SSATP
Africa Transport Policy Program

Discussion Paper

Myths and Realities of "Informal" Public Transport in Developing Countries:

Approaches for Improving the Sector

Ajay Kumar
Sam Zimmerman
Fatima Arroyo-Arroyo

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AFD
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Acronyms

AFD	Agence Française de Développement
AfDB	African Development Bank
AUC	African Union Commission
BMTA	Bangkok Metropolitan Transit Authority
BRT	Bus Rapid Transit
BRTS	Bus Rapid Transit Systems
BT	Bus Transit
CO^2	Carbon dioxide
CPC	Certificate of Public Convenience
DP3	SSATP Third Development Plan
EC	European Commission
EIG	Economic Interest Groups
ES	Executive Summary
ESAP	Economic Structural Adjustment Programs
EU	European Union
GAPTE	Greater Accra Public Transport Executive
GDP	Gross Domestic Product
GIZ	German Agency for International Cooperation
ICT	Information and Communication Technology
INTP	Integrated National Transport Policy
IPTS	Informal Public Transport Sector
ITDP	Institute for Transportation and Development Policy
ITS	Information and Technology Solutions
ITWF	International Transport Workers' Federation
KBS	Kenya Bus Services
LRT	Light Rail Transit
M&E	Monitoring and Evaluation
MWA	Matatu Welfare Association
NACOWA	Nigerian Auto Bike Commercial Owners and Workers Association
NAFEBO	National Federation for Boda Bode Operators
NMT	Non-Motorized Transport
NTB	Nairobi Town Bus
OA	Operator Associations
OECD	Organisation for Economic Co-operation and Development
PLB	Public Light Buses
POS	Point of Sale
PPP	Public Private Partnerships
PT	Public Transport
PUVMP	Public Utility Vehicle Modernization Program
RA	Route Associations
REC	Regional Economic Communities
SECO	Swiss State Secretariat for Economic Affairs
SSA	Sub-Saharan Africa
SSATP	Africa Transport Policy Program
TfL	Transport for London
UK	United Kingdom
UN	United Nations
UNECA	United Nations Economic Commission for Africa
US	United States
USD	United States Dollar
UTM	Urban Transport and Mobility
WB	World Bank

Einstein is quoted as having said that if he had one hour to save the world, he would spend fifty-five minutes defining the problem and only five minutes finding the solution.

Executive Summary

It is often said that transport is the one economic sector that can degrade as incomes increase. The degradation is manifested in increasing congestion, pollution, accidents, and other traffic-related maladies. One view is that the root of the problem lies in rising incomes that lead to even faster-rising motorization. Another assessment sees a motorization-induced decline of "formal" public transport systems and the rise of "informal" services as key issues, but it is unclear whether the rise of the informal sector is the result of transport system degradation or the cause.

Understanding the basic causes of the transport system's decline and the dominance of informal public transport is essential before improvements can be identified. Because of its social, economic, and environmental importance, the paper's main focus is on public transport in general, specifically its so-called "informal" aspects. The objectives of the paper are to: a) examine the uniqueness of public transport systems in Sub-Saharan African cities in terms of their historical, institutional, spatial, social, environmental, economic, and political contexts; b) explore the causes of the decline of developing country transport systems in general and in public transport's degradation in particular; c) discuss commonly-held misconceptions so that policymakers at all levels of government can understand the issues that must be addressed if "informal" public transport is to be improved as part of an enhanced, customer-driven public transport system; and d) propose the outline of a roadmap for making improvements.[1] Subsequent work will examine in more detail what an improved public transport system would look like and how it can be achieved.

This paper also focuses on all aspects of so-called "minibus-taxis," the oldest and most prevalent informal sector mode in Africa, Latin America, and Asia. This mode goes by different names in different places; however, the many causes of its rise and the impacts of the rise are common throughout the developing world. Relatively new informal public transport operations using three-wheeled shared ride vehicles (e.g., "Tempos" in India) and motorcycle taxis (e.g., "Xiom" in Vietnam) have arisen as minibus taxis with similar operating and business models. Regardless of new developments around the world, the paper will focus on the informal "minibus" public transport mode still most prevalent in Africa, especially Sub-Saharan Africa. The implications of this issue resonate far beyond that continent, however, as this mode of transportation is found across Asia and Latin America. Many of the political, geographic, social, economic, financial, and technical factors and trends impacting transport are essentially the same across the world.

The term "informal" or "paratransit" was first used in the United States in the late 1960s to refer to unscheduled services that complement mass public transport systems and are often used as demand-responsive transport systems. In the developing world, paratransit services are usually provided at a far larger scale for the general population, often by weakly regulated or illegal operators within the informal sector. They are referred to as "informal" because standard "formal" regulations and operating practices are not applied for a variety of reasons. The motivations driving the growth of these informal services are ascribed to high unemployment, ease of entry, and the promise of immediate financial gain. These factors often attract new urban immigrants to this activity in the absence of better alternatives to earn a livelihood.

Over time, several factors have contributed to the expansion of informal public transport. First, the population of African cities has exploded, while the areal extent of the cities has grown even faster since the early 1990s. Unplanned, low-density new development in formerly rural-urban fringe areas (i.e., sprawl) is one source of the problem. Informal residential settlement is occurring where vacant land is available, far from potential employment and residential services. This alone increases travel distances, while increasing incomes have also led to more travel and higher motorization. At the same time, the quantity, quality, and condition of transport infrastructure and services have not kept up with this rapidly growing demand. This has compounded problems associated with already critical safety, pollution, access, congestion, and other transport issues. The causes of this decline are complex, and this paper will explore them in detail.

1 The informal public transport in this paper focuses on mini and midibuses (which go by different names in different cities). A separate paper would focus on issues related to 2- and 3-wheeler informal transport, which has been growing exponentially over the past few years but has different operational and organizational contexts.

In Sub-Saharan African cities, the two dominant modes of transport are walking and public transport, but most of public transport has service patterns, operating approaches, and business structures that are decidedly different from those in their higher-income western and Asian counterparts. Collectively, the "informal" public transport sector is defined in terms of the service offered, how it is operated, and its financial aspects.

Services Offered: Informal services typically operate at the owner/operators' discretion in response to demand or in time slots assigned by a private association or union of owner/operators. Services do not have formal schedules and stops. Drivers leave designated terminals when full and stop anywhere to pick up and drop off passengers at the passengers' behest. Because of the random nature of demand in terms of time and place, it would be difficult to develop and impossible to adhere to formal schedules (if there were any).

Operations and Business Models: In places where informal public transport is dominant, its regulation is either non-existent or carried out by government institutions with too little authority, few effective human resources, and vested personal interests. Regulation of fares is often the only enforcement action taken (but even here informal operators find ways of circumvention). Low cost, poor condition vehicles are offered for service by owners with easily obtained, low-cost licenses. The number of licenses issued and vehicles plying their trade are usually the result of demand for them by individual entrepreneurs, not necessarily a function of the travel demand market. Vehicle ownership is seen as a revenue generation activity, among both the owners, public officials charged with regulation, and enforcement.

The institutions governing the number of vehicles in use often lack technical competency in transport analysis and planning, so they may not have the ability to match supply and demand so that operations can be profitable. They are also incentivized to increase the number of licenses based on revenues generated from issuance, both legal and otherwise. As vehicle/license ownership (not necessarily operation) can be profitable, the public officials charged with public transport regulation and enforcement often become license/vehicle owners themselves. All the above factors tend to increase service supply beyond what the travel market can support, thus negatively impacting the financial viability of operations.

The small (e.g., sedans, vans) or medium-sized vehicles utilized are imported used from high income countries at a much lower cost than new ones and are often in poor working condition. Licensed vehicles can actually be operated by their owners (most common in Latin America), but in Africa, owners usually lease them to drivers by the day or for a particular time period. The drivers are, in essence, unsalaried individual entrepreneurs, and pay all daily out-of-pocket expenses (e.g., fuel) in addition to the basic lease. Therefore, they have a huge incentive to compete on the street for customers.

This environment leads to erratic, unsafe driving, and congestion, far beyond what the number or percentage of public transport vehicles in the traffic stream would suggest. The lack of a connection between supply and demand also means that driver incomes are, at best, modest. Drivers work long hours for low net incomes after vehicle rental, fuel, and other costs are subtracted from fare revenues. Working conditions are generally awful, unmitigated by the respective country's labor laws. The over-supply of vehicles and poor driver working conditions are exacerbated as drivers put in longer, more stressful hours to increase their incomes. Relatively low returns for vehicle owners means there is little internally generated financing for vehicle maintenance and timely replacement. It also means that there is a perceived incentive to buy additional vehicles and put them on the street, worsening the oversupply situation.

These factors contrast with "formal" public transport that provides services along designated routes and according to fixed schedules. These services, reflecting demand patterns and operating conditions, only stop at designated areas. Formal public transport is usually operated by relatively large organizations, either publicly or privately owned.

Myths Addressed in the paper

Given the general lack of information about the root causes of transport problems in developing countries, related particularly to the informal public transport sector, several myths about them have arisen. Many attempts at reform or improvement have been less than successful as planning and implementation of reform or improvement programs reflected these myths. Listed here, the paper discusses them in much more detail.

Myth 1.

The strategic transport plans of developing cities typically articulate a comprehensive approach to addressing the mobility and access needs of all sectors of society.

Myth 2.

Investment in road infrastructure and procurement of new public transport facilities and rolling stock are the main "necessary" actions to address worsening urban mobility problems.

Myth 3.

The rise of minibus taxis and other forms of paratransit is the result of a conscious decision to deregulate public transport.

Myth 4.

Exponential growth in informal public transport is simply a result of the collapse of the formal government-owned and operated bus systems of the 1970s-1990s.

Myth 5.

Informal public transport's safety, security, environmental and performance issues far outweigh its benefits; it should be eliminated entirely.

Myth 6.

Public sector ownership and direct operation of fixed schedule, route-and-stop "formal" bus services—a public transport model essentially universal and exclusive in developed cities as late as the 1990s—is ideal and should be recreated where it has disappeared in developing cities.

Myth 7.

The quality, quantity, and usage of public transport is declining in most developing cities. The only way to address the resulting chronic and escalating traffic congestion is to reform public transport by investing in mass rapid transit, bus, or rail, and make all other transit subsidiary to it.

Myth 8.

Bus Rapid Transit Systems (BRTS) are always a desirable solution to rapidly escalating traffic congestion and the low quality of public transport in developing cities.

Myth 9.

The poor performance of the private sector suggests that cities must maintain existing publicly owned and operated bus companies or establish a new one.

Myth 10.

To protect the interests of the poor, it is important to regulate bus fares while also allowing competition in the market.

Myth 11.

The major advantages of BRT and rail-based rapid transit systems are their dedicated running-ways and high-capacity, modern vehicles. Their introduction should be accompanied by the complete elimination of informal services in their respective corridors.

Myth 12.

The informal sector's issues are primarily regulatory. Informal operators purposefully evade taxes, consequently withholding revenue from the city and unfairly competing with formal, tax-paying businesses. This behavior can be "regulated away."

Myth 13.

In developing countries, people using public transport do so for lack of any options.

Myth 14.

Informal public transport is more than just transport; it represents a cultural phenomenon with considerable political clout.

Myth 15.

One large bus can replace many of the smaller vehicles (e.g., sedans, vans, etc.) utilized by the informal sector; thus, their procurement should be encouraged if not financially supported by government to reduce congestion.

Myth 16.

The entire labor force of the informal public transport sector currently working directly in a corridor or subarea can be re-assigned to the conventional public transport network that replaces it without having to relocate anyone.

Myth 17.

Replacing informal with conventional public transport can be accomplished without government financial support of any kind.

After exploring the realities associated with each of these "myths," the paper lays out several avenues for improvement and the issues that must be considered. These recommendations are described broadly, and each is worthy of much more context-sensitive detail and place-specific planning and development work. Perhaps the most important assumption for the reform planning process is that there is no single-service model or mode that should be considered as universal or exclusive to serving all travel markets in all urban contexts. There is a growing realization in developed as well as developing countries that large cities have many different travel markets which vary in terms of the factors that define the market. These include trip-maker demographics such as incomes, household size, employment status, trip characteristics (e.g., purpose, destination and length), travel time of day, and traveling group size. No single mode or public transport approach will meet all the needs under this definition.

COVID-19 has impacted many public transport customer choices in the past year. Patronage on the most intensely used public transport modes (e.g., rail and BRT) has fallen off more rapidly than the patronage of informal services. The reasons are exclusive to price and the lack of other options. Conventional public transport makes up for its relatively high capital, operating, and maintenance costs by scheduling as many customers as possible in a single bus or train ride. The ability to maintain COVID-safe passenger distances in stations ***and*** aboard buses and trains and be financially sustainable is much more difficult for conventional public transport, which has many fixed costs and uses rolling stock with higher passenger densities and ventilation loads than the smaller vehicles used by the informal sector.

Due to these and other factors worldwide, developed and some developing cities are moving to public transport that features a mix of services operated and paid for in different ways. For example, services similar to what the informal sector offers in developing cities may be provided in one corridor or subarea as an adjunct or alternative to formal bus services. Rapid transit and formal bus services may be offered in another area.

In these developed country cases, all public transport is planned, regulated, and even financed by a single, area-wide multi-modal public authority. This overall approach is facilitated by contemporary information, data processing, and communications technologies which are also used to mitigate some or all negative aspects of motorized vehicle use.

The paper concludes by asking a basic question: given the perceived negative externalities associated with informal transport, to what extent should they be banned? Again, the answer depends on specific circumstances.

In summary, three broad approaches are discussed in this paper.

First, attempts to ban informal transport altogether in many cities (Nairobi, Lagos, Maputo) have not been successful. Attempts to freeze the number of new licenses often had the unintended result of fueling the exponential growth of illegal operations and the rise of 2-, 3-wheelers and shared taxis, combining the worst of all situations.

Second, accepting informal transport policy in its current form and structure is also fraught with problems. Many challenges are presented in terms of security and safety, environmental hazards, and increasing congestion.

Third, the option of transforming the large, self-regulating minibus sector into an efficient and modern system with the quality and quantity of services needed to meet the varied travel needs of a diverse population comes with its own challenges. The basic requirements for this transformation entail: a) the regulation, organization, and planning of urban passenger transport services to create better business conditions and improve service quality; and b) improvements in operating conditions and traffic management to facilitate the delivery of improved services. Equally critical is to phase in the reforms in an incremental manner to manage the risks, gain broad stakeholder acceptance, and gradually introduce a transformative regime.

