion to the needs of users, and convenient for all users. It should include different modes of transport and enhance intermodal connectivity. It should be responsive to the needs of all users, including the poor and the rich, and vulnerable populations.

- **Pillar 2:** Safe and affordable access. Public transport should ensure the safety of all users, including females, children, and passengers with special needs. Public transport should provide affordable access through mechanisms such as regulated and standardized fares that cushion poor and vulnerable populations.

- **Pillar 3:** Inclusion. A socially just public transport system should seek to reduce inequality and push for universal access while paying attention to the needs of all persons. This can be achieved by ensuring that the transport systems meet the needs and demands of different category of users.

-
- **Pillar 4:** Human rights and equity. Public transport systems should ensure that all persons have equal right of access and use of the system, and that the mobility needs of people are not curtailed by feelings of insecurity, lack of privacy, or failure to uphold human dignity. Users should have the ability to choose from different travel options and modes, as well as being able to move freely without interference. Additionally, the government and service providers have the responsibility of enabling the creation and equal access to decent jobs in the public transport sector.
-

- **Pillar 5:** Sustainability. Public transport systems must be prepared to respond to the rising public transport needs brought about by increased urbanization, while considering the challenges associated with climate change.

The Socially Just Public Transport Pillars (FES, 2020) will be used as analytical lenses for the study of how just public transport in Eastern African cities is. The pillars will also inform a discussion on what it would take for public transport in East African cities to become more just.



Methodology and
data

03

The study of public transport in DAR and KMA was conducted through a mixed-methods approach.



The **qualitative component** of the study entailed semi-structured interviews with local urban transport specialists in government, academia, and non-governmental organizations. Nine interviews were conducted, five in Kampala and four in Dar es Salaam. The interviews were analyzed through the data analysis technique of *memoing*. This technique consists of listening to the interview recordings and drafting a memo of the elements that speak to the Socially Just Public Transport Pillars as proposed by FES. The memos were then analyzed and coded, which allowed to identify emerging patterns. The semi-structured interviews combined with quantitative data availability informed the design of the quantitative component of the study.



The **quantitative analysis** consisted in calculating access to public transport indexes for both case studies following the method proposed by López-García (2021).³ The data about the available public transport systems was collected by local researchers in Uganda and Tanzania.⁴ In the case of Dar es Salaam, the access index is calculated based on walkability to stops of both the minibus (dala dalas) and the BRT systems. In the case of Kampala Metropolitan Area, the index is calculated based on walkability to minibus (taxi) stops. The assumption to produce these maps is that the populations with low access to public transport stations have no other option but to riding a motorcycle taxi (boda-boda) or walk.

³ An access index measures the availability of stops by identifying the service area of the selected public transport systems (Bhat et al., 2005). The calculation of the access index was made with the help of geographic information systems (GIS), through a series of steps. First, the stops and terminals of the selected mass transit systems were mapped, and two service zones buffers from each of them was drawn. A first buffer was set at 800m, the international standard, as used in previous studies in East Africa (Lukenangula, 2017). A second buffer was set at 1,600m, twice the international standard, aiming to account for the long distances that the population in the case studies are willing to walk (Lukenangula, 2017). Using GIS, a table with the number of times the centroid of each unit of analysis intersects with a service zone buffer was made. In the case of DAR, the unit of analysis is sub-wards, while in the case of KMA is parishes. A normalized access index was then calculated. The normalization process consisted of re-scaling the number of times a unit of analysis centroid intersects with a buffer to a scale in the range [1,0]. To do so, I employed the distance between the maximum and the minimum values in the table (Schuschny & Soto, 2009, p. 58). As the value of the index approaches 1, there is more access to public transport stops. As the value of the index approaches 0, there is less access. Finally, the access index was mapped and analyzed using GIS and five categories were created using natural breaks analysis: low, medium-low, medium, medium-high, and high.

⁴ The data for KMA was collected by Pius Tibaingana and Stevenson Ssevume. The data for Dar es Salaam was collected by Antidius Kawamala.



Research results

04

4.1 Emerging mobility solutions in East Africa



4.1.1 MINIBUSES

Called dala dalas in Dar es Salaam and taxis in Kampala, these 14-seater minibuses are the traditional and most widespread public transport system in East Africa (Andreasen & Møller-Jensen, 2017; Weingaertner et al., 2008). Privately-owned by hundreds of individual bus owners and managed through taxi-organizations, these minibus services are run with a for-profit logic by which service providers try to maximize revenue while minimizing operation cost. To do so, minibus owners resort to a series of strategies, such as adapting their routes to the corridors with high demand of trips, waiting until the minibus has enough customers to start a trip (called the full and go system), and avoiding areas of the city with bad quality roads that would increase maintenance cost. Despite having the lowest fare among existing transport systems (Kiggundu et al., 2021), the fare can still exclude the lower-income population from riding the minibuses. The supply of minibuses does not meet the demand of customers during peak hours (Andreasen & Møller-Jensen, 2017). This excess of demand manifests in the long lines that commuters must bear to board a minibus and in people sometimes having to walk to their destinations due to the lack of vehicles.



4.1.2 BODA-BODAS

These motorcycle taxis have become the fastest-growing mobility solution in East African cities since the early 2000s (Kiggundu et al., 2021). Several underlying reasons

explain this staggering rise of boda-bodas. Over the last two decades, Dar es Salaam and Kampala have urbanized rapidly (Andreasen & Møller-Jensen, 2017; Macchi et al., 2013), sprawling the functional area of their urban regions and increasing the transport needs of the population. Both cities continue to show a monocentric urban structure (Andreasen & Møller-Jensen, 2017; Goswami & Lall, 2016; Joseph et al., 2020, 2021), with most of the formal jobs and services clustered in their central business districts (CBDs). While transport needs have grown considerably, the provision of roads infrastructure to support such increasing demand has not grown at the same rate. The increased demand for trips towards the CBD in limited road infrastructure has produced severe congestion, especially during peak hours.

Within this context, boda-bodas have emerged as a transport solution able to deal with the high monocentricity of the city and its congestion. Due to their small size, boda-bodas can easily bypass traffic jams. Boda-bodas are not bounded by a fixed route – unlike the 14-seater minibus services– and can circulate through any terrain, which has made them a suitable solution to reach even the furthest and more disconnected destinations. Additionally, boda-bodas have become an important source of jobs for city dwellers, especially for the young population (API, n.d.). Today, it is estimated that there are nearly 200,000 boda-boda drivers in KMA, and the industry continues to expand (Spooner et al., 2020). All these factors have combined to produce increases both in the demand and the supply of boda-bodas. More recently, and as a response to concerns related to safety, innovative entrepreneurs have designed boda-boda e-hailing services such as the Safe Bodas in Kampala. As reported by interviewees, the boda-boda e-hailing services are mainly used by foreign residents and females due to the increased sense of safety provided by the platform.