The roadmap outlined in this paper provides a strategic framework and direction without intending to offer specific solutions for different city contexts.

Introduction

Governments in developing countries are struggling to find the most efficient ways of moving people around burgeoning urban areas. Safe, clean, and efficient travel options for getting to work, school, medical facilities, shopping centers, and other places are essential for making cities competitive, attractive, and livable. Climate change, road safety, and now COVID-19 are making it more and more difficult for decisionmakers to provide a set of choices that meet often conflicting objectives and constraints in terms of mobility, environmental, financial, and now health factors. The need for adequate, secure private space in transit is raising fundamental issues regarding disparities in access to opportunity across income groups.

In developing cities, the public transit dependent population is further disadvantaged by declining levels and quality of service. As the cities grow in population and levels of motorization overwhelm roadway capacity, congestion increases and the effective in-service speed of public transport declines. Surface public transport of all kinds suffers disproportionately. The rate of traffic flow declines and fuel and other costs rise, while fare revenue is limited both politically and by fierce on-street competition. Making matters worse, unplanned urban sprawl decreases customer density, making it necessary for public transport service to expand just to attract the same number of customers. Public transport entities of all kinds are faced with a grim choice of reducing service or operating at much lower load factors. In either case, it is difficult for them to maintain financial viability.

Informal public transport is the mode of travel for most people in developing cities, the majority of whom have low incomes. Its owners/operators, often public officials, are also numerous and they employ a large percentage of the overall work force. This situation makes effective and affordable public transport policy central to the political agenda.

During parliamentary elections in countries as diverse as Nigeria, Ghana, Zambia, South Africa, Tanzania, India, and the Philippines, proposed solutions include injecting a heavy dose of publicly financed infrastructure for new vehicles or offering heavily subsidized fares in the hope of solving "the problem." It is increasingly acknowledged that building new roads, new rail, or bus rapid transit lines alone will not address fundamental mobility challenges. These challenges derive from each country and city's social context and record of governance as well as technical, geographic, economic, financial, and political realities.

Another often tried "solution" is partial or full reform of the prevailing informal public transport sector. There are many ways that this has been attempted, up to eliminating it by law, with mixed results at best. The introductory quote by Einstein illustrates an important point: before jumping right into finding solutions, we should step back and invest time and effort to improve our understanding of the nature of a problem. This paper does just that by discussing commonly held misconceptions and possible alternatives to current approaches. The paper also offers directions for a more effective policy response to the rapidly changing public transport demand in developing cities.

Definitions

To illustrate the issues framed in this paper, two key terms need to be defined – informal public transport and formal public transport.

Informal Public Transport

Informal public transport, the most prevalent mode in developing countries, is defined by the "informality" of its services. Highly responsive to demand, these services:

- Are provided when and how operators choose;
- Begin their runs at terminals which they leave when they are either full or close to it;
- Do not usually have designated, "formal" stops in between terminals, stopping anywhere when hailed or whenever a passenger wants to board;
- May divert off the designated route; and
- Have no formal schedules.

Informal public transport is most often provided, without government subsidy, by individual entrepreneurs who own small fleets, usually with no more than 2-4 vehicles.[2] Vehicles, usually imported used from the developed world, range from either motorcycles or three-wheeled "tuk-tuks" carrying three seated passengers to vans and minibuses with a total capacity of fewer than 35 standing and seated passengers. The sector usually employs drivers who work on a commission basis, aided by fare collectors ("conductors") hired by the drivers. There are also "call boys" who are paid by bus conductors to facilitate the loading of passengers and cargo. Most of the operations are family businesses that engage only family members.

Informal transport service providers mostly self-regulate the state of their vehicles and their operating conditions, though government entities control the sector with varying degrees of rigor. Entrepreneurs may or may not operate with an operating license that confines them to a specific alignment/route and terminals. They usually belong to a "union" that determines who may serve a given route and use the route's terminals. Regardless of having a government operating license, these operator unions charge their members for use of the terminals and for the right to operate on specific routes.

Unions are usually very rigorous in the enforcement of their prerogatives and are a significant political force in most developing countries. Their influence is due in part to the number of people involved in the sector and the fact that government officials (e.g., police, regulatory employees) are often directly involved in the industry through license and vehicle ownership.

The term "paratransit" (meaning "serving alongside" transit) was first used in the United States in the late 1960s to refer to unscheduled services that complement mass public transport systems[3,4] and are often used as demand responsive transport systems.[5] In the conventional sense, paratransit refers to all passenger travel modes falling between private transport and scheduled, fixed-route public

2 In the recent past the cities have also seen a phenomenal growth of 2/3 wheelers and shared taxis as a form of informal public transport. These vehicles are even less incumbered than the minibuses in terms of barriers to entry and service requirements. Though, these modes are not the focus of this paper.

3 Paratransit, Special Report 164, Transportation Research Board, National Academy of Sciences, Washington DC, 1976

4 R.F.Kirby, et al. Para-Transit: Neglected options for Urban Mobility, Urban Institute, Washington, DC, 1975

5 **Google Definition:** Paratransit is the term used in North America, also known by other names such as community transport (UK) for transportation services that supplement fixed-route mass transit by providing individualized rides without fixed routes or timetables. Paratransit services may vary considerably on the degree of flexibility they provide their customers. At their simplest they may consist of a taxi or small bus that will run along a roughly defined route and then stop to pick up or discharge passengers on request. At the other end of the spectrum—fully demand responsive transport—the most flexible paratransit systems offer on-demand call-up door-to-door service from any origin to any destination in a service area.

transport.[6] In the developing world, paratransit services are usually provided for the general population on a far larger scale, often by weakly regulated or illegal operators within the informal sector. They are referred to as "informal" because standard formal rules and operating procedures often do not apply to them. Even when such services are regulated and legalized (like in the case of Accra or Maputo), they continue to be referred to as informal transport to distinguish them from bus services operated by large organizations that adhere to fixed routes and schedules (e.g., Metro Mass Transit in Accra or the large Cooperatives in Maputo).

Informal public transport has different names in different places. For example, the mode is called "Service" in Lebanon, Jordan, Palestine; "Dolmus" in Turkey, "Sherut" in Israel; "Jeepneys" in the Philippines; "Bemo in Bali, Indonesia; "TroTro" in Ghana; "Danfo" in Nigeria; "Combis" or "Taxis" in South Africa; "Cars Rapide" in Senegal; "Micros" in Peru; "Chapas" in Maputo; "Matatu" in Nairobi; "Podapoda" in Freetown, and "Dala Dala" in Dar es Salaam. However, the basic characteristics of the mode are similar the world over in terms of the services offered, how they are operated, and how the business is carried out.

Photo II-1.
From top: Bus terminal in Lusaka, Jeepneys in Manila; Freetown Poda Podas;

6 Cervero, 1975

Formal Public Transport

This mode of transport is common in developed nations and medium to high-income countries but is relatively insignificant and/or rare in the developing world. Formal public transport requires a high level of organization and government regulation to operate well. It is generally more costly to provide than informal sector services because highly regulated formal public transport must meet all government regulations, especially those dealing with labor.

Formal public transport:

- Provides services at designated times according to formalized schedules;
- Has designated, fixed routes and terminals and serves only designated, marked stops along its routes;
- Is highly regulated with respect to operator entry, vehicle standards, fares, schedules, days and times of operation, routes, stops, and terminals;
- May either be provided by a state-owned enterprise or by private sector companies Private companies may operate based on competitively-procured contracts or concession agreements between the respective company and the government regulator; and
- Usually receives some type of government subsidy. This support may be used for construction of facilities and infrastructure, acquisition of rolling stock and equipment, operations and maintenance, or combinations thereof.

Understanding the problem

Over time, several factors have contributed to the decline of urban mobility in developing cities and the concomitant expansion of informal public transport in those areas

Some obvious ones

Rapid population growth without sufficient expansion of transport infrastructure and services

472 million people reside in urban areas in Sub-Saharan Africa. That number will double over the next 25 years. The largest cities grow as much as 4 percent annually, a pace unheard of in the developed world.[7] Some of this growth is due to migration from rural, agricultural areas, but most of it is due to natural increases in the urban population and the geographic expansion of urban conurbations that envelop small villages and adjacent areas. People living on the outskirts of the city must adjust to a growing number of unplanned settlements that are being developed with no regard to basic rules of urban planning. The bulk of new growth in urban dwellers is happening not only in mega-cities like Lagos (with a population of over 20 million), but in cities of less than five hundred thousand people.[8] By 2025, there will be 100 Sub-Saharan African cities with more than one million inhabitants, according to McKinsey. That is twice as many as in all Latin America. Large cities of more than 1 million people account for 34 percent of Sub-Saharan Africa's urban population. Secondary cities of 250,000 to 1 million account for about 15 percent of this population. Most striking, smaller cities with fewer than 250,000 people account for about 50 percent of Sub-Saharan Africa's urban population. Small urban places with fewer than 50,000 residents account for 29 percent of the continent's urban population.[9]

Photo III-1.
A food kiosk is created in the middle of a traffic island in the central downtown area in Lusaka to accommodate the needs of passing passengers but compromising road safety and worsening congestion.

7 The State of African Cities 2008, A framework for addressing urban challenges in Africa, United Nations Human Settlements Programme 2008

8 https://www.cfr.org/backgrounder/urbanization-sub-saharan-africa

9 Which Way to Livable and Productive Cities? A Road Map for Sub-Saharan Africa Kirsten Hommann and Somik V. Lall, World Bank (2019)

Increasing incomes and related motorization

The increase in urban population combined with income growth has resulted in even higher increases in private vehicle (autos and motorcycles) ownership and use. Vehicle ownership is growing by seven to eight percent annually and population by two to three percent annually in Sub-Saharan African countries. The combined effects of these increases result in an almost doubling of vehicle travel every five to six years. Vehicle ownership has increased from fewer than 40 vehicles per 1,000 population to over 250 vehicles in Accra between early 2000 and 2015.[10] In Nairobi. this has increased from 60 vehicles per 1,000 population to about 200.[11] The road infrastructure has failed to keep pace with the growing demand. The high rate of growth in auto and two-wheeler fleets, coupled with roadway capacity constraints, has led to severe congestion in most Sub-Saharan African cities.

Unplanned sprawl

Cities have developed rapidly as collections of sprawling small villages and fragmented neighborhoods combine into one urban area. Most over-development occurs through expansion of the urbanized area boundary rather than infill. Newly urban areas lack a complete, integrated roadway network of sufficient coverage and capacity and have inadequate public transport.

"Sprawl" and the lack of effective transport planning prevents firms located in a city's periphery from enjoying the economic benefits of scale and agglomeration that firms enjoy in more clustered areas. Furthermore, these factors increase logistical costs[12] and limit job opportunities for workers living there. The dispersed growth and inadequate roadway infrastructure make it difficult for conventional fixed route public transport to serve the public. Coordinated land-use and transport planning is widely recognized as critical to sustainable development but is rarely achieved, even in the developed world. Because the poor have few financial resources and little political power, they are affected disproportionately by these factors which often cause them to be excluded from work, education, healthcare, and boundary social services.

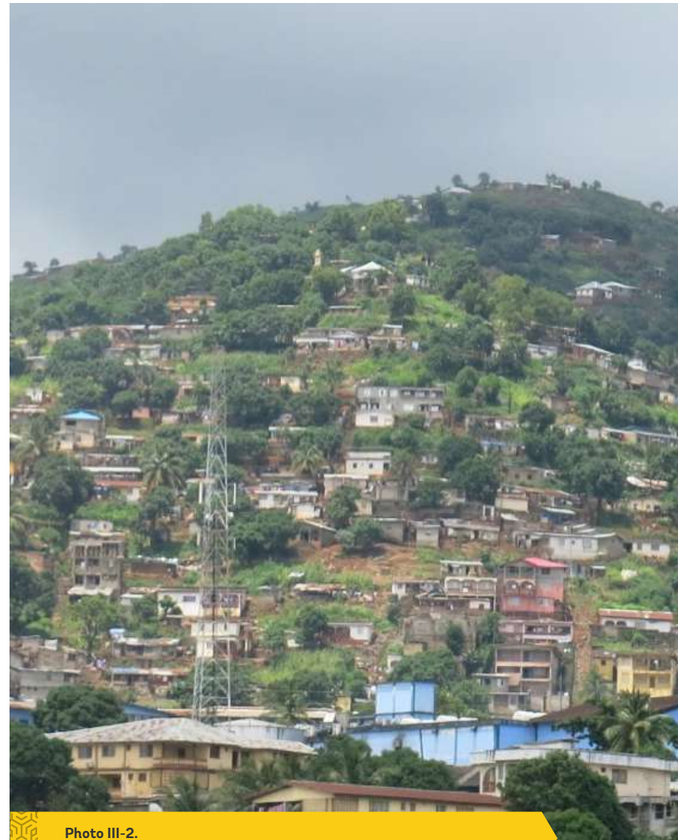


Photo III-2.
Unplanned growth in the hilly parts of Freetown resulted in deforestation and landslides.

10 Franklin Obeng-Odoom (2010) Drive left, look right: the political economy of urban transport in Ghana, International Journal of Urban Sustainable Development, 1:1-2, 33-48

11 Khayesi, Nafukho, and Kemuma Informal Public Transport in Practice, 2018 by Routledge

12 The State of African Cities: A framework for addressing Urban Challenges in Africa, UN Habitat (2008)

Changing city structure

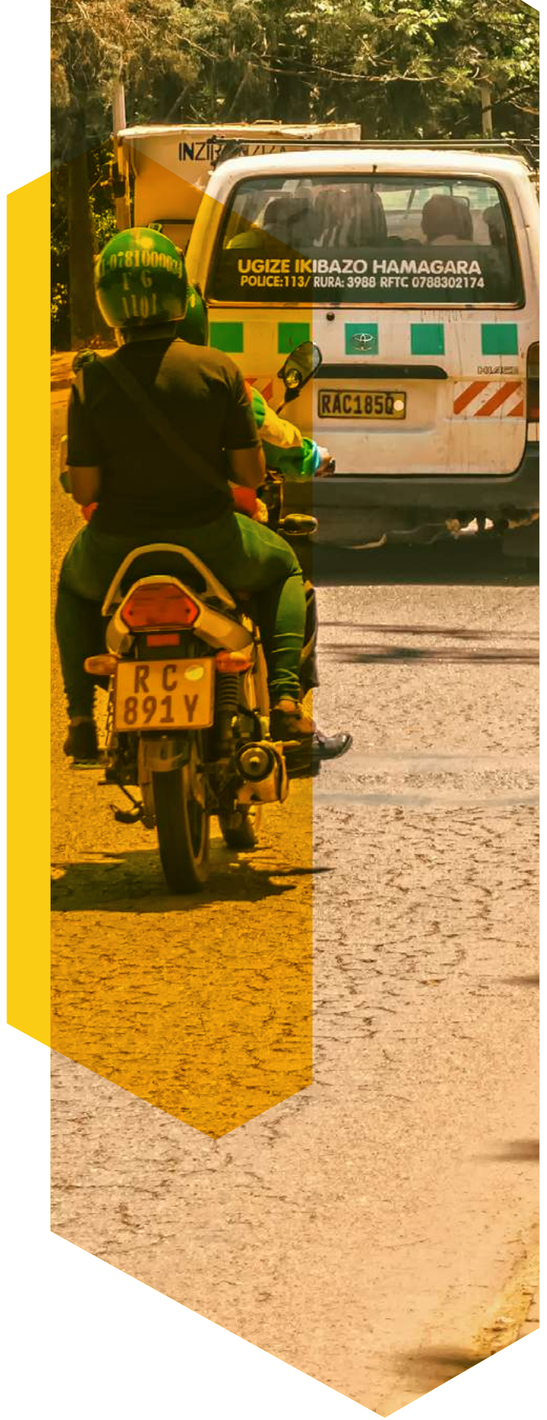
Metropolitan areas in Sub-Saharan Africa are low density in terms of population compared to urban areas of similar total size in other parts of the developing world. Growth is taking place on the outskirts, expanding far beyond established city boundaries. For example, the population of the Greater Accra Metropolitan Area increased by 50 percent in 15 years (1985 to 2000), but the area covered by the conurbation increased by 160 percent. Between 1990 and 2005, the built-up area of the city expanded from 133 km² to 344 km². Relative to its population, Accra city proper gained less inhabitants than surrounding municipalities and districts. Accordingly, the average population density across the region declined by about 40 percent.[13]

Relatively low, homogeneous residential density is a common feature of city centers in even large cities in Sub-Saharan Africa. When people move from rural to urban areas, they often settle in the urban periphery. "Empty" lots are available there to build inexpensive, detached homes, often without the need for formal land ownership. Though these homes are "single family," multiple generations frequently live together in a single unit.

Given the prominence of the informal economy, employment is also generally low density and spread out rather than concentrated in a few large activity centers or corridors. Except where driven by geography (e.g., Dakar) or the presence of significant numbers of multi-national corporations and/or organizations (e.g., Johannesburg, Addis), few activity centers/central business districts are large enough in scope to provide high-demand corridors and high-performance, high-capacity rapid transit.

Road network structures tend to be consistent with this urban format. Few major arterials traverse entire metropolitan areas and they often converge at one or two centrally located places. Most Sub-Saharan African cities have narrow, circuitous, and discontinuous arterials spaced far apart. Residential areas have many unpaved local streets with little or no structure between them and the arterials they "feed."

13 Source: World Bank, 2017



Insufficient infrastructure (and services)

Urban infrastructure (roads and streets, sewers and water, electricity, etc.) deficiencies are a daunting problem in Sub-Saharan Africa. It is necessary to spend between $130-170 billion annually to meet the continent's basic infrastructure needs.[14] Yet the region is already facing financing shortfalls of $68-$108 billion. Roughly two thirds of the investments in urban infrastructure needed by 2050 have yet to be made. Most of the current financing is from the public sector because the macroeconomic situation, weak legal and contract enforcement, regulatory issues, and other matters deter private capital. Total capital investment in African infrastructure between 1980-2011 averaged just 20 percent of GDP.[15] In contrast, urbanizing countries in East Asia — China, Japan, the Republic of Korea — stepped up the rate of capital investment during their periods of rapid urbanization. Between 1980 and 2011, China's capital investment rose from 35 percent of GDP to 48 percent, while the urban share of its population rose from 18 percent to 52 percent between 1978 and 2012. In East Asia as a whole, capital investment remained above 40 percent of GDP at the end of this period.[16]

Current and evolving travel patterns

As discussed under the section "Changing City Structure," most Sub-Saharan African cities have relatively low residential and employment densities with few large, concentrated activity centers if any. Significant urban growth has not really changed this homogeneous pattern. While corridor travel volumes may be high, individual traffic flow is characterized by many origins and destinations ("many to many" travel) due to these low residential and employment densities as well as numerous activity nodes. There are few corridors with the high-volume, long-distance trip flows that converge in a few places and are necessary to support efficient, high performance and high-capacity mass rapid transit.

14 African Economic Outlook 2016, Sustainable Cities and Structural Transformation, African Development Bank, Organization for Economic Co-operation and Development, United Nations Development Program (2016)

15 https://www.weforum.org/agenda/2018/06/Africa-urbanization-cities-double-population-2050-4%20ways-thrive/

16 Somik Vinay Lall, J. Vernon Henderson, Anthony J. Venables Africa's Cities: Opening Doors to the World, The World Bank (2017)

Other Indirect, Less Obvious Issues Impacting Urban Transport

Sub-Saharan African countries are urbanizing much faster than others with much lower levels of individual household wealth

The Sub-Saharan Africa region is strikingly poorer than other developing regions with similar urbanization levels. In 1968, when countries in the Middle East and North Africa region became 40 percent urban, their per capita GDP was $1,800 (2005 constant dollars). And in 1994, when countries in the East Asia and Pacific region surpassed the same threshold, their per capita GDP was $3,600. By contrast, today's Africa has a per capita GDP of just $1,000[17] with a 40 percent urban population.

This phenomenon is the result of people migrating to cities without the education and skills necessary to get stable, relatively well-paying jobs in the formal economy.

Most urban employment growth in Sub-Saharan Africa is in the "informal" sector, without temporal or locational regularity

The informal sector is a large part of employment in Sub-Saharan African cities. In fact, 85.8 percent of people in Sub-Saharan African cities are employed in the informal sector as compared to 68.2 percent in Asia and the Pacific, 40.0 percent in the Americas, and 25.1 percent in Europe and Central Asia.[18] Most jobs in construction, residential and commercial services, and other informal sector activities have relatively low pay, no benefits, irregular workdays and hours, and no fixed locations. This makes it extremely difficult to make major investments in transport of capital goods and services that rely on large, stable travel markets for both economic efficiency and financial viability.

17 Ibid.

18 Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204), International Labor Organization

Lack of capital investment in road and street infrastructure in Sub-Saharan African cities over the past few decades has partly contributed to growth in the number of smaller, more flexible vehicles able to serve public mobility needs over marginal street and highway networks

In Sub-Saharan African cities, roads occupy a far lower share of urban land than in other cities around the world. Table III-1 shows varying levels of urban public land that is allocated to streets, from 6 percent in some cities to 36 percent in other cities around the world.[19] In contrast to major cities in other continents, all cities in Sub-Saharan Africa cited in the study have less than 15 percent of their land area allocated to streets. The deficiency of urban road infrastructure is made worse by the extreme concentration of roads in the historic cores of Sub-Saharan African cities, leaving the newly urbanizing outer areas poorly served and even disconnected. In well-developed cities outside Sub-Saharan Africa, the land allocated to roads declines only gradually as one moves from the center of town toward the periphery. In contrast, Sub-Saharan Africa's urban arterial roads are disproportionately clustered near the center, with a sharp drop in area coverage, network capacity, and physical condition as one moves away from the city.[20]

Table III-1: Land allocated to streets[21]

City	% land area
Manhattan	36
Hong Kong	33.7
Barcelona	33
Paris	29.7
Amsterdam	29.1
Tokyo	28.7
Athens	28.6
Medellin	25.2
Brussels	25.1
Helsinki	22.9
Copenhagen	22.7
Guadalajara	21.8
Singapore	21.6
Beijing	19.1
St. Petersburg	18.5
Auckland	18.1
Brasilia	16.7
Bangkok	15.9
Kigali	15.7
Chandigarh	15.7
Kolkata	15.2
Abuja	15.1
Dakar	14.3
Addis Ababa	13.4
Ouagadougou	12.3
Nairobi	11.5
Accra	11.1
Yerevan	6.1
Bangui	6

19 The relevance of street patterns and public space in urban areas, UN-Habitat Working Paper, April 2013

20 Somik Vinay Lall, J. Vernon Henderson, Anthony J. Venables Africa's Cities: Opening Doors to the World, The World Bank (2017)

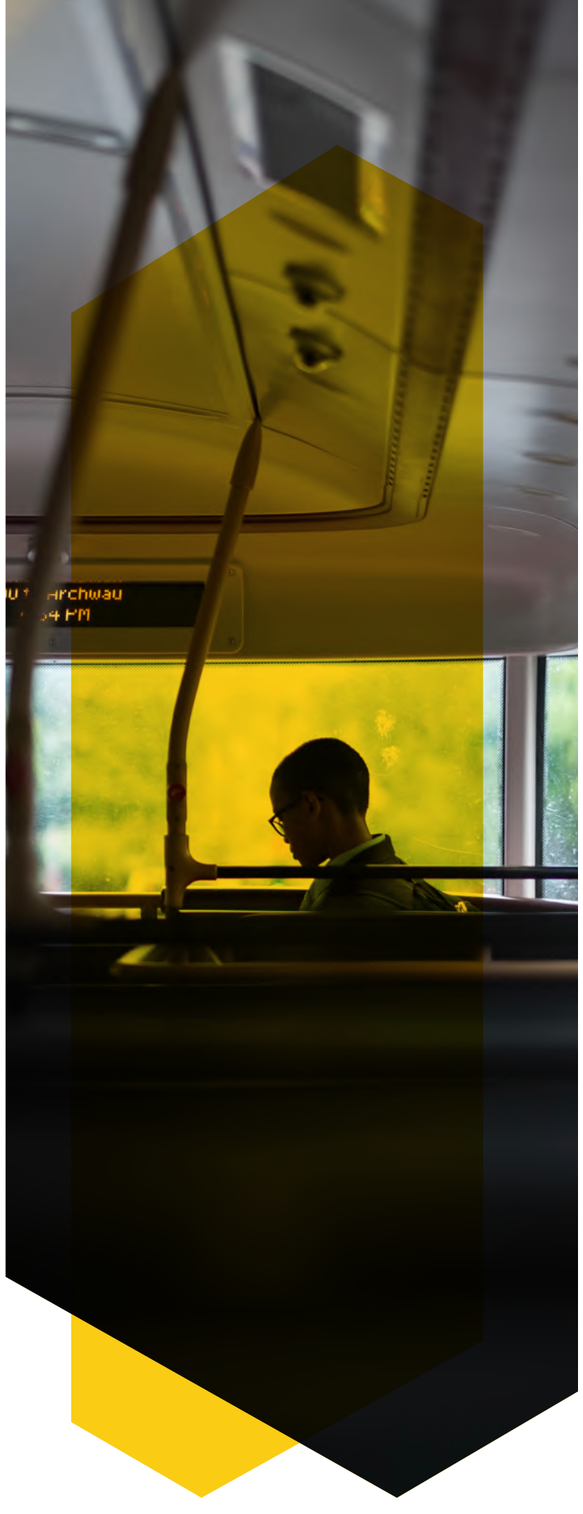
21 https://nextcity.org/daily/entry/how-much-public-space-does-a-city-need-UN-Habitat-joan-clos-50-percent

Poor road quality as well as low capacity and network coverage encourage informal transport and discourage formal public transport

The type and quality of the available public transport is influenced by all aspects of the road and street network, not just capacity and coverage. Poor pavement condition such as potholes and road surface erosion (both exacerbated by seasonal flooding and poor drainage) significantly reduces traffic speeds. It also causes damage to vehicles, especially large, sophisticated ones designed for operation in more benign environments. Structural deficiencies and poor design of the road network makes it inadequate for heavy vehicles with large turning radii. This situation is compounded by incomplete work on new arterial road links and roads being upgraded. In the interim, they remain inaccessible to large vehicles of any kind. This encourages informal transport modes (minibuses, shared taxis, vans) which use small, nimble vehicles that can operate on any road or street and utilize narrow, unpaved neighborhood streets to avoid congestion and complete their journeys.

Demography in Sub-Saharan Africa

Most Sub-Saharan Africans are less than 25 years old. Sub-Saharan Africa has a young age distribution, with about two fifths (40 percent) of its population in the 0-14 age bracket and nearly one fifth (19 percent) in the 15-24 age bracket.[22] Most of the young population has little education and accumulated capital. This is particularly the case for migrants from rural to urban areas. These factors impede access to the formal job market while encouraging growth in street trading, day work, and informal transport, both freight and passenger. The absence of specific job qualifications and easy availability of inexpensive, used vehicles provides virtually unlimited opportunities for people to enter the transport business and earn a daily, however meager living.



22 The Demographic Profile of African Countries, United Nations, Economic Commission for Africa, March 2016

A political economy with many informal public transport stakeholders having highly conflicting interests

In many cases, stakeholders playing strong roles in the informal public transport sector include politicians, the police, bureaucrats, large and diverse numbers of vehicle owners and license holders, insurance companies, industry associations (city-wide or by route or city section), drivers and their unions, touts, route and terminal managers, mechanics and, of course, users.[23] The sector is often defined by adversarial interactions among the multiple stakeholders who jockey to take advantage for personal benefit and make life difficult for users.

Entrenchment of interests leads to a perpetuation of the status quo and presents the most formidable challenge to change

Incumbent providers establish political alliances and maneuver property rights to favor a select few. Operators/owners are usually organized into unions or associations that control the sector. Their self-regulation is often enforced through intimidation and even violence. The system has evolved as an industry response to the vacuum left by government's failure to provide alternatives and regulate the sector. In some cities, unions have divided cities into zones controlled by a branch of the union (i.e., Lagos).

With over 70,000 members in Kampala and almost 200,000 in Lagos, unions are powerful organizations that are used to influence policy. The National Federation for Boda Boda Operators (NAFEBO) was established in 2000 and has been a dominant influence in Kampala and its 30 branches. The Nigerian Auto Bike Commercial and Workers Association (NACOWA) is a dominant union in Lagos and its 57 branches. Douala is an exception as only seven percent of moto-taxi owners belong to an operators' association, the majority preferring neighborhood associations or other organizations to pursue collective action.