According to participants in this study, the fares of boda-bodas can reach three to four times those of minibuses for the same ride. Furthermore, specific circumstances, such as extreme weather conditions, can provide drivers with increased bargaining power over passengers, thus increasing the fare. Despite boda-bodas becoming one of the most effective solutions to congestion, and despite reaching the transport disadvantaged territories that no other transport system can reach, their high fares take an important share of their user's income and makes them inaccessible for the low-income population.



4.1.3 BUS RAPID TRANSIT (BRT)

The concept of BRT systems has received important support from development partners such as the World Bank (WB), the African Development Bank (ADB), the Japan International Cooperation Agency (JICA), among other development agencies. Nevertheless, the BRT system in DAR has received considerable criticism related to the system's limited availability and its lack of affordability (Joseph et al., 2021; Rizzo, 2019). BRT systems have been put forward as a legitimate transport policy solution to what local actors deem as the most pressing transport-related problem in East African cities: congestion (Andreasen & Møller-Jensen, 2017; Joseph et al., 2021). The BRT system was also valued by potential commuters for its comfort, travel fare, and its potential to reduce travel times for residents of peripheral

areas (Nkurunziza et al., 2012). When facing the question of where to channel BRT investment, criteria such as high demand and efficiency have become the blueprint for distribution criteria. Implementing agencies and funding partners resort to policy analysis tools designed to identify the corridors in which BRT investment will yield the larger net utility. Directing BRT investment into the most efficient corridors is expected to achieve the goal of transport systems becoming self-financed, which is another important goal for local actors.



4.1.4 E-HAILING PLATFORMS

Since 2013, foreign-based e-hailing companies, such as Uber and Taxify, have entered the market in East African cities (ITNA, 2018). Other Africa-based e-hailing platforms have followed the example and are now trying to get their market share (Mourdoukoutas, 2017). E-hailing platforms have also played a role in job creation within African cities, with estimates suggesting that Uber alone has 60,000 drivers operating in 15 major African cities (Mourdoukoutas, 2017). While these companies have achieved a stable operation, participants in the study pointed out several challenges are in e-hailing services. First, the lack of adequate roads and severe traffic congestion makes e-hailing services a slow trip. Customers wait long periods of time for the cars to arrive and then spend considerable amounts of time in traffic jams. Additionally, the high fares for the use of e-hailing services makes them an option available only for the middle- and high-income population.



4.2 How socially just is public transport in East African cities?

4.2.1 AVAILABILITY

The results of the access index are presented in Table 1. In the case of Kampala Metropolitan Area, when the service area is set at twice the international standard – 1,600 meters – 39.1 percent of the territory has no access and 45.9 percent falls within the low category. If the service area is set at the international standard – 800 meters – then 70.6 percent of the territory lacks access to public transport. Similarly for Dar es Salaam, when the service zone is set at twice the international standard, 66.5 percent of the territory has no access to public transport stops and 26.8 percent has low access. However, if the service zone of public transport stops is set at the international standard, things look worse, as 83.1 percent of the territory lacks access at all.

Mapping of the access index allows us to confirm that in both cases, the spatial distribution of access to public transport is heavily influenced by the monocentric structure of the cities (Maps 1 to 4). While the population closest to the CBD have increased levels of access to public transport stops, the population in peripheral areas has low or no access. In the case of KMA, Map 1 – set at the international standard of 800m service zone – allows to observe that most peripheral areas lack access to public transport stops. Even when the service zone buffer is set at 1,600 meters (Map 2), only the areas closer to the CBD have medium to high access to public transport, while peripheral areas have low or no access at all.

TABLE 1:

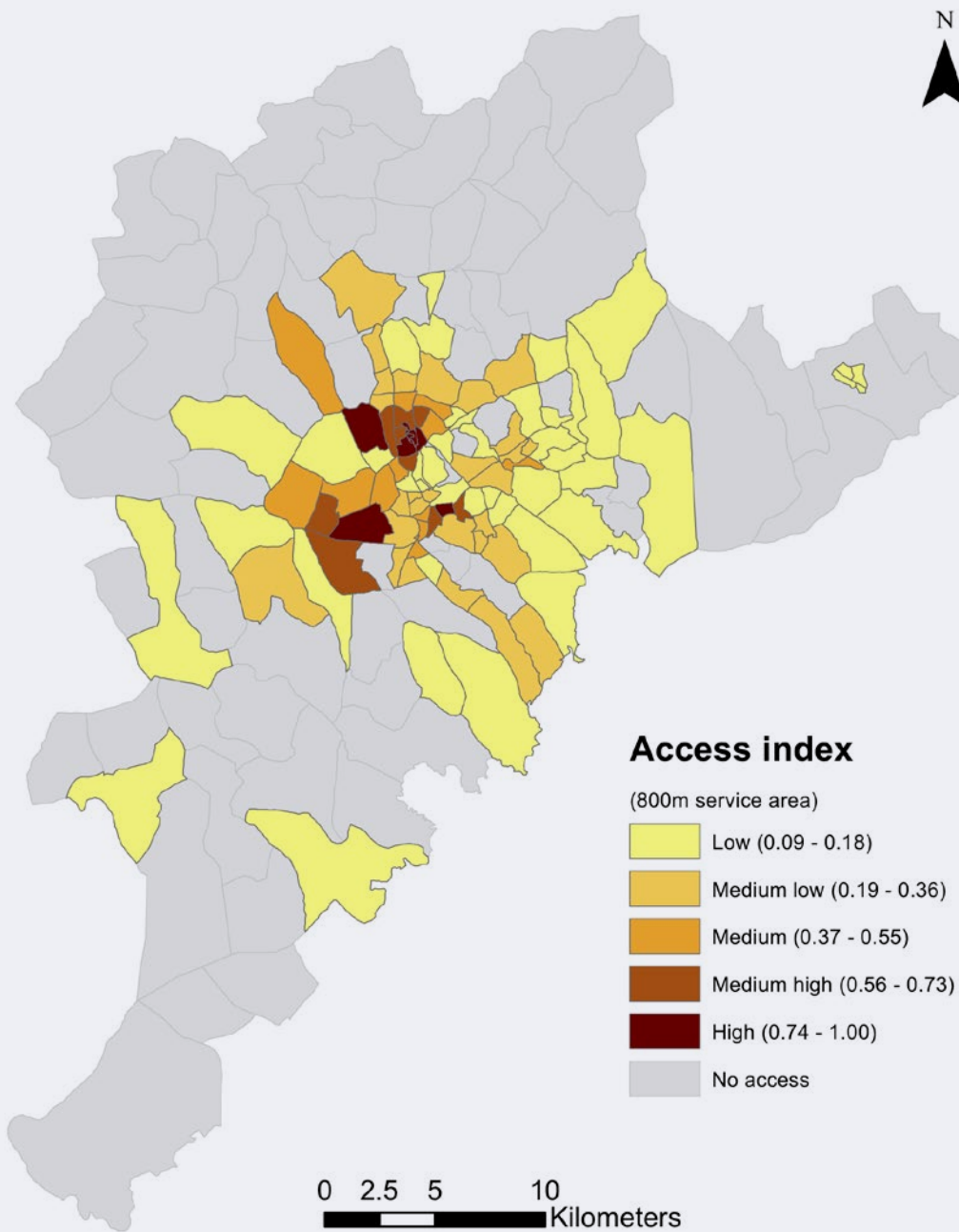
Access to public transport in Dar es Salaam and Kampala Metropolitan Region. *Source: Author's calculations based on shapefiles provided by the FES country offices of Tanzania and Uganda.*