While there is no formal process for market entry, the unions effectively control the market and deny entry to non-members. The unions' income depends on the number of affiliated vehicles plying their trade. This also serves as an incentive to restrict entry by non-members. Each operator must pay a fee in return for a right to operate and form an identity.[24] The union provides protection to its members against often unlicensed competition while representing other member interests.

In Lagos, union control is enforced by contracted youths (area boys) who extract payment from operators and can resort to violence when payment is withheld. These payments pass through the union chain of command and are used to "manage" the operations by seeking favors from politicians and police.

It has been difficult to control and regulate the industry as unions have gained political leverage with an increase in membership and funds from member dues. With a membership of 200,000 operators providing direct employment to 500,000, the economic power and political influence of the union can disrupt the life of the city.

23 Jacqueline Kopp and Winnie Mitullah, Politics, policy and paratransit, in Paratransit in African Cities, Roger Behrens, Dorothy McCormick and David Mfinanga (eds)

24 In Lagos, the fee varies from $30 to $176 annually, depending upon location and business demand.

The origin of informal transport dates to the colonial era and is linked to post-colonial state failure

In an article on the role of politics in paratransit, Klopp and Mitullah point out that "European settlers and officials 'planned' the city of Nairobi around personalized transport which facilitated physical segregation in terms of mobility."[25] According to Kenyan journalist Patrick Gathara, matatus are the "unholy offspring" of local entrepreneurship based on a flawed colonial design and post-colonial state failure to regulate the sector.[26]

During colonial times, there was little thought given to how native Kenyans would move in and around cities. It was not until the 1940s and 1950s that Kenya Bus Services, which had an exclusive franchise for carrying fare-paying passengers in and around Nairobi, expanded to serve "the Eastern parts of the city [where Africans lived] using vehicles built on lorry chassis."[27] As a result, most poor Africans have always walked instead of using public transportation.

It was to fill this void that matatus emerged in the 1950s, providing a way for native Africans to travel and move goods from rural areas to the city and to travel within the city itself. They also provided business opportunities otherwise denied to them by their colonial masters.

Where they exist, informal public transport policies typically vary between two extremes

One major policy theme is minimum intervention by government. In that case, the informal public transport sector is essentially unrestricted in managing itself, either by individual entrepreneurs or by their unions. Whether it is a particular route or the total number of routes, there is minimal or no regulation of the number of vehicles plying their trade. Regulation is also limited with respect to when service is offered, vehicle specifications and condition, safety, driver skills, labor conditions, etc. The opposite policy extreme is eliminating public transport outright in favor of more highly regulated "formal" public transport with improved conditions for passengers and labor.

The former policy view presumably flows from a desire to "unleash the untapped entrepreneurial potential"[28] of the informal sector and provide affordable mobility. The latter view reflects the desire by government to control the adverse impacts of the informal sector on city congestion, traffic, and passenger security while maximizing customer satisfaction and protecting labor.

Neither policy option is likely to produce consistently positive outcomes. Support for informal public transport without "checks and balances" often results in congestion, poor vehicle condition, predatory fares, deteriorating safety standards, and over-worked, under-paid staff. The option to ban informal public transport altogether denies users an important, affordable transport mode for the poor and takes away employment opportunities from a vast number of otherwise difficult-to-employ residents.

The sector's contribution to providing crucial livelihoods to the vulnerable urban poor cannot be ignored in policy development. In fact, available evidence suggests that for most poor, unskilled migrants in cities, informal work is generally critical to obtaining a bare subsistence livelihood.[29]

25 Jacqueline Kopp and Winnie Mitullah, Politics, policy and paratransit, in Paratransit in African Cities, Roger Behrens, Dorothy MoCormick and David Mfinanga (eds)

26 https://www.bloomberg.com/news/articles/2018-12-26/matatus-elude-center-city-ban-in-nairobi-kenya-again

27 Tom Opiyo, The Metamorphosis of Kenya Bus Services Limited in the Provision of Urban Transport in Nairobi

28 Hernando De Soto The Mystery of Capital, (2003)

29 Understanding the informal economy in African cities: Recent evidence from Greater Kampala, Angus Morgan Kathage, March 14, 2018, https://blogs.worldbank.org/africacan/understanding-the-informal-economy-in-african-cities-recent-evidence-from-greater-kampala

Informal sector myths and realities

Before presenting ideas on how to address the above challenges, it would be useful to explore some of the myths and common misconceptions that have had adverse implications for public transport reform in developing countries.

MYTH 1

The strategic transport plans of developing cities typically articulate a comprehensive approach to addressing the mobility and access needs of all sectors of society.

Reality

For many Sub-Saharan African cities, there is a strategic transport policy vacuum. Where strategic plans exist, they are usually a list of expensive infrastructure projects that may have little to do with the actual transport problems faced by society. With over 70 percent of the trips made on foot or by public transport – with an even higher percentage for the poorest segment of society - transport planning should be focused on access and mobility, and safety and security (especially for vulnerable travelers). The informal public transport system's challenges are often ignored to the detriment of its mostly poor users.

Moreover, there is rarely a clear, comprehensive set of urban passenger transport policies to guide actual investment and/management decisions "on the ground." In many instances, meaningful transport decisions are made *ad hoc* in response to political pressures, specific problems as they arise, or vested interests. Strategic plans are often focused on ameliorating congestion by focusing on large infrastructure-heavy investments, which mostly benefit people with access to private vehicles.

If Sub-Saharan African cities are to address their broad urban mobility requirements, there must be a greater appreciation of all dimensions of urban transport. In addition, there should be a focus on enacting politically difficult policy reforms with long-term sustainable benefits. The need for a comprehensive roadmap to achieve the country's vision cannot be over-emphasized. Unfortunately, the ability to effect change is often limited even in cities where a strategic plan exits.

To be effective, strategic planning must follow an often absent "6-C" process.

In many instances, strategic policies and plans have limited local ownership and reflect limited input from the main sector of public transport in Sub-Saharan African cities (informal public transport), its regulators, and police.

Plans usually do not consider constraints such as implementation and limited financial resources.

Planners do not engage the diverse array of transport stakeholders, including citizen groups, vulnerable populations, labor unions, and others directly impacted by decision-making.

The 6-C Process for Strategic Planning

Comprehensive

The plans need to cover the entire metropolitan area (often beyond administrative and political boundaries), address broad transport and related quality of life issues (e.g., land use, climate change, local air quality, energy consumption, social/economic development), and account for multi-modal tasks for all surface forms of transport. Transport reform is too often implemented and operated in silos defined by mode and geography, and too little supportive information is considered in the decision-making process relating to entire metropolitan multi-modal system.

Cooperative

Everyone with a stake in the transport system participates directly: Public agencies at all levels of government (municipal, province/state, central government), including Transport, Land development, Environmental, Social, Police, etc.; and civil society entities, e.g., NGOs, business community, and citizen groups.

Communicated

A two-way communications process should be implemented from the beginning of the process. Keep all stakeholders informed and provide a conduit for their input.

Championed

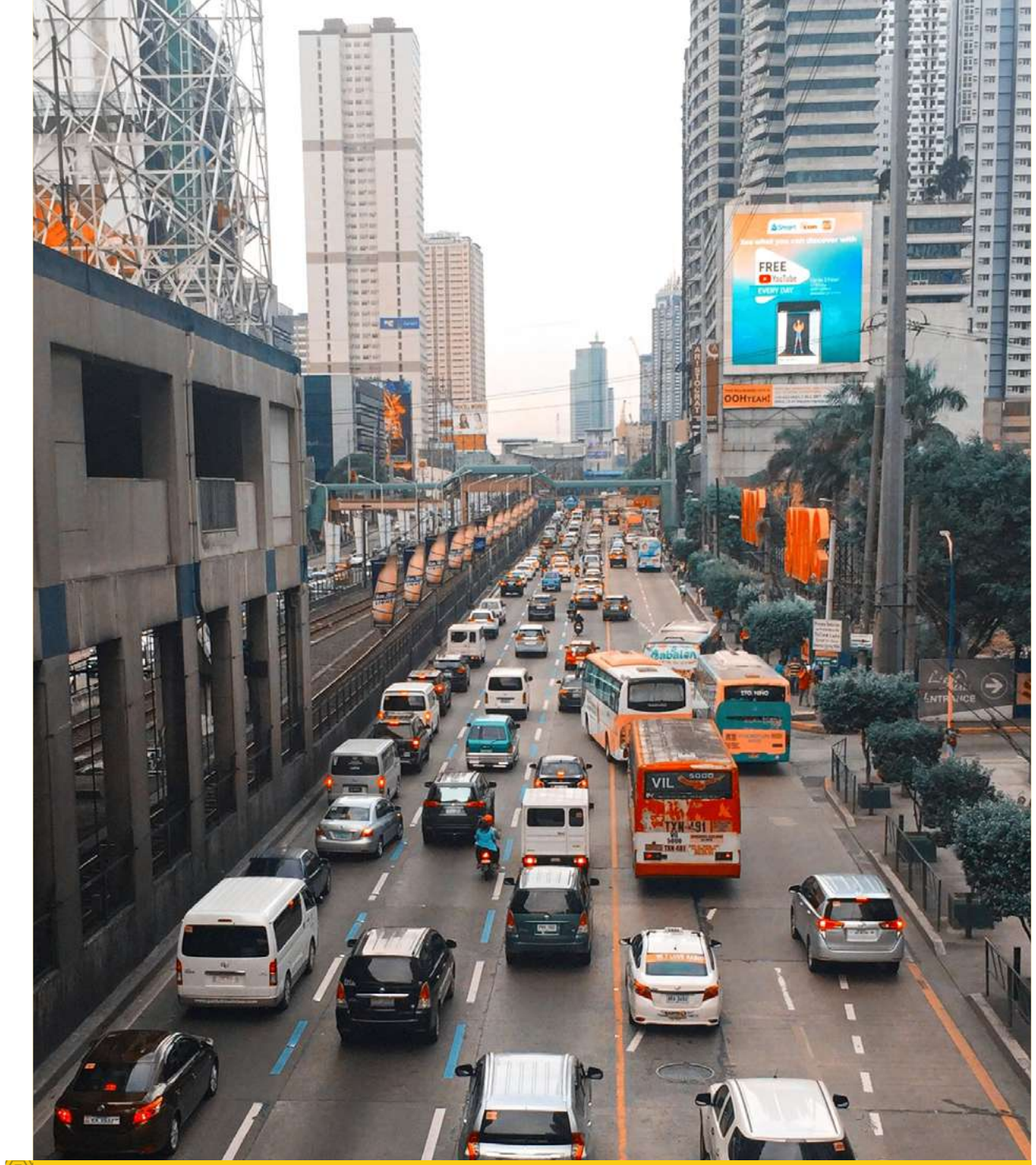
A strong proponent is needed who can ensure the strategic plan is used in meaningful decision-making, with legal authority to make decisions regarding funding and strategies impacting operations.

Connected

Implementing/operating authorities *must follow* formally adopted metropolitan, multi-modal plans, programs, and policies in making decisions, particularly on investments.

Continuous

Regular monitoring of system travel demand, performance, and condition is necessary while developing updates on a regular basis.



Without these considerations, the resulting strategy document will have no real connection to decisions on actionable policies or investments. To be useful, strategy documents must be guided by local capacity (human and financial) and a sense of ownership. Ultimately, an effective strategy should facilitate the implementation of solutions in a comprehensive manner.

MYTH 2

Investment in road infrastructure and procurement of new public transport facilities and rolling stock are the most "necessary" actions to address worsening urban mobility problems.

Reality

Committing public funds to build more road space and purchase newer, more attractive, and reliable public transport vehicles are a familiar but flawed response to transport needs. This approach, relying on a narrow assessment of the "urban transport problem," addresses symptoms rather than causes resulting in too little attention being paid to tackling the multidimensional root causes of a complex crisis.[30] Patrick Gathara, strategic communications consultant, writer, and award-winning political cartoonist in Kenya, expressed the following response to the government plan to build a 17-mile, four-lane expressway through the historic Uhuru Park: "The proposed expressway is not a serious attempt to deal with congestion. By the government's own admission, it is a road for those who 'are able to afford it,' a public subsidy for the rich."[31] [See Box IV-1 for the impact of policies focused on congestion.] Congestion is the "effect" of a multitude of possible underlying "causes" related to the following:

- Inefficient land development and urban sprawl
- Public transport quality and mismatched supply and demand
- Insufficient roadway connectivity and coverage
- Poor:
  - roadway design and condition
  - nonmotorized transport facilities
  - drainage
- Inadequate enforcement of traffic management regulations
- Unmanaged "free" parking in the wrong places
- Encroachment on important roadways
- Encroachment on sidewalks causing people to walk in roadway traffic
- Driver behavior, especially by public transport drivers competing on-street for customers

If Sub-Saharan African cities are to address their broad urban mobility requirements successfully, there must be a proper appreciation of multiple dimensions of urban transport conditions. Congestion tends to occupy the popular imagination as the most pressing mobility problem to the exclusion of all else. For the high percentage of people living in cities without access to private or even public motorized transport (as most trips are mostly by foot), addressing congestion may not be the highest priority.

If reducing congestion and providing mobility and access for low-income urban residents are the primary objectives, the pay-off from capital investments has been marginal in most cases. A new paradigm is required to change the business-as-usual scenario. To minimize use of personalized mode, it is widely understood in all countries that urban transport policy must encourage public and non-motorized transport for all urban residents regardless of income. Public policy should encourage people to "shift" people from private vehicles to non-motorized and public transport, and to keep people already using non-motorized and public transport from shifting to increasingly affordable private vehicles.