	No access	Low	Medium low	Medium	Medium high	High	Total
Dar es Salaam							
800m buffer (Ha)	135,377.7	19,482.1	4,375.6	1,832.4	1,208.4	337.0	162,973.2
(%)	83.1	11.9	2.7	1.1	0.7	0.2	100
1,600m buffer (Ha)	108,301.1	43,677.7	4,632.3	3,106.2	2,088.9	1,167.0	162,973.2
(%)	66.5	26.8	2.8	1.9	1.3	0.7	100
Kampala Metro Area							
800m buffer (Ha)	72,949.5	20,234.3	5,914.4	2,289.1	1,124.3	803.7	103,315.4
(%)	70.6	19.6	5.7	2.2	1.1	0.8	100
1,600m buffer (Ha)	40,397.6	47,476.9	8,823.1	3,656.6	2,161.3	799.8	103,315.4
(%)	39.1	45.9	8.5	3.5	2.1	0.8	100

The case of DAR shows the same spatial pattern as the case of KMA, with the characteristic that the stations of the BRT system in DAR overlap perfectly with areas with good access to previously existing public transport stops to begin with (Maps 3 and 4). If at all, only at the western most section of the BRT system does the Dar Rapid Transit (DART) contribute to increasing public transport access among the low- and medium-income categories. A key aspect to keep in mind is that DART did not add new public transport stops to the city; it only substituted taxi stops with BRT stops.