30 Gordon Pirie, Sustainable Urban Mobility in 'Anglophone' Sub-Saharan Africa, Thematic study prepared for Global Report on Human Settlements (2013). Available from http://www.unhabitat.org/grhs/2013

31 https://www.bloomberg.com/news/articles/2019-11-11/why-a-new-expressway-in-nairobi-is-a-bad-idea

Box IV-1. Key effects of too much focus on congestion

1. It is not possible or perhaps even desirable to ***eliminate*** congestion. One must balance the cost of additional congestion with the environmental and societal impacts of building new transport capacity. In cities where the cost of building new capacity is high (or land acquisition difficult), the optimal level of congestion will be high as well.
2. Most transportation/land use planners in developing cities do not compare different transport and land use alternatives when considering the best options for change. Rather, they evaluate the effects of pre-determined, "recommended" transport reform alternatives as opposed to a "do nothing" approach in terms of both transport and land-use.
3. Most plans seek to build highly visible new roadway and public transport capacity due to a perception that political and financial support will be easier to solicit. Easy solutions are largely illusory, however, as new capacity to meet public need is often prohibitively costly. As a result, managing existing capacity is ignored despite its importance.
4. Increasing capacity with a tangible produce is attractive to national aid agencies. These agencies can also require the firms to build the facility or supply the equipment from the donor country.
5. There is another perception that building new capacity will not require as much management of pressing issues as the existing system. Some exceptions include the alignments chosen for new roadway capacity on new rights of way. The poor are often impacted the most because they live either on marginal land closer to the city-center or in lower density land on the urban periphery. In poor neighborhoods, right of way costs are minimized and residents have the least political power to stop the projects. Building new capacity is thus very expensive in environmental and financial terms, and disruptive to society while only adding a marginal amount to existing capacity.

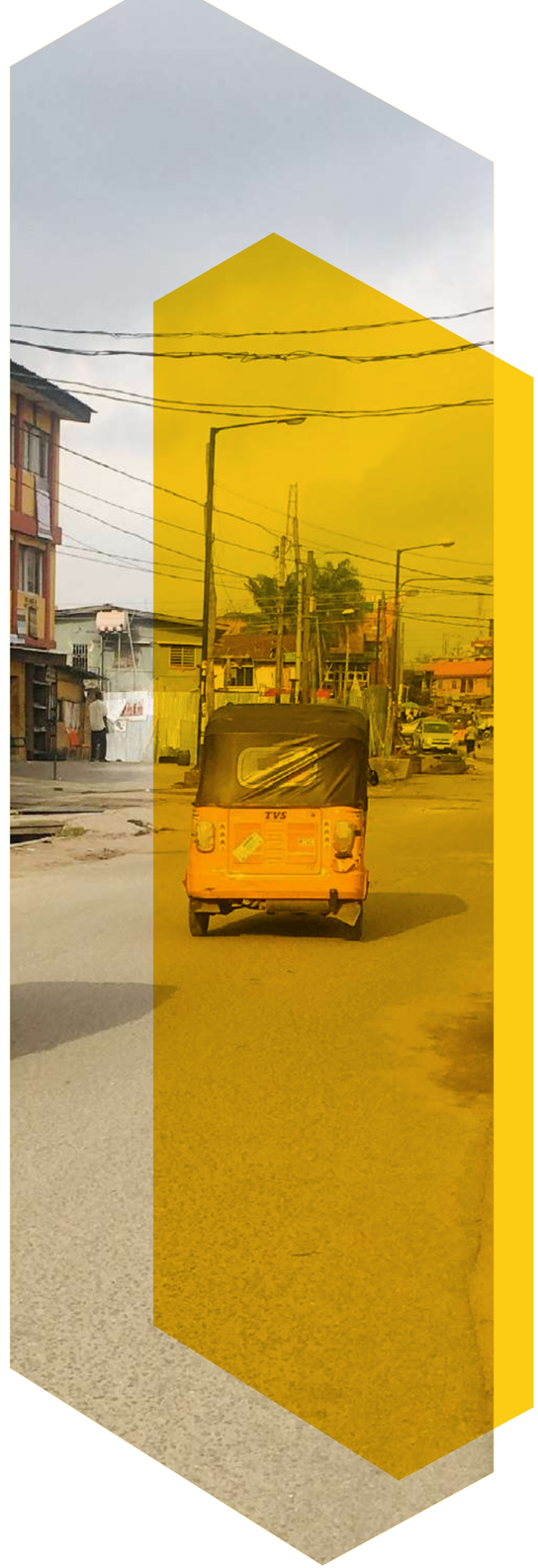
MYTH 3

The rise of minibus taxis and other forms of paratransit is the result of a conscious decision to deregulate public transport.

Reality

In developing cities with low auto ownership, dependence on public transport is high. The financial condition, performance, and quantity of all forms of formally organized public transport (either state or privately owned), however, is paradoxically poor and in further decline. This forces people and the market to develop creative solutions to address daily travel needs. The desire for creative solutions has led to rapid growth in non-conventional means of public transport, initially provided by minibuses and shared taxi/vans, and more recently by commercial motorcycles and three-wheelers. The paratransit modes have become the dominant form of public transport, but they also present the public with problems in terms of increased noise, pollution, and lack of safety. Government intervention has also been influenced by the political economy of the sector. Policies that promote rent-seeking that favor the interests of a select, small "connected" group further compound the problems and distort market structures. These policies are often promoted by a small, connected group comprised of officials responsible for regulation and enforcement.

The shift from formal (fixed route, fixed schedule bus service) to informal public transport (minibuses, shared ride taxis hailed on the street, etc.) did not result from a conscious decision to deregulate public transport. Rather, it was an indigenous response to limited supply (or no supply at all) of formal bus services and rising demand. Supply of formal services was often limited because fares were kept low to make them "affordable," while costs for state-owned enterprises were particularly high because of inefficiency, nepotism, and corruption.



The evolution of urban transport bus services over the past few decades can be divided into distinct phases:

a) Prior to the 1960s and before independence from colonial regimes, most cities relied on a private, monopoly supplier of formal services using large buses as the backbone of their urban transport system. Every city had a monopoly supplier of these services as the backbone of their urban transport system. Auto ownership was low, and most of the population used NMT or buses.

b) Post-1980, the traditional bus companies were nationalized in the process of decolonization, ushering in a regulated regime of state-owned public transport in the immediate postcolonial era. As a symbolic break from the former regimes in the post-independence era, governments took over the administration of public transport services. Multiple companies were consolidated into a single operation to rationalize services and achieve what were thought to be economies of scale. Fares were regulated, and governments were reluctant to increase fares for legitimate social welfare reasons.

c) The argument for subsidies was that they provided mobility and access to the majority population. They were implemented, in effect, to maintain political support from the poor. The subsidies took various forms, including direct cash payment to offset operator's losses, exemptions from taxes, assistance in the procurement of buses, and construction of operating and maintenance facilities. Unfortunately, the impact of rising subsidies on general public finance was not well understood. Governments became increasingly unable to provide needed and implicitly promised subsidies which adversely impacted sector performance. As costs rose and revenue fell, public subsidies failed to keep up with deficits.

d) Initially, the state-owned bus companies were able to operate without subsidy, but as deficits grew and public subsidies failed to grow commensurately, operators had difficulty maintaining and replacing their fleet. The result was deterioration in service frequency, capacity, coverage, and quality. Most of the publicly owned or subsidized companies eventually failed and went out of business. Many of the bankruptcies occurred during the 1990s when structural-adjustment policies severely limited the availability of public funds for subsidies.

Photo IV-1.
Minibus terminal in Lusaka reflecting the poor condition of infrastructure.

Photo IV-2.
Minibuses waiting outside a terminal for their turn to load passengers.

e) During the late 1980s, most of the public companies had failed and ceased operation. Many of the bankruptcies occurred when structural-adjustment policies severely limited the availability of public funds for subsidy and hard currency for importing needed spare parts and new vehicles. In the late 1980s, governments embarked on Economic Structural Adjustment Programs (ESAPs) requiring countries to implement certain economic restructuring policies that rendered a significant number of civil servants redundant. It is against this backdrop of economic liberalization that urban public transport was partially deregulated in the early 1990s and saw the introduction of privately operated buses.

f) By the early 1990s, the urban transport sector had undergone a major transformation. The private sector had assumed a much greater role as operator of "'minibuses" in all their forms. The use of second-hand, imported minibuses expanded by over 10 percent per year. The initiation of vehicle manufacturing in South Africa also promoted the introduction of locally produced minibuses throughout the region. Companies such as Toyota, IVECO and Mercedes Benz introduced "minibuses," hybrids of large vans and small buses that were ideally suited to the kind of market, roadway, and general traffic environment where the informal sector operated. They were not only faster and cost less to operate and maintain than the large, imported buses provided by formal services, but they were more comfortable and frequently accessible. Women have particularly found them to be more secure than the "crowded-with-standees" formal services where they were subject to harassment.

g) More operators and passengers were opting for minibuses to the financial detriment of formal services that use large buses.

h) Since 2006-2007, "sedans" of 10-15 years in age have been imported from Japan via Durban at a cost of about US$2,000 to US$4,000. These cars are being used as shared-ride taxis, with their numbers increasing at over 10 percent annually.

i) More recently, the burgeoning number of minibuses and taxis has saturated the market. The predatory behavior of informal sector public transport drivers competing on the street for customers has made roadways, already overwhelmed by the increase in private vehicles, even more congested. Declining travel speed, vehicle quality and reliability, safety, and security are once again making users (and politicians) long for the introduction of new and more efficient, conventional fixed route and fixed schedule services that utilize large, modern vehicles. Users see the benefit of an organized, presumably more efficient, and higher quality transport system.

Today, minibus and shared taxi passenger transport businesses all over Sub-Saharan Africa generally operate in a regulatory vacuum. "Informal" service operators typically start as small, so-called "one person, one vehicle" operations. Over time and circumstances permitting, however, certain operations and business models unique to a given place have emerged. These models meet local travel needs, are understood by the users, and have become established in the transport marketplace.

Operators are driven by fundamental profit maximization. In the absence of appropriate regulation and weak enforcement, they operate unconstrained and in their own best interests. Low fares coupled with low productivity due to congestion and encroachment, compel the operators to compromise on service quality just to survive in the market. Often, the traffic police, licensing authorities, and vehicle inspections are all managed by people who are motivated (at times because of poor work environment) to compromise enforcement and seek payments ("bribes") from bus operators. This has the adverse impact of: a) reducing operators' profit margins and further incentivizing them to dilute operating and safety standards; and b) providing further incentive for authorities to compromise implementation of reforms for monetary benefits or "coffee money" as some of them admit openly. There is a common perception of poor behavior on the part of small vehicle operators due to their large numbers on the roadway. The minibus operators, in turn, claim that they are more likely to follow traffic rules and regulations,[32] while high-capacity vehicles under the control of management companies are inclined to violate traffic regulations.

Other arguments offered by minibus operators in support of their operations are based on:

The relative low cost of minibuses.
High-capacity vehicles are considered unaffordable because they cost three times the price of a brand new 14-seater. The chairman of Matatu Welfare Association in Nairobi argues that the cost of acquiring a 25 seat matatu is about Kshs4.2 million (USD 49,587) as compared to Kshs1.5 million (USD 17,709) for a 14-seater matatu (Rubadiri, 2012).[33] Smaller capacity investors who cannot afford high-capacity vehicles usually purchase second-hand vehicles which are relatively inexpensive and easy to operate.

Lack of access to bank financing.
In view of the high risk and inability to provide collateral, commercial banks are unwilling to lend money to individual operators to buy new vehicles. Many operators must resort to personal and family savings to buy second-hand small vehicles.

A case of no subsidy and low fares.
Small bus operators get no capital or operating subsidy from government. The fares are kept low, however, making it all the more difficult for them to finance high quality buses.

Poor infrastructure.
Small operators do not have access to proper depots and garages and must maintain their vehicles in an extremely poor environment, often parking at home and maintaining their vehicles on the roadside. While this helps keep costs low, the quality of services remains poor.

The directive to reduce 14-seater vehicles has unintended policy consequences:

- *Growth in two- and three-wheeled vehicles to fill the gap.* Several areas in the city are dependent on small capacity vehicles, particularly in the growing outlying suburbs and their narrow streets. Implementation of the directive to reduce the supply of 14-seater vehicles has led to a growth in even smaller capacity operators such as motorbikes (okadas), tuk tuks (auto rickshaws), and shared taxis. Several personal vehicles got converted to taxis, a growing trend given the high unemployment discussed earlier. This has the unintended consequence of increased congestion, security concerns, road safety issues, and environmental pollution.
- *Growth of illegal commercial vehicles and lost city revenue.* Restrictions on new licenses for minibuses result in a growing number of illegal vehicles because people are captive users of public transport and willing to patronize any alternative available service. This also results in a loss of revenue to the city and makes it more difficult to enforce discipline. The willingness of officials responsible for ensuring compliance with regulations to turn a blind eye to illegal operations in exchange for petty cash further supports the growth of illegal vehicles.

32 Ibid

33 https://www.capitalfm.co.ke/news/2012/01/matatu-operators-clinging-onto-14-seaters/ - Accessed on October 24, 2020

MYTH 4

Exponential growth in informal public transport is simply a result of the collapse of the formal government-owned and operated bus systems of the 1970s-1990s.

Reality – Partially True (but not the whole story)

The basic driver of growth in the market for urban public transport of any kind is the exponential growth of Sub-Saharan African cities and the way they have expanded in size. There are many aspects of the informal sector that make it "nimble" and adaptable to changing demographic, land-use, and operating environments in terms of roadway capacity, condition, and coverage. This adaptability is not a feature of a highly regulated service system that requires large amount of capital and human resources, both private and especially government. Several other factors, i.e., high unemployment, ease of entry, the promise of a quick return, etc. contribute equally to the growth in informal services. The poor quality of road infrastructure also supports informal transport vehicles with their agility and ability to navigate narrow streets.

The official unemployment rate in Lusaka, pre-Corona Virus was estimated to be 16.3 percent[34] in 2017. In Maseru, it was estimated to be 23.5 percent,[35] one of the highest in the world. Easy-to-acquire driving skills and the availability of inexpensive, imported used taxi vehicles have provided virtually unlimited opportunities for people wishing to enter the business as entrepreneurs or workers.

Photo IV-3.
Okada giving a ride to a passenger in Accra.

Photo IV-4.
Okadas in Freetown waiting at a busy intersection for passengers.

Photo IV-5.
Exponential growth of three-wheelers imported from Asia have saturated the streets of Freetown in the past few years.

34 https://diggers.news/business/2017/09/28/youth-unemployment

35 The Economist, January 25, 2020

MYTH 5

Informal public transport's safety, security, environmental and performance issues far outweigh its benefits; it should be eliminated entirely.

Reality - False

Minibuses have an advantage in their ability to address different supply and demand parameters. They can adapt to different market needs in terms of demographic and land use through a variety of service times, stopping patterns, fares, and routes.

The key advantages of minibus operations include the ability to:

- Penetrate every corner of large, complex metropolitan areas;
- Provide financially viable services for travel markets where all other forms of transit fail;
- Move "upscale" in terms of vehicle and service quality;
- Easily and rapidly adapt services to changing demand patterns;
- Organize untrained, poorly educated, and poorly paid workers into effective transportation enterprises with significant aggregate political power;
- Utilize entrepreneurial spirit; and
- Mobilize local investment and/or be self-financing.