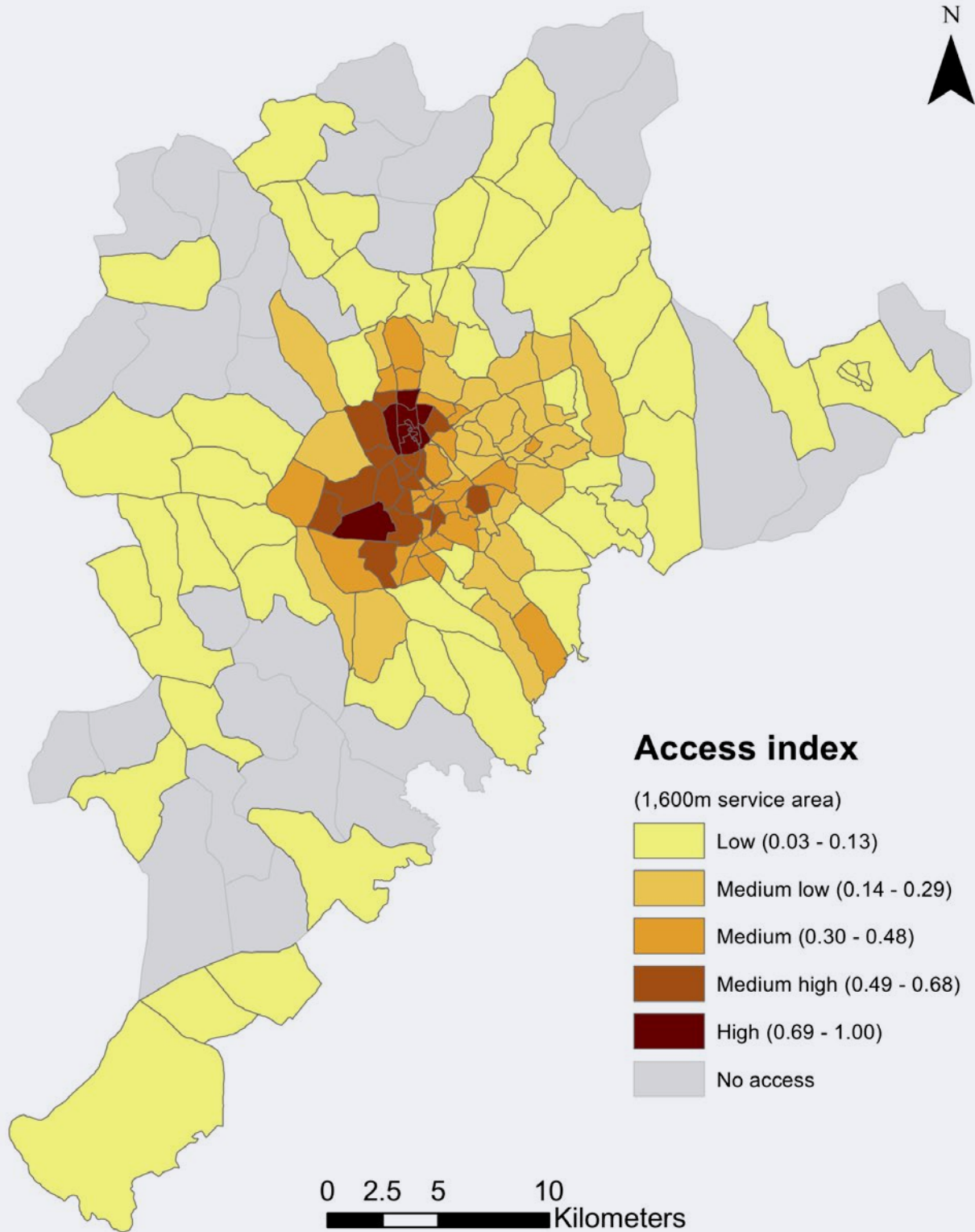
MAP 1

Access to minibus stops in KMA, 800m service zone



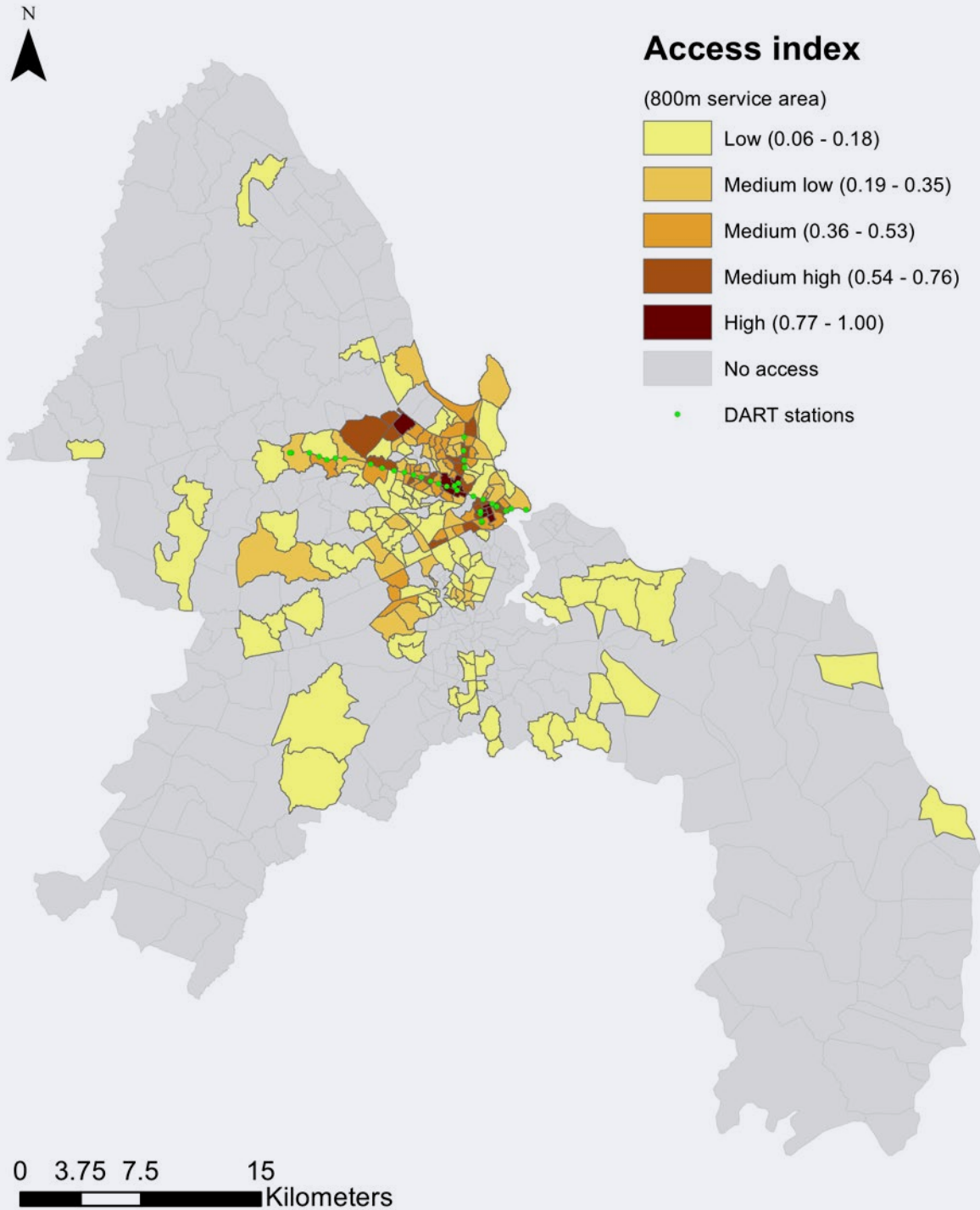
MAP 2:

Access to minibus stops in KMA, 1,600m service zone



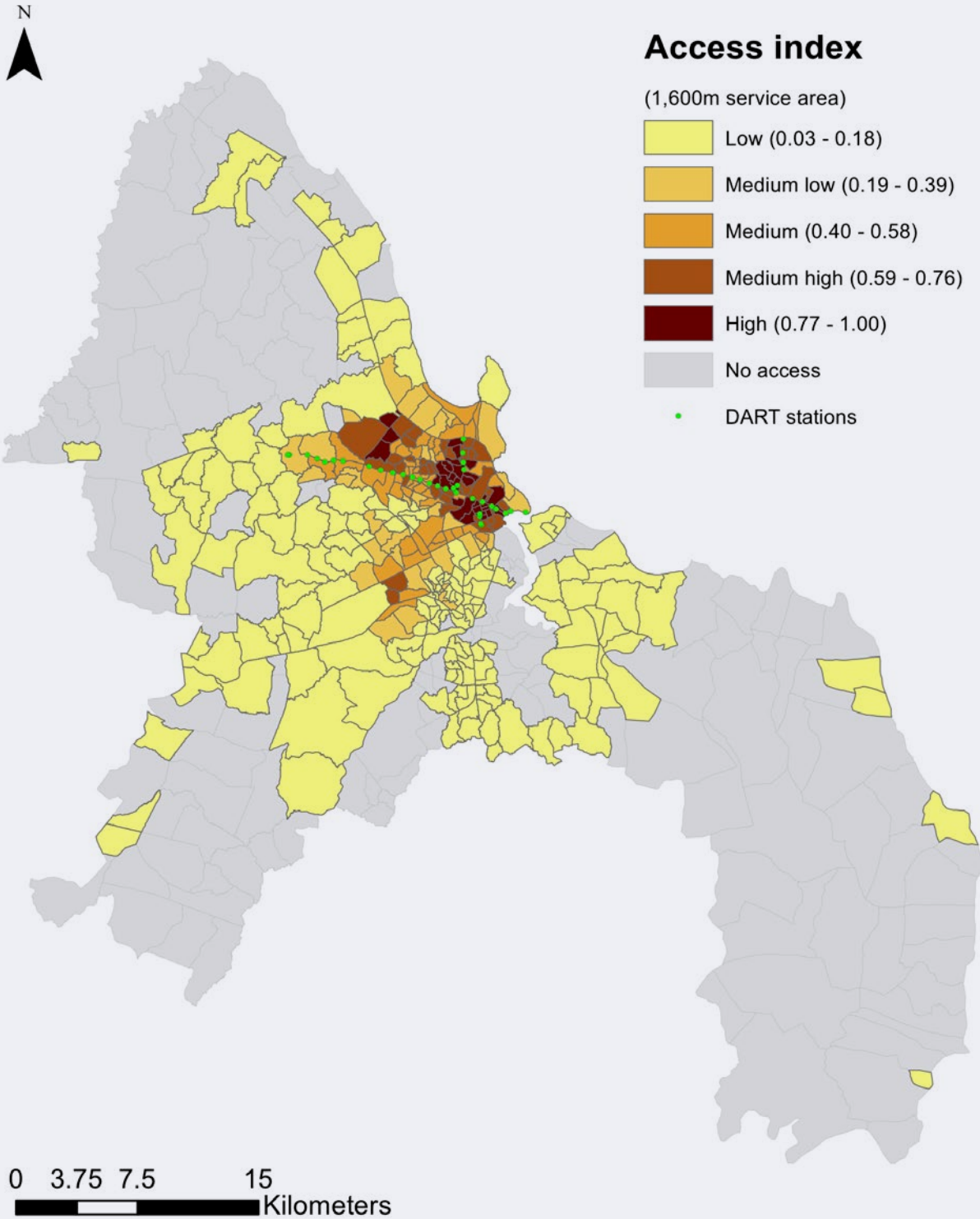
MAP 3:

Access to minibus and BRT stops in
DAR, 800m service zone



MAP 4:

Access to minibus and BRT stops in
DAR, 1,600m service zone



Deficiencies in roads infrastructure was a salient explanation among interviewees for the lack of public transport availability. The roads infrastructure in DAR and KMA is insufficient, with most secondary roads too narrow and unpaved (Joseph et al., 2021). KMA roads were constructed in the 1960s for an estimated carrying capacity of 100,000 vehicles, and yet today they are used by over 400,000 vehicles on a daily basis (Kiggundu et al., 2021). This is problematic because the minibus systems are bound to circulate through existing main roads, failing to expand coverage to territories lacking adequate roads. Additionally, an important share of new residential areas is being built in places lacking roads suitable for minibuses' circulation (Joseph et al., 2020, 2021; Kiggundu et al., 2021), leaving such places without service.

4.2.2 SAFETY AND AFFORDABILITY

Participants in the study raised several safety concerns that are well-documented by available research. There is persistent violence and harassment against women passengers in the minibus systems (Joseph et al., 2021), and the fear of being assaulted while riding boda-bodas (Kiyanga, 2021). Those who can –the middle-class and foreign residents– escape this safety concerns using e-hailing services. In the case of boda-bodas, e-hailing services such as Safe-boda allow the wealthier population to ride in a registered motorcycle with a registered driver, with the details of their trip being recorded in the e-hailing platform. There is also the concern about the safety of minibus workers due to fierce competitions for passengers. Participants in the study did report several incidents in which the competition for customers and revenue has caused violent events among minibus workers.

Affordability continues to be one of the most pressing problems in East Africa's public transport (Joseph et al., 2020, 2021; Rizzo, 2019). The 14-seater minibus services remain the most affordable mode of transport (Kiggundu et al., 2021). Nevertheless, as seen in Maps 2 and 4, most peripheral

areas have low or no access to such service, and for a large share of the population, the minibus is not an option. According to the interviewees, there are times of the day in which the carrying capacity of minibuses is too low compared to the demand, which makes it difficult for people to get ahold of a minibus. The lack of adequate road infrastructure produces severe congestion, and minibuses spend considerable time in traffic jams. Consequently, the population that has no easy access to a minibus, or that cannot afford to waste their time in a minibus, has no option but to ride a boda-boda, which can cost two to three times the price of a minibus for the same trip. Alternatively, a large share of the population prefers to do their trips by walking to cut transport costs altogether. This is especially the case for the population residing in informal housing settlements (also known as slums), usually located closer to the CBD, which enables their residents to walk to work or to search for economic opportunities (Vermeiren et al., 2012).

As explained earlier, the BRT in DAR has been advanced as a public transport solution that would alleviate congestion and make trips more affordable. The DART has received a considerable number of critics for its high fares and poor capacity. Regarding fares, the two-way ticket of DART is considerably more expensive than the same trip in a dala dala (Joseph et al., 2020). According to some calculations, a DART two-way ticket can take up to 30 percent of the daily income of 70 percent of DAR's population (Rizzo, 2019), and therefore excludes the low-income population from using the system (Rizzo, 2019; Vermeiren et al., 2015). Regarding the system's congestion, interviewees reported that DART's capacity is not enough to service its existing demand. This is especially the case during peak hours, as the high monocentricity of DAR around the CBD produces an excess of demand in the mornings and evenings. Consequently, during peak hours there are not enough buses, the capacity of the system is overwhelmed, and commuters in a rush have no option but to use a boda-boda.

The ongoing Covid-19 pandemic is also posing important safety and affordability challenges for public transport in DAR and KMA. The extent to which the pandemic is affecting public transport seems to be mediated by the duration of lockdowns and the measures imposed by the government.



In the case of DAR, where the lockdown lasted for only three months between March and May 2020, and restrictions have been almost lifted, public transport has returned to pre-pandemic scenarios. In KMA, in contrast, measures to mitigate the Covid-19 infection rates remain (KCCA, 2020), and public transport has been affected considerably.



In KMA, several Covid-related measures have negatively affected the minibus system. Minibuses were forced to reduce their capacity from 14 to 8 passengers, and due to an ongoing curfew, cars must stop circulating at six in the evening (KCCA, 2020). Minibuses' demand has decreased because there is the widespread belief that passengers purposefully avoid riding a minibus to avoid physical proximity with other people. The combination of reduced demand and reduced capacity has decreased revenue, making it more difficult for drivers to operate at a profit while still being able to pay the daily rent to bus owners for operating the vehicle (Rizzo & Atzeni, 2020). Minibus drivers have been forced to increase the fare, so passengers pay more per ride. Because of increased taxi fares, many passengers are switching to boda-bodas, contributing to decreasing the demand for minibus trips.

In addition to its effects on affordability, the pandemic is also affecting job security of workers in the public transport sector through an array of mechanisms.

First, given that most minibus stages allocate cars to drivers on a first-come-first-served basis, drivers are finding it more difficult to get ahold of a vehicle to work. Therefore, most minibus drivers are only working one out of three days.

Second, being out of work, minibus drivers have been forced to look for alternative sources of income. When not working, drivers are engaging in alternative kinds of trades and economic activity.

Third, the pandemic is affecting the number of jobs available in the minibus stages. Aiming to lower the cost of operating their vehicles, drivers are beginning to bring their wives as conductors or work without one. This allows them to offset the effects of reduced revenue.

4.2.3 INCLUSION

The extent to which public transport in East African cities pays attention to the needs of all persons has important nuances. From a universal accessibility and gender perspective, public transport can be deemed as not inclusive. Participants in the study agree that issues of universal accessibility for people with disabilities, the elderly, and children, do not hold an important place in priorities of public transport providers. Virtually all public transport vehicles lack equipment for universal accessibility (Joseph et al., 2020). Additionally, and as explained earlier, public transport excludes female passengers who feel unsafe using the system.

Aiming to bring nuance into the discussion, it should be acknowledged that other aspects about the mobility needs of the population are better satisfied by informal public transport. Recent research in DAR by Joseph et al (2021) that compares mobility perceptions after implementation of DART found that in the eyes of passengers, traditional public transport is more inclusive than the BRT.

For instance, minibuses and boda-bodas continue to have a lower fare, connect people with remote neighborhoods and places outside the major roads, and the possibility to commute with goods (Joseph et al., 2021). In this way, given the specific needs of the population in East African cities, informal public transport could in some cases be considered more inclusive than formal solutions such as the BRT.