In addition, their agility, ease of acquisition, viability without subsidies, and flexibility of fares and schedules offer considerable advantages to the traveling public.

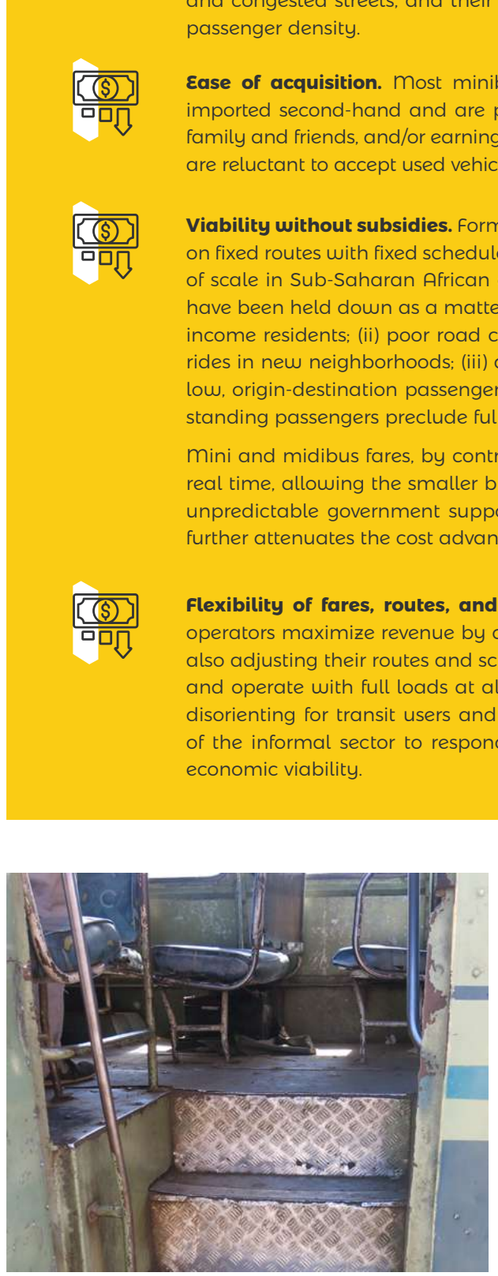
Agility. Many Sub-Saharan African cities have relatively low densities and scattered workplaces so many employees live far from where they work. Streets are narrow and in poor repair. The key advantage of small vehicles is their speed, their operability on narrow and congested streets, and their ability to make a profit serving outlying areas with low passenger density.

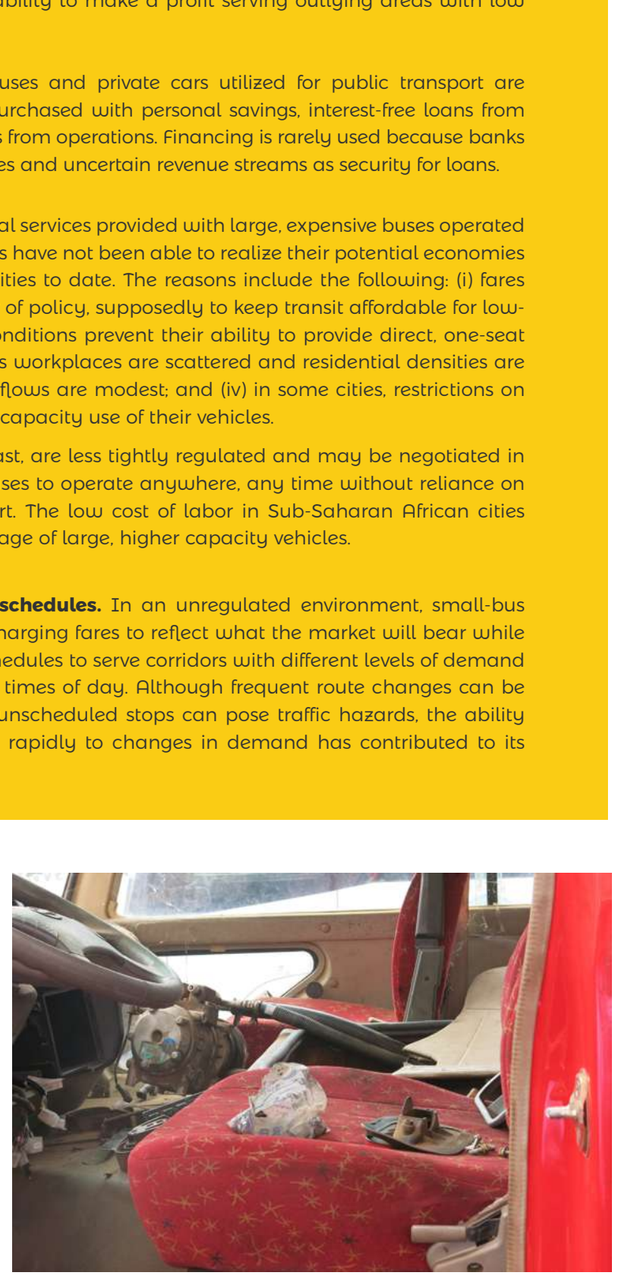
Ease of acquisition. Most minibuses and private cars utilized for public transport are imported second-hand and are purchased with personal savings, interest-free loans from family and friends, and/or earnings from operations. Financing is rarely used because banks are reluctant to accept used vehicles and uncertain revenue streams as security for loans.

Viability without subsidies. Formal services provided with large, expensive buses operated on fixed routes with fixed schedules have not been able to realize their potential economies of scale in Sub-Saharan African cities to date. The reasons include the following: (i) fares have been held down as a matter of policy, supposedly to keep transit affordable for low-income residents; (ii) poor road conditions prevent their ability to provide direct, one-seat rides in new neighborhoods; (iii) as workplaces are scattered and residential densities are low, origin-destination passenger flows are modest; and (iv) in some cities, restrictions on standing passengers preclude full capacity use of their vehicles.

Mini and midibus fares, by contrast, are less tightly regulated and may be negotiated in real time, allowing the smaller buses to operate anywhere, any time without reliance on unpredictable government support. The low cost of labor in Sub-Saharan African cities further attenuates the cost advantage of large, higher capacity vehicles.

Flexibility of fares, routes, and schedules. In an unregulated environment, small-bus operators maximize revenue by charging fares to reflect what the market will bear while also adjusting their routes and schedules to serve corridors with different levels of demand and operate with full loads at all times of day. Although frequent route changes can be disorienting for transit users and unscheduled stops can pose traffic hazards, the ability of the informal sector to respond rapidly to changes in demand has contributed to its economic viability.





The disadvantages of minibus operations include such negative externalities as congestion, poor safety and security, and negative environmental impacts. Moreover, the number of operations are often determined by political expediency (or even corruption) rather than public need and financial viability, making it difficult for operators to provide a minimally acceptable level and quality of service. These problems are unlikely to be addressed by market forces alone, and public regulation is often poorly enforced or nonexistent. At the same time, too many unregulated entrants make it tough for informal operators to remain financially viable. This leads to a decline in service and erratic, dangerous operations as drivers compete on the street for customers and defer maintenance of their vehicles.

Even in developed cities before COVID-19, there was a growing recognition that conventional "formal" public services, irrespective of mode, were not the only desirable form of public transport service. For example, virtually every large city in the U.S. and Canada has undertaken demonstration projects of replacing fixed route, fixed schedule service directly operated by state-owned enterprises with on-demand, shared-ride "minibus" services operated by private-entrepreneurs in certain places. These services operate under competitively procured contracts with subsidies. They may or may not have fixed routes and designated stops and, to date, have been implemented in lower density, lower demand suburban areas and corridors.

With the significant drop in transit demand due to COVID-19 and the reduction of dedicated transit tax revenues, this trend is accelerating in terms of the number of cities trying the approach and the kind of market environments where it is being applied.

Photo IV-6.
Available public transport systems provide mobility to people but with many negative externalities, including overcrowding, poor service, old buses, accidents, pollution.

MYTH 6

Public sector ownership and direct operation of fixed schedule, route and stop "formal" bus services—a public transport model essentially universal and exclusive in developed cities as late as the 1990s—is ideal and should be recreated where it has disappeared in developing cities.

Reality - It Depends

In most developing cities, the informal public transport sector has become established due to the inability of the formal sector to provide the amount of service needed to meet demand. Typical reasons for informal public transport growth and dominance include the following factors:

- Availability of informal public transport does not keep pace with rapid and sustained expansion of the urban geographic area and population, leading to capacity shortages and long waiting times in key corridors.
- The formal transport system is not always appropriate for serving low-volume, dispersed, local suburb-to-suburb and intra-urban core community-to-community travel, especially where "standard" 11-12+ meter buses are utilized. This leads to a significant unmet market need for short trip travel. Consequently, this short trip travel market is the fastest growing means of transport in Sub-Saharan African cities.
- At best, formal public transport systems can only provide minimal service efficiently in outer suburban fringe areas, again leading to significant unmet travel needs.
- For a variety of reasons (e.g., labor agreements, political pressure), formal public transport networks are not easily adapted to changing activity and travel patterns in Sub-Saharan African cities.
- Formal public transport systems of all kinds are vulnerable to frequent financial crises brought on by politically constrained fares, over-employment, industrial unrest, and other reasons. This leads to severe service shortages.
- The formal transport system is dependent on government subsidies and therefore experiences diminished coverage, capacity, and performance in times of national macroeconomic financial crises caused by COVID-19 and other factors.
- The formal transport system was intentionally designed to serve high volume corridor travel markets such as peak period commutes for people employed in the urban core. Other types of trips are most often poorly served or not served at all.
- Formal public transport services are inadequate in the evenings and weekends because they are considered financially unsustainable during these low travel volume times, leaving a serious service gap for those in need to travel.
- Formal public transport is not flexible enough to accommodate peoples' changing travel habits and living patterns.
- Formal public transport is not capable of operating on the narrow, unpaved roads and streets typically found in the outlying areas of developing cities.

These factors result in significant gaps in service which lead to unmet demand for access and mobility, especially for the poor. In developed countries, such transportation gaps are met by private cars, resulting in increased automobile dependency. In developing countries where there is low private vehicle ownership, this option is not available to most of the population. The result is growth in the informal sector, beginning in most cities on a relatively small scale as unauthorized services. This growth can include the following: registered bus operators who begin to provide services on unauthorized routes and times; private, for-hire minibuses and sedans offering subscription services to groups of travellers; private cars serving as unauthorized shared taxis; registered taxis offering unauthorized shared services; or motorcyclists offering paid rides.

Photo IV-7.
Shared taxis waiting for passengers along a busy commercial area in Harare.

MYTH 7

The quality, quantity and usage of public transport is declining in most developing cities. The only way to address the resulting chronic and escalating traffic congestion is to reform public transport by investing in mass rapid transit, bus or rail, and make all other transit subsidiary to it.

Reality - Not Always True

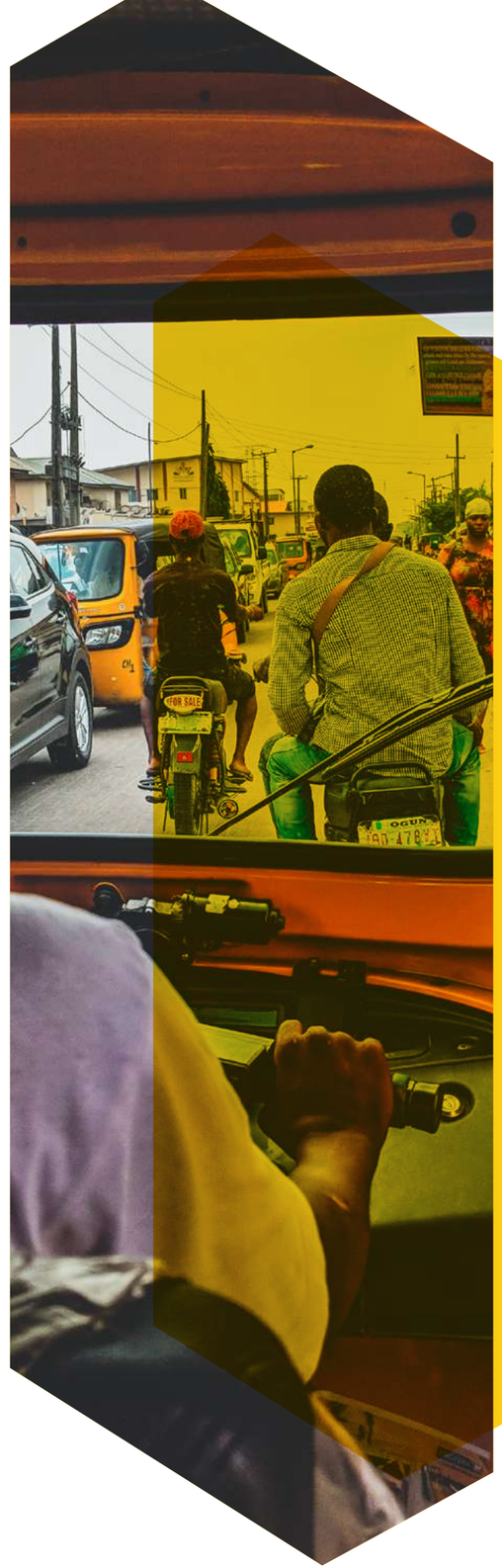
The following statement is heard very often in many developing cities:

"Over the last 20 years, the city's urban transport infrastructure has come under increasing pressure from massive population growth in the city and its satellite towns. The city has a limited number of state-subsidized public transport buses. Commuters are forced to use thousands of aging, dangerous and unreliable informal buses. These small minibuses (known by different names) are notorious for their lack of safety and reliability. In addition, massive expansion in private vehicle ownership has resulted in huge increases in carbon dioxide emissions contributing to climate change. This coupled with decaying infrastructure has resulted in the city's roads becoming dangerous and, in some cases, almost impossible to use.

To solve these problems and to provide a safe, reliable, and affordable public transport system that addresses the city's climate change agenda, the city is proposing construction of a metro rail system, which is environmentally friendly and safe for women and children. The rail system would be developed in three phases, with the initial phase of [x] km in length linking the major high-density residential and industrial areas. The metro corridor line will be elevated above ground level to ensure free movement of people and existing traffic. As the line is elevated, it will be cheap and simple to acquire land for construction.

The minibuses would play a key role in ferrying people to/from the station."

Is this a correct representation and optimum solution for the problem identified?



A few caveats first:

1. There is no universal solution. What works well in one place (or even sub-area or corridor) may not be appropriate in others depending on the determining context. The most appropriate public transport system will vary from city to city, and even within individual cities and corridor/ sub-areas, according to the characteristics of the respective public transport market and operating environment (roadway) into which the system will be built.
2. A given corridor may be best served by a combination of different types of public transport operating in the same geographic area. As such, there can be no single and clearly established "optimal" public transport solution. Rather, an optimal public transport system will have a framework in place for planning and designing a particular corridor in which a Metro, BRT line, or other system plays a role.
3. As discussed earlier, the informal transport sector is aging, unsafe, and unreliable. It is not subsidized, however, and is heavily subscribed by commuters who lack other options. The negative externalities are partly a failure of local government to implement the regulatory guidelines, such as vehicle testing, driver licensing, and safety requirements. Efforts in the past to simply ban the informal transport system have not been very successful.
4. International evidence suggests that the costs of urban rail and BRT investments are often under-estimated, while the benefits are over-estimated. Careful analysis of all alternatives is imperative before investing public funds. As stated by Pickrell (1992),[36] "Optimism about rail transit almost certainly allowed some local officials to endorse projects that they could not have politically afforded to embrace if more reliable information on prospective ridership and costs had been available to the public."
5. In addition to capital costs, there is also a need to consider life cycle costs such as operations and maintenance.
6. The environmental impact of rail projects, including emissions at the source as well as a self-sufficient power supply for residential and industrial purposes in the city, must be evaluated fully.
7. An elevated mass transit system imposes significant environmental costs to neighbors and land acquisition may be expensive. The cost of traffic diversion and noise pollution during the construction period needs to be incorporated into the general cost estimate.

To address the declining quality and quantity of public transport, it is critical to evaluate all possible alternatives objectively, considering life cycle costs, impact on road safety, financial sustainability, and modal mix.

Photo IV-8.
Elevated rail structure in Cochi, India has compromised road safety by reducing visibility and making it difficult for pedestrians to walk across the street.

36 Don Pickrell, A Desire Named Street Car: Fantasy and Fact in Transit Planning. American Planning Association, Spring 1992

MYTH 8

Bus Rapid Transit Systems (BRTS) are always a desirable solution to rapidly escalating traffic congestion and the low quality of public transport in developing cities.

Reality - False

"Think rail, see bus" goes the BRT motto. Proponents of BRT systems stress the combination of bus transit flexibility with the benefits of a rail-based mass transport system such as speed, reliability, and mass ridership, at a fraction of its costs.[37]

174 cities across six continents have BRT systems as of January 2020, operating over 5,000 km of the system.[38]

Research documenting BRT successes in Latin America describe 'a new era in low-cost, high-quality' rapid transit and serve as a key part of the argument advocating for BRTs in Sub-Saharan Africa.[39] Described as the "world reference point for bus rapid transit systems," Bogotá's celebrated TransMilenio became the "first mass transit system in the world designated as a Clean Development Mechanism under the UN Framework Convention on Climate Change."[40]

It is critical to note that within each city, there are different public transport markets and operating environments (e.g., corridors with high passenger volume and significant daily turnover versus low demand, intra- suburb markets where most travel is limited to peak periods). The first market may be best served by fixed-stop and scheduled routes operated by large enterprises, while the latter may be best suited to informal services and operations. Perhaps more important, BRT does not represent a specific mode or technology but a spectrum of options to provide a high-quality public transport system based on the specific local context. The table below presents different stages in the development of BRT, each suitable to a specific local context.

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37 ITDP estimates that BRTs are between four and twenty times cheaper than tram or light rail transit (LRT) and ten to a hundred times cheaper than metro. See 'Bus Rapid Planning', p. 1.

38 https://brtdata.org/location/africa

39 International Energy Agency, Bus systems for the future: Achieving sustainable transport worldwide (OECD Publishing, Paris, 2002)

40 International Transport Workers' Federation (ITF), 'Transport toolkit: Trade union influence on World Bank projects. Case study: urban public transport in Bogota' (ITF, London, 2010), p. 1.

Table IV-1: Stages of BRT development[41]

	Initial BRT	Intermediate BRT	Full BRT	
Components	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**
Running Ways	Shared lanes in mixed traffic/ some preferential treatment	Designated lanes/ HOV lanes/queue jumper/ segments	Dedicated lanes and segregated facilities	Exclusive alignment with full grade separation
Stations	Improved shelter, signage and amenities	Additional passenger information, safety and security amenities	Enhanced station services and fare collection	Enhanced berthing loading and land use feature
Vehicles	Exterior aesthetic, and ride/comfort features	Improved boarding accessibility and information features	Diversified vehicle sizes, materials, capacities	Guidance propulsion and alternative fuels features
Services	Improved service frequency and reliability	Extended stop distances, skip-stop and express services	Regular coordination, high frequency and reliability	On/off alignment, operations and convenient transfer options
Route Structure	Single route with transfer connections	Multiple route operations with transfer facilities and unique identity	Integration with regional network/ direct transfer options	Flexible route options to increase one seat rides and reduce transfers
Fare Collection	Increase pre-paid fare sales	Introduce proof of payment fare systems	Utilize electronic fare collection system	Implement multi modal smart card system
ITS	Signal preference enhancements to improve travel time and schedule adherence	Passenger information to increase convenience and ridership	Docking enhancements to reduce boarding times	Vehicle location and surveillance to improve system coordination and safety/security

41 Colin Brader, ITP, U.K.

BRT systems can be simpler and less costly than rail-based rapid transit. They also have unique planning and implementation challenges that if not adequately addressed up front, can lead to less than successful outcomes. The introduction of BRT systems often requires transitioning from a loosely organized public transport sector to one that is highly regulated and controlled, leading to competition with the former system.

There is also a need to coordinate the activities of the multiple agencies involved in planning, financing, implementing, operating, or regulating various aspects of the public transport system. Another challenge is that roadway space previously available to any vehicle is often dedicated for exclusive use by BRT systems. Although most people travel in any developing city corridor by public transport, this is often perceived as interference with the "rights" of car owners and users who are influential in their society.

Box IV-2.: Context of Bogota vs Sub-Saharan African cities

Bogota's context.
Bogotá is a middle-income mega-city with a population in excess of 7 million inhabitants and a density of 230 people per hectare. The level of motorization is over 250 vehicles per 1,000 people. City development is constrained by mountainous terrain resulting in travel demand being tightly focused on a limited number of corridors (peak flow of >35,000 trips per hour per direction). In Bogotá, public passenger transport had historically been provided by small-medium size buses competing on the street for customers. Nearly uncontrolled entry meant that there were too many providers chasing too few customers. Financial problems led to low service quality. On the street, competition led to significant problems with accidents.

The need for a mass-transit system to tackle urban congestion had been recognized for several decades, and the political pressure for change had increased over this period. When the reform and investment process began, there was strong political leadership to ensure goals would be met (as in the case of Curitiba, for example). There were also public sector institutions with sufficient human resources to efficiently and effectively implement decisions made by informed political leadership.

Sub-Saharan African cities' context.
By comparison, major cities in Sub-Saharan Africa have an average of 2-3 million inhabitants and relatively low population density over the aggregate urban area. Levels of wealth vary quite widely but people are typically 40 percent less wealthy than their counterparts in Bogotá. Motorization levels are also much lower, and city development patterns are less constrained by geography (apart from those on the coast or in few cases by other geographic elements) and thus tend to have a lower population density with fewer large activity nodes. Single-corridor passenger flows that justify a mass transit solution are limited to a few areas. In addition, there are few institutions with the political power and human resources to implement a transformative reform agenda. In Sub-Saharan Africa, minibuses provide most of the public passenger transport. Significant large-bus undertakings (none with more than 30 percent modal share) are confined to Abidjan, Accra, Addis Ababa, Dakar, and Nairobi as well as the major cities of South Africa.

The pressure for change is coming from the affluent private car user affected by congestion rather than the wider population directly affected by poor quality public transport services. The fact that public transport users lack power means that there is a lack of political support for change.

In addition, Sub-Saharan Africa lags behind Latin America in urban infra-structure development of water supply, sanitation, and waste management. The high opportunity cost of capital for urban infrastructure in Sub-Saharan Africa has implications for the level of investment that can be justified in localized transit schemes. The ability of Sub-Saharan cities to attract private and public financing is considerably lower than in Bogotá.

For all these reasons, a very contextualized approach is required for Sub-Saharan Africa.

Photo IV-9.
Lagos BRT Lite

Despite these challenges, the planning and implementation of BRTs is too often seen as an engineering exercise focused on providing segregated BRT transitways, state-of-the-art vehicles, and complex ITS applications. In other words, the primary focus is on BRT "hardware" rather than the market and services (the most important planning and design criteria), the role of critical institutional support and governance, and the political and technical advocates necessary to get BRT successfully planned, implemented, and operated as part of a comprehensive public transport system. That system, in turn, will no doubt include informal sector services in some form.

Improving public transport should be context sensitive, reflecting the:

- Political situation
- Current and future public transport markets
- Providers
- Institutional framework, including human capacity to effect systemic change
- Financial, economic situation
- Legal structures
- Labor

MYTH 9

The poor performance of the private sector suggests that cities must maintain existing publicly owned and operated bus companies or establish a new one.

Reality - False

One of the core principles of urban transport is that strategic planning, policy formulation and management, regulation, and monitoring functions should be in the public sector domain. The actual delivery of services should be treated as a commercial business to be carried out by the private sector. Or to put it differently, an entity responsible for setting policy for planning, regulating, and monitoring bus operations should be placed at arms-length from the entity actually responsible for the delivery of bus services. An argument is often made that public provision of transport services is important to meet social and environmental objectives. It is important to address the diverse needs of the population, including those of the poor and people requiring special attention while also mitigating negative externalities. But the private sector can be equally responsible for meeting prespecified criteria through performance contracts that clarify multiple objectives and make it easier to quantify objective performance.

The basic objective is to create a commercial, competitive service environment. The conditions necessary to create such an environment include:

- The creation of separate regulatory and operational responsibilities that maintain an arms-length interaction between the "regulator" and the "regulated," thereby reducing adverse effects of government intervention on operational efficiency.
- The need to create a fair and competitive process where all providers are subject to the same conditions and evaluated based on a common set of criteria. Public sector operators often receive support services (fuel, spare parts, bus purchase, and access to terminal facilities) on non-commercial terms which puts private providers at a disadvantage.
- The need for accountability on the part of public service providers. The promise of a "bail out" at year-end for any operating losses takes away incentives to exercise efficiency in the delivery of services.

Photo IV-10.
The few large buses operated by state-owned enterprise in Lusaka are heavily patronized due to low fares but are insufficient to meet the growing demand.

MYTH 10

To protect the interests of the poor, it is important to regulate bus fares while allowing competition in the market.

Reality - False

Perhaps the most contentious and politically charged issue in public transport is fare policy. Governments are reluctant to increase fares for legitimate social welfare reasons. The argument for subsidies is that they help provide mobility and access to a large segment of the population. It is also done to maintain political support. The subsidies take various forms, including direct cash payments to operators to offset deficits, exemptions from taxes, public procurement of buses, and other infrastructure for private operator use. Unfortunately, the impact of subsidies on overall public finance is not well understood and often ignored in the short-term. As a result, sector performance is hindered as governments are increasingly unable to provide needed and implicitly promised subsidies.

As general transportation costs increase due to external and internal economic factors (e.g., fuel, cost of living) and revenue does not increase commensurately, financial deficits tend to escalate. In Sub-Saharan Africa, public subsidies do not keep pace with the need of operators who have difficulty maintaining, replacing, and operating their fleets.

The result is deterioration in service frequency, capacity, coverage, and quality which leads to declines in passenger revenue which in turn leads to a further decline in supply-side economics -- a so-called "death spiral." Most of the publicly owned or subsidized companies eventually failed and went out of business.

At the same time, government was unable to meet the growing demand and relaxed entry regulations to allow the private sector to compete in the market regardless of the controlled fares in place. The expectation was that the private sector would fill in the gap without requiring any subsidies. The practice followed in the cities combines the worst of both models as fares are regulated without the benefit of protection against competition from the informal sector.

The public transport buses must compete with a lower-cost structure offered by privately operated minibuses, taxis, and shared taxis while also respecting the obligatory lower fares and other social commitments. Moreover, the private sector is allowed free entry and is loosely regulated within a controlled fare structure domain. To survive in the market, the private sector compromises on safety and quality of service, using old buses that are badly maintained and crowded in a congested and hazardous roadway environment. Public sector operators are unable to generate resources to replenish their vehicle stock, recover operating costs, maintain their vehicles, or buy spare parts and fuel. The public loses on both counts.

There is another aspect of fare control. If fares are regulated and insufficient to meet operating expenses, the quality of service will deteriorate over time in absence of other sources of income (subsidy, advertisement, etc). On the other hand, if the quality of service is specified, the income from fare or other sources will have to vary to meet the standards. It is not possible to control all three parameters — fares, other operator income, and level of service — simultaneously at an economically desirably and financially viable price point.