4.2.4 HUMAN RIGHTS AND EQUITY

As the findings of this study should have made clear by now, in DAR and KAM the population does not have equal right of access and use of public transport.

- The low-income population is outpriced from using any kind of public transport, and instead they are forced to walk. The population does not have the ability to choose from different travel options and modes. As shown by Maps 2 and 4, the population in peripheral areas has no access to minibus services and instead they are forced to ride a more expensive boda-boda or to walk.
- Traffic jams also push the population away from minibuses and into boda-bodas.
- Safety concerns push those who can afford it into a Safe-boda. Even the BRT system in DAR cannot be an option for a large share of the population due to long waiting times, overcrowding in buses and stations, and difficulties to commute with goods (Joseph et al., 2021).
- Regarding equal access to decent jobs in the public transport sector, both existing research and interviewees point to the precarity of transport-related jobs. For instance, estimates for KMA suggest that only nine percent of the minibus crew have written agreements with employers, working hours are extremely long, with 36 percent of the crew reporting working more than 15 hours per day, and earnings for drivers employed informally can fluctuate considerably (Spooner et al., 2020).

4.2.5 SUSTAINABILITY

By this point, the evidence presented so far should make it clear that public transport systems in East Africa are not prepared to respond to the rising mobility needs brought about by their increased urbanization. DAR and KMA are urbanizing rapidly (Joseph et al., 2021; Vermeiren et al., 2012), and the high monocentricity of their urban structure (Goswami & Lall, 2016) means that the mobility demand towards the CBD will continue to increase at a dramatic pace. Nor DAR or KMA are preparing their transport systems for this challenge. Their governments have not invested in expanding the roads network and their capacity since the seventies (Kiggundu et al., 2021). As explained by the interviewees, the lack of adequate roads limits the ability to increase any public transport system capacity. Perhaps DAR was trying to adapt its public transport for future needs through the DART, but the slow pace of implementation (Rizzo, 2015) is compromising the effectiveness of its public transport policy. The combination between high monocentricity and lack of adequate roads suggests that congestion is likely to persist, with important implications for air pollution, quality of life, and overall environmental sustainability.



4.3 Towards a just public transport in East Africa

4.3.1 IMPROVING AVAILABILITY

According to the interviewees, improving road infrastructure can potentially bring improvements in availability of public transport. Such availability improvements would be sparked through a series of mechanisms.

First, increasing road capacity would contribute to ameliorate congestion, therefore easing travel.

Second, road investment in hitherto inaccessible places would invite minibus organizations to expand their service area to reach disconnected places.

Third, improving road infrastructure would contribute to the feasibility of transport solutions such as BRT systems that require ample urban space.

Of course, there are important challenges to improving road infrastructure that should be carefully considered. For example, the financial capacity of governments for road investment should be enhanced. International cooperation agencies could play a key role in financing the road building efforts. Nevertheless, a word of caution is needed.

The urban morphology of some areas will make it impossible to build roads without displacing populations (Jan, 2019; Lukenangula, 2017; Spooner et al., 2020). This means that the socio-economic consequences of road building should be carefully examined through equity lenses:

- Which should be the origins and destinations that improved road infrastructure ought to connect?
- Which urban space should be reclaimed for improved road infrastructure?
- Which are the populations that would be potentially displaced?

- How would those displaced be compensated to promote urban development without making any urban population worse off?

These and other questions should be explored to ensure that road development is just.

4.3.2 ENHANCING INCLUSION

As pointed out by several of the interviewees, there is the urgent need to strengthen data availability on the demand for transport. This is another area of opportunity for international cooperation agencies, as they could support the production of origin-destination surveys to shed light on the demand for transport. Such surveys should be aimed at being representative at the lowest geographical levels possible, aiming to show differences in transport demand at the smallest intra-urban level. A better understanding of intra-urban mobility needs would allow policymakers and international donors to be responsive to the mobility needs of the population. Increased road infrastructure and a better knowledge of the mobility needs would allow efforts like BRT systems to achieve increased availability and inclusiveness.

4.3.3 IMPROVING AFFORDABILITY

There is an urgent need for policies that make public transport affordable for low-income populations.

There is a consensus among participants in the study that affordability could be achieved by fare regulation. While regulation is a legitimate policy tool that is commonly used in public transport policy, the potential of regulation to achieve an affordable public transport system must be carefully examined. The key is to assess if regulation can accomplish lowering fares to an amount that would not prevent any user from riding public transport systems – what economists call non-excludability. In a context like East African cities, achieving non-excludability through regulation is challenging.

Given that most public transport in DAR and KAM is informal, government regulation faces the challenges of enforcement. Additionally, given the large share of the low-income population, realizing non-excludability will require a very low fare close to negligible. In a context in which most public transport systems are privately-owned and -managed, are driven by a for-profit logic, and with increasing operation costs, establishing a fare close to non-excludable through regulation would make the transport systems unprofitable, and therefore financially unsustainable. Hence, regulation might not be enough to achieve increased affordability.

A combination of policy tools is needed. Regulation must be accompanied by financial and organizational policy tools. Regarding financial policy tools, offering a subsidy either to providers of public transport services or to passengers can contribute to a reduced fare. Public investment in infrastructure for transport systems, such as roads, stations, stops, parking lots, and in services such as ticketing, cleaning, and so forth, can reduce the operational and maintenance costs of transport systems, thus achieving profitable margins at a reduced fare. As per organizational policy tools, direct provision of public transport systems by the state is a widespread strategy through which governments win control over their fares and service provision.

The implementation of financial and organizational policy tools for public transport delivery in East African cities has its own challenges. For example, participants in the study agreed that the lack of political will by local politicians is one of the main causes obstructing the delivery of public transport systems. According to the interviewees, the efforts to build a BRT system in KMA stalled after the local government refused to follow requests made by funding development partners about creating a new metropolitan governance structure for public transport. Discussing the particularities of these and other challenges is beyond the scope of this working paper. Nevertheless, the key message

is that fare regulation is not the only policy instrument available to achieve affordability, and a broader conversation about alternative policy instruments is urgently needed. In the context of the budgetary challenges faced by urban governments in East Africa, the support of development partners plays a key role in the deployment of financial and organizational policy tools. The funding provided by development partners can be channeled to secure public transport affordability for the “urban invisibles”.

4.3.4 IMPROVING TRANSPORT AS A HUMAN RIGHT AND EQUITY

The gateway to improve the delivery of mobility as a human right and improved equity is to increase the availability and affordability of existing public transport systems. As explained earlier, the insufficient service area of the minibuses leaves the population in peripheral areas with no other option but to walk or ride expensive boda-bodas. The deficiencies of the BRT system in DAR forces the population to look for alternative transport modes. The high fares of BRT, minibuses, and boda-bodas leaves no option to the low-income population residing in slums but to walk to avoid transport costs. Improving the availability and affordability of transport systems can potentially contribute to increase the travel modes and options for the population, and therefore a better delivery of the right to mobility.

4.3.5 IMPROVING SUSTAINABILITY

The projections indicate that DAR and KMA will continue to urbanize rapidly (Joseph et al., 2021; Vermeiren et al., 2015), which will bring about further challenges to the sustainability of public transport systems and overall environmental sustainability. Adapting the public transport system to the increasing transport needs of their rising populations will require bringing this challenge to the forefront of the public and governmental agendas. Important amounts of financial resources are required, and international cooperation agencies can play a key role in this regard.

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Nevertheless, development partners must place special attention on how to make the investments in public transport more just. What are the distributional effects of public transport investment? Which urban populations capture the benefits of public transport investments, and which bear the burdens? And ultimately, how can international cooperation for public transport development advance just urban outcomes for the “urban invisibles”?

Considerable funding is needed to enhance road infrastructure. A word of caution must be said, however, about the risks of supporting the use of private vehicles by increasing roads capacity. Development partners and local policymakers must keep in mind recent research in cities from the global north arguing that expanding highways and building more roads can sometimes make traffic worse (Sisson, 2020; TFA, 2020).

The underlying reason for this is that enhancing the supply of roads makes it more attractive for urban residents to acquire a private vehicle, thus congesting roads once again. If what seems to be true for cities in the global north holds true for East African cities, increasing road capacity could potentially increase traffic congestion, and intensify air pollution and greenhouse gas emissions. In this sense, funding must be strategically allocated to increase road capacity for public transport systems while avoiding to support the use of private vehicles. This can be achieved through strategies such as the development of dedicated lanes for public transport. Important amounts of funding are also needed to make public transport more affordable through policies such as direct provision of public transport or fare subsidies for the low-income population.





Conclusions

05

This working paper aimed to assess how just the distribution of public transport in East African cities is, and what would it take to make transport more public and more just.

By analyzing the case studies of DAR and KMA, the paper identified the emerging mobility solutions in each urban region and examined how existing transport policies have produced unjust public transport landscapes. The analytical strategy consisted in examining public transport in the case studies through the lens of the Socially Just Public Transport Pillars as proposed by FES: inclusion, safe and affordable access, availability, human rights and equity, and sustainability.

The results of the study showed the urban spaces with the least access to public transport systems. These are the territories where the “mobility invisibles” reside, and they must become the object of policy intervention. Public transport in East African cities is unjust because most of their urban space lacks adequate access to public transport services. The population residing in these territories live under transport-related social exclusion which affects their access to urban opportunities, services, and resources. The dire situation of the “mobility invisibles” in East African cities must be brought to the forefront of public discussion and policy debates. This working paper seeks to contribute to this goal.

While existing public transport policies in East African cities have produced unjust urban outcomes for the “mobility invisibles”, there are ways to advance a more just public transport.

Public transport in East African cities is unjust because most of their urban space lacks adequate access to public transport services.

For example, investment in road infrastructure can allow the most affordable public transport system – the 14-seater minibuss service – to reach the places currently underserved. This is an important area of opportunity for international development organizations who could play a key role in providing funding for road infrastructure to support public transport. The maps presented in this study point out to the areas where investment in road infrastructure and minibuss availability is urgent. Investing in origin-destination surveys can provide key information about the demand for transport, which could be used to plan transport systems that are more inclusive. In addition to fare regulation, there is an urgent need for policies to make public transport affordable for the low-income population. Policies such as the direct provision of public transport systems or subsidies should be explored by national and local governments.

International cooperation agencies can play a key role by providing funding for the implementation of policies that are able to deliver a more just public transport. This is especially true in the junction of post-Covid-recovery programs, which could be used for policies aiming to improve the situation of the “mobility invisibles”. There is an urgent need for a broader conversation about what it is that international donors must do differently if they want to achieve more just outcomes of urbanization in East Africa. A more socially just public transport is a gateway to achieve more just urban outcomes for East Africa’s urban population. A more socially just public transport system is a gateway to contributing towards the goal of a just city in Africa.



Revelation Shuttle

MAKUEZI

EMALI

BIRIKANI

O LOITOKIOK

References

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- Andreasen, M. H., & Møller-Jensen, L. (2017). Access to the city: Mobility patterns, transport and accessibility in peripheral settlements of Dar es Salaam. *Journal of Transport Geography*, 62, 20–29.
- API, (n.d.). Workshop report. Agenda participation initiative and Friedrich Ebert Stiftung Tanzania Office.
- Bhat, C. R., Guo, J. Y., Sen, S., & Weston, L. (2005). Measuring access to public transportation services: review of customer-oriented transit performance measures and methods of transit submarket identification. Austin, TX: Center for Transportation Research at The University of Texas at Austin.
- Church, A., Frost, M., & Sullivan, K. (2000). Transport and social exclusion in London. *Transport Policy*, 7, 195–205.
- Currie, G., & Delbosc, A. (2010). Modelling the social and psychological impacts of transport disadvantage. *Transportation*, 37(6), 953–966.
- Durantón, G., & Guerra, E. (2016). Developing a common narrative on urban accessibility: An urban planning perspective. In Brookings: moving to access. <https://tinyurl.com/h4f9evd>
- FES, (2020). Towards the just city in Kenya. Civil Society Urban Development Platform, Just City. Nairobi: Friedrich Ebert Stiftung. <http://library.fes.de/pdf-files/bueros/kenia/19072.pdf>
- Geurs, K. T., & van Wee, B. (2004). Accessibility evaluation of land-use and transport strategies: Review and research directions. *Journal of Transport Geography*, 12(2), 127–140.
- Goswami, A. G., & Lall, S. V. (2016). Jobs in the city: Explaining urban spatial structure in Kampala. Policy Research Working Paper Issue 7655. Washington, DC: World Bank.
- Haas, A. (2017). From moving vehicles to moving people: Designing a mass public transportation system for Kampala. International Growth Center. Retrieved (November 22, 2021) from <https://www.theigc.org/blog/from-moving-vehicles-to-moving-people-designing-a-mass-public-transportation-system-for-kampala/>
- IAPT. (2010). Major trends and case studies. International Association of Public Transport. Brussels: International Association of Public Transport.
- ITNA, (2018). Top 7 African taxi-hailing apps giving Uber a run for its money. IT News Africa. Retrieved (December 15, 2021) from <https://www.itnewsafrika.com/2018/06/top-7-african-taxi-hailing-apps-giving-uber-a-run-for-its-money/>
- Jan, A. (2019). Transforming urban transport – The role of political leadership TUT-POL Sub-Saharan Africa final report. Case: Dar es Salaam, Tanzania. Harvard University Graduate School of Design.
- Joseph, L., Neven, A., Martens, K., Kweka, O., Wets, G., & Janssens, D. (2020). Activity participation and perceptions on informal public transport and bus rapid transit in Dar es Salaam. *Transportation Research Record*, 2674(11), 573–583.
- Joseph, L., Neven, A., Martens, K., Kweka, O., Wets, G., & Janssens, D. (2021). Exploring changes in mobility experiences and perceptions after implementation of the bus rapid transit system in Dar es Salaam. *Case Studies on Transport Policy*, 9(2), 930–938.
- KCCA. (2019). Statistical abstract for Kampala City. Kampala Capital City Authority. <https://www.kcca.go.ug/media/docs/Statistical-Abstract-2019.pdf>
- KCCA. (2020). Guidelines for opening public transport. Kampala Capital City Authority. <https://www.kcca.go.ug/news/399/guidelines-for-opening-public-transport#.Ybn04VO20Wp>
- Kellerman, A. (2006). Personal mobilities. Taylor & Francis. London: Routledge. <https://doi.org/10.4324/9780203087169>

- Kenyon, S. (2003). Understanding social exclusion and social inclusion. *Municipal Engineer*, 156(ME2), 97–104.
- Kiggundu, A. T., Nyakwebara, C., Eriaku, W., & Nakanwagi, O. (2021). An assessment of stage bus transit operations in the greater Kampala, Uganda. *International Refereed Journal of Engineering and Science (IRJES)*, 10(6), 26–50.
- Kiyanga, B. (2021). Chaos and disruptions as the challenge to urban transportation in Tanzania. *Journal of Traffic and Transportation Engineering*, 9, 73–80.
- Kumar, A., & Barret, F. (2008). Stuck in traffic: urban transport in Africa. *Africa Infrastructure Country Diagnostic Background*. World Bank Group.
- López-García, D. (2021). Interactions between economic development, housing, and transit policies and the mobility experience of workers in Greater Mexico City. Doctoral Dissertation presented at The New School.
- Lucas, K. (2012). Transport and social exclusion: Where are we now? *Transport Policy*, 20, 105–113.
- Lukenangula, J. M. B. (2017). Wakability in rapidly growing cities in developing countries: The case of Dar es Salaam, Tanzania. Dissertation presented to the Faculty of Spatial Planning of the TU Dortmund University, Germany.
- Macchi, S., Ricci, L., Congedo, L., & Faldi, G. (2013). Adapting to climate change in coastal Dar es Salaam. AESOP- AC SP Joint Congress, 15-19 July, Dublin, July, 18.
- Mourdoukoutas, E. (2017). Africa's app-based taxis battle Uber over market share. *Africa Renewal*. Retrieved (December 15, 2021) from <https://www.un.org/africarenewal/magazine/august-november-2017/africa-s-app-based-taxis-battle-uber-over-market-share>
- Mulley, C., & Nelson, J. D. (2019). Public transportation systems. *Wiley-Blackwell encyclopedia of urban and regional studies*, 1 (6). Wiley. DOI:10.1002/9781118568446.eurs0253
- Murray, A. T., & Davis, R. (2001). Equity in regional service provision. *Journal of Regional Science*, 41(4), 577–600.
- Nkurunziza, A., Zuidgeest, M., Brussel, M., & Van den Bosch, F. (2012). Spatial variation of transit service quality preferences in Dar-es-Salaam. *Journal of Transport Geography*, 24, 12–21.
- Oviedo, D., & Titheridge, H. (2016). Mobilities of the periphery: Informality, access and social exclusion in the urban fringe in Colombia. *Journal of Transport Geography*, 55, 152–164.
- Rizzo, M. (2015). The political economy of an urban megaproject: The bus rapid transit project in Tanzania. *African Affairs*, 114(455), 249–270.
- Rizzo, M. (2019). Dar es Salaam's new rapid bus system won international acclaim – but it excludes the poor. *The Conversation*. Retrieved (November 22, 2021) from <https://theconversation.com/dar-es-salaams-new-rapid-bus-system-won-international-acclaim-but-it-excludes-the-poor-109987>
- Rizzo, M., & Atzeni, M. (2020). Workers' power in resisting precarity: comparing transport workers in Buenos Aires and Dar es Salaam. *Work, Employment and Society*, 34(6), 1114–1130.
- Schuschny, A., & Soto, H. (2009). Guía metodológica: Diseño de indicadores compuestos de desarrollo sostenible. Comisión Económica para América Latina y el Caribe (CEPAL).
- Sisson, P. (2020). Expanding highways and building more roads actually makes traffic worse. *CURBED*. Retrieved (December 15, 2021) from <https://archive.curbed.com/2020/3/6/21166655/highway-traffic-congestion-induced-demand>

- Spooner, D., Mwanika, J. M., Natamba, S., & Manga, E. O. (2020). *Kampala Bus Rapid Transit: Understanding Kampala's Paratransit Market Structure* (Issue June). Manchester: Global Labour Institute.
- Stone, D. (2012). *Policy Paradox: The art of political decision making*. Third Edition. New York, NY: Norton & Company.
- TFA, (2020). *The congestion con: How more lanes and more money equals more traffic*. Washington, DC: Transportation for America.
- van Wee, B., & Geurs, K. T. (2011). Discussing equity and social exclusion in accessibility evaluations. *European Journal of Transport and Infrastructure Research*, 11(4), 350–367.
- Verlinghieri, E., & Venturini, F. (2018). Exploring the right to mobility through the 2013 mobilizations in Rio de Janeiro. *Journal of Transport Geography*, 67(September 2017), 126–136.
- Vermeiren, K., Van Rompaey, A., Loopmans, M., Serwajja, E., & Mukwaya, P. (2012). Urban growth of Kampala, Uganda: Pattern analysis and scenario development. *Landscape and Urban Planning*, 106(2), 199–206.
- Vermeiren, K., Verachtert, E., Kasajja, P., Loopmans, M., Poesen, J., & Van Rompaey, A. (2015). Who could benefit from a bus rapid transit system in cities from developing countries? A case study from Kampala, Uganda. *Journal of Transport Geography*, 47, 13–22.
- Vinay, S., Henderson, V., & Venables, A. J. (2017). *Africa's cities: Opening doors to the world*. World Bank Group.
- Weingaertner, C., Svane, Ö., & Brikell, B. (2008). Daladala buses deregulated - Analysing urbanisation's situations of opportunity via Tanzanian example. *International Journal of Sustainable Development and Planning*, 3(1), 16–28.
- World Bank, (2020). *Urban mobility and COVID-19 in Africa*. World Bank Group, Africa Transport Policy Program (SSATP). Washington, DC: World Bank Group.

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