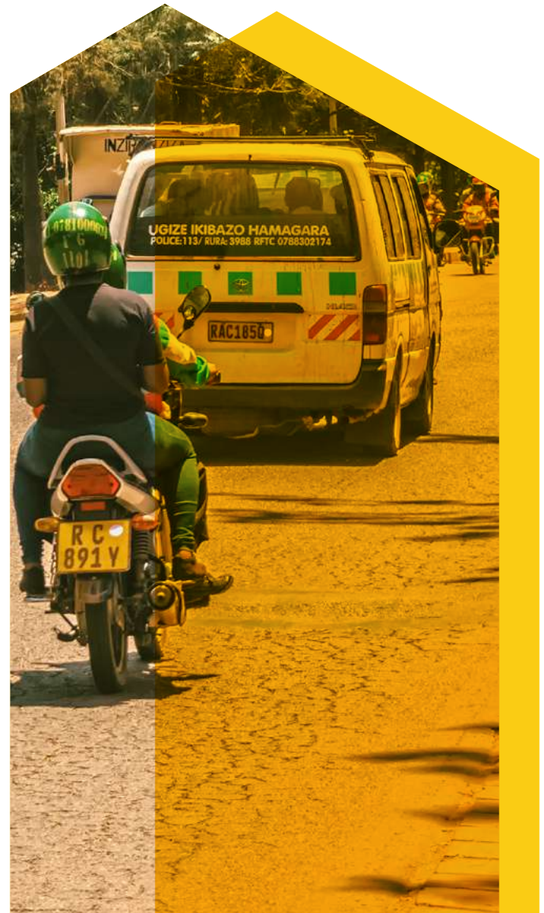
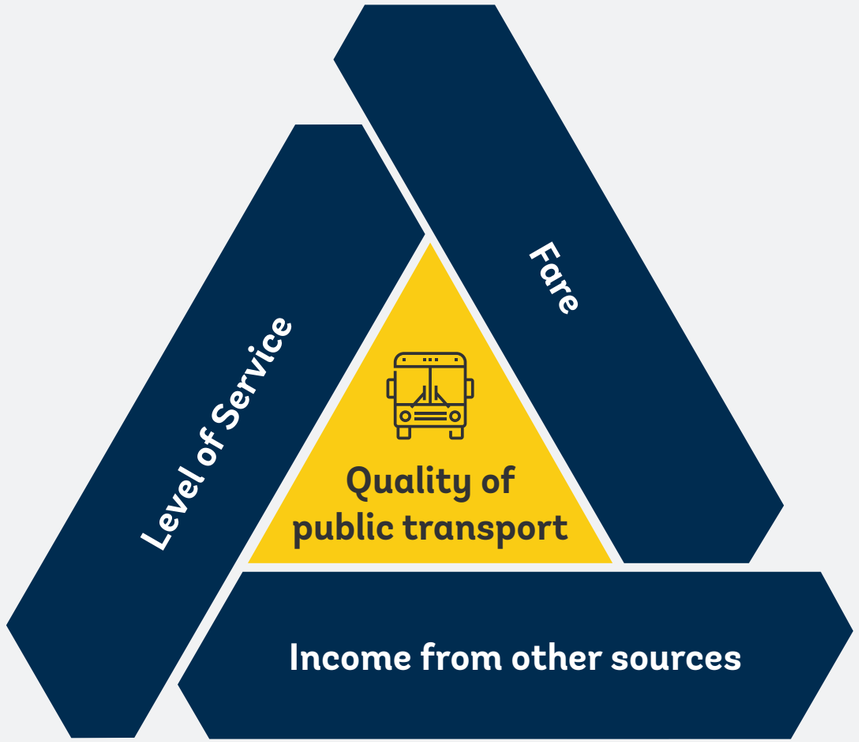


Figure IV-1. Factors impacting the quality of public transport



The basic factors impacting public transport quality include the following:

- In the absence of subsidies (or other sources of income), fares controlled at uneconomic levels will damage the level and quality of service provided.
- There is a direct relation between the level of fares and the commercially sustainable service.
- In the absence of direct subsidy (or other forms of income), the controlled fare structures which do not represent economic costs will distort the level of services, thereby damaging those groups (the poor) that it is primarily intended to assist.
- Allowing unregulated free entry to supplement inadequate supply resulting from a fare-controlled environment may exacerbate the problem in the long run.

MYTH 11

The major advantages of BRT and rail-based rapid transit systems are their dedicated running ways and high-capacity, modern vehicles. Their introduction should be accompanied by the complete elimination of informal services in their respective corridors.

Reality - Partially True in the First Part, and False in the Second

Rapid transit (bus, rail-based or other service) requires significant market volume to make the up-front investments economically justified and financially sustainable over time. Not every corridor or subarea, even within a large city, can justify the necessary investment and ongoing costs of these systems. Even in corridors with the necessary volume, there will be markets for short trips that rapid transit with wide station spacing cannot efficiently and effectively serve. If too many rapid transit stops and stations are added to serve the short trip market, it will cease to be a rapid system.

Due to low passenger volumes, there will also be commuter trips in and across rapid transit corridors that simply cannot make use of a rapid transit system. To justify the need for rapid transit systems, which are designed to serve a high volume of passengers, many homogeneous, low density Sub-Saharan African cities will require other transport services that can feed passengers into the rapid transit system.

These factors make a compelling argument for a comprehensive, integrated multi-modal public transport system as opposed to a single mode focus. "Informal" services, in turn, have a role to play in reforming such systems and making them more efficient and effective.

MYTH 12

The informal sector's issues are primarily regulatory. Informal operators purposefully evade taxes, thus withholding revenue from the city and unfairly competing with formal, tax-paying businesses. This behavior can be "regulated away."

Reality - Partially True

As a here-to-fore totally cash business, informal public transport lends itself to tax evasion and other forms of corruption. The fact that cash receipts are difficult to secure and trace makes it difficult for local authorities to collect income and sales taxes, thus robbing them of needed revenue. This also presents an unfair competitive advantage to more organized, presumably higher quality, and safer public transport entities that comply with financial reporting and other related regulations (e.g., labor, vehicle condition) and thus cost more to operate.

Given the amount of untraceable cash available to "incentivize" corrupt officials not to enforce driver and operating licensing, vehicle registration, inspection, and fare regulations, it is difficult to control who can operate services, how they are operated, the condition of their vehicles, what they charge, and the general behaviour of drivers in traffic.

Because so much income is unreported, it is difficult to assess the value of legally obtained vehicle operating licenses. There should be more prerequisites to renewing licenses so that the number of people plying their trade can be better balanced with demand. The government is often hindered in its ability to make rational decisions about the size of the fleet legally in service that are both responsive to the needs of labor and sustain asset conditions. Under these conditions, putting the industry on a more organized and financially sustainable basis becomes difficult. Ultimately, implementing policy to make public transport more affordable for the poor becomes more challenging as well.

The move to fare collection by a central entity (e.g., local operator unions/associations, banks, government transport authorities) with the aid of information and communications technologies to provide auditable data and more revenue security is already starting to mitigate these issues.

MYTH 13

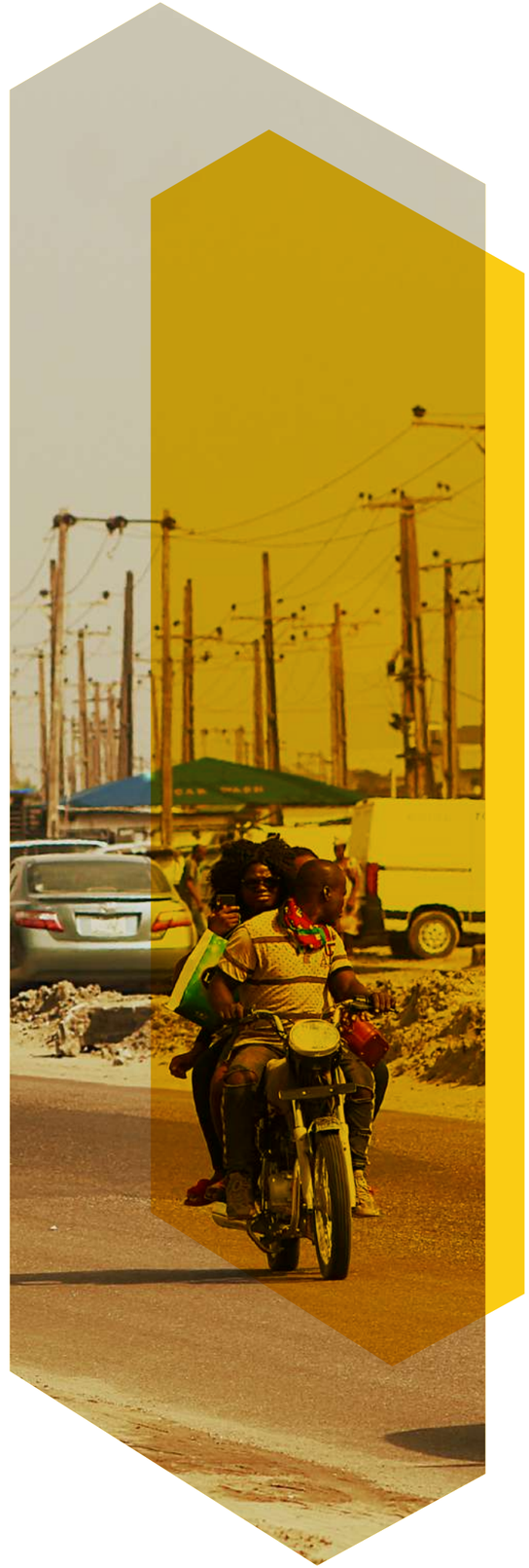
In developing countries, people using public transport do so for lack of any options.

Reality - Not Anymore

During the 1950s, 1960s or even 1990s, people had limited choices to travel and travel modes were well defined—those who could afford to own a private vehicle were private transport users, others would take public transport, and the very poor would walk or bike. People using public transport were called "captive" riders and there was no incentive on the part of public transport providers to improve the quality of services. As the quality of public transport declined because of congestion and financial factors and average income levels rose, people began to expect higher quality public transport. At the same time, more dispersed patterns of demand than those experienced in the traditional monocentric city have made it difficult for public transport to satisfy demand and remain financially viable. Even the people traditionally dependent on public transport as a means of last resort are demanding improved levels of service.

The result has been an exponential growth in private vehicle ownership and use. Rising motorization is a double or triple negative for public transport. The increasing congestion it causes makes public transport slower, less reliable, and more expensive to provide. Rising income and the availability of inexpensive two-wheelers (motorbikes, scooters, etc.) and used cars provide an attractive, affordable alternative to increasingly less attractive public transport. An increase in private vehicle ownership and use reduces demand for public transport, further reducing their operating income and prompting a vicious downward spiraling effect on maintenance, quantity, and quality of service.

Travel on public transport should not viewed as a last resort by people without a choice. The functions, service quality, adaptability, technology, and user friendliness of public transport needs to be viewed in a fresh perspective. The basic city transport function is to move "people" and not "vehicles." This requires improving the quality and serviceability of non-motorized and public transport so that people in all income brackets, not just low-income people, see this as a mode of choice.



MYTH 14

Informal public transport is more than just transport; it represents a cultural phenomenon with considerable political clout.

Reality - True

Like New York's yellow taxis, British red double-decker buses and black cabs, jeepneys in the Philippines, Matatus in Nairobi, Trotros in Accra, Car Rapides in Dakar, Minibus Taxis in Southern Africa are a part of their respective country's culture. They seem to embody the creativity, innovativeness, ingenuity, entrepreneurship, and determination to be independent that have characterized urban residents in developing countries for the past many decades. The minibuses are really an important part of daily life in cities and a beloved (and, at the same time, disliked) part of society. Minibus laborers make a meager wage despite the high stress and long hours. Typically, drivers start in the morning about 5:30 am and continue till 9:00 or 10:00 pm, working 6 days a week in "an industry that is made up of individuals trying to carve [out] an existence in a harsh economic environment."[42]

While battling increased competition and decreased business as more people are driving themselves, minibus drivers must also cover the rising cost of doing business. In addition to paying daily fees to their employers, drivers must buy increasingly expensive fuel and pay fees to the local and central authorities and/or unions that manage terminals. The buses are not held to a high standard of repair and are often overloaded, making them a common point of contention for law enforcement.

Drivers say they must break the rules to earn a living.[43] They regularly flout traffic regulations, break the speeding limit, make risky mergers into other lanes, and pick up passengers outside of designated stops in order to shorten their travel times and increase their revenue for each trip.

The drivers eventually lose out because of increased congestion on the roads, so they make fewer daily round trips and hence generate less revenue. In addition, competition from illegal transit, shared taxis, and even commercial motorcycles (Okadas) in the past decade has made it even more difficult for them to make a decent living. Regardless of its drawbacks, the informal transport provides employment opportunities for those with less education, skills, and income, often among the formerly rural population. Therefore, the issue of rapid growth of the informal mode in urban areas is not merely a transport issue but a social, economic, and political issue that will require policies that address a range of concerns.

Box IV-3. Protests turn to celebrations as Peru's interim president offers resignation

The recent political turmoil in Lima, Peru serves as an example of the difficulty of informal sector reform in the face of the political strength of the mini-bus taxi industry. Facing furious nationwide protests and growing international pressure, interim President Manuel Merino resigned on Sunday, less than a week after he was inaugurated to replace ousted popular president Martín Vizcarra.

Peru has been in turmoil since the scandal-racked Congress removed Vizcarra on November 9, 2020 over unproven claims that he accepted bribes when he was a regional governor. Vizcarra is widely seen as a reformer; he has denied wrongdoing and has said consistently that he will cooperate fully with prosecutors. On Saturday, a judge ordered him not to leave the country...

Vizcarra's ouster has been widely interpreted as an attempt by a corrupt political class to stop his policy changes that threatened their grip on power — and their ability to monetize that power through kickbacks, influence-peddling and populist legislation that favored shadowy economic interests including illegal mining and the informal taxis and minibuses that help make Peru's roads so lethal."

Source: Simeon Tegel, The Washington Post, November 15, 2020

42 Woolf, S.E., Joubert, J.W. (2013). A people-centered view on paratransit in South Africa. Cities, 35, 284-293

43 https://globalpressjournal.com/africa/zambia/public-transit-drivers-in-zambia-say-competition-bribery-demands-force-them-to-violate-road-rules/ Global Press Journal (November 22, 2014)

Box IV-4. Philippines strike: Filipinos rally around iconic jeepney drivers (16 October 2017)

The jeepney was once called the undisputed king of the road and served as a symbol of Filipino creativity, innovativeness, and ingenuity.[44] It has come a long way from being the World War II Willys jeep surplus that provided an early form of postwar topless, shared-taxi transportation, soon enough acquiring a roof and stretching the back to accommodate more passengers, taking on colors and accessories. Even as the supply of Willy jeeps and alternative mother-vehicles became exhausted, it continued to spawn an industry and commerce of a local build-from-scratch jeepney production, providing the populace with an affordable means of transportation and meeting all imaginable hauling needs. It was, indeed, the workhorse of Philippine transportation, and deservedly for decades, it was the "Undisputed King of the Road."

A public transport strike has sparked fierce debate in the Philippines, as Filipinos rally around the iconic mini-buses, called jeepneys. Jeepneys are a popular form of public transport throughout the Philippines.

In 2017, Philippine authorities launched a controversial program to modernize the public transport system, including buses, utility vans and jeepneys. Transport groups argued that it was unfair to jeepney drivers and launched various strikes.[45]

Source: Godofredo U. Stuart, Jr., Stuartxchange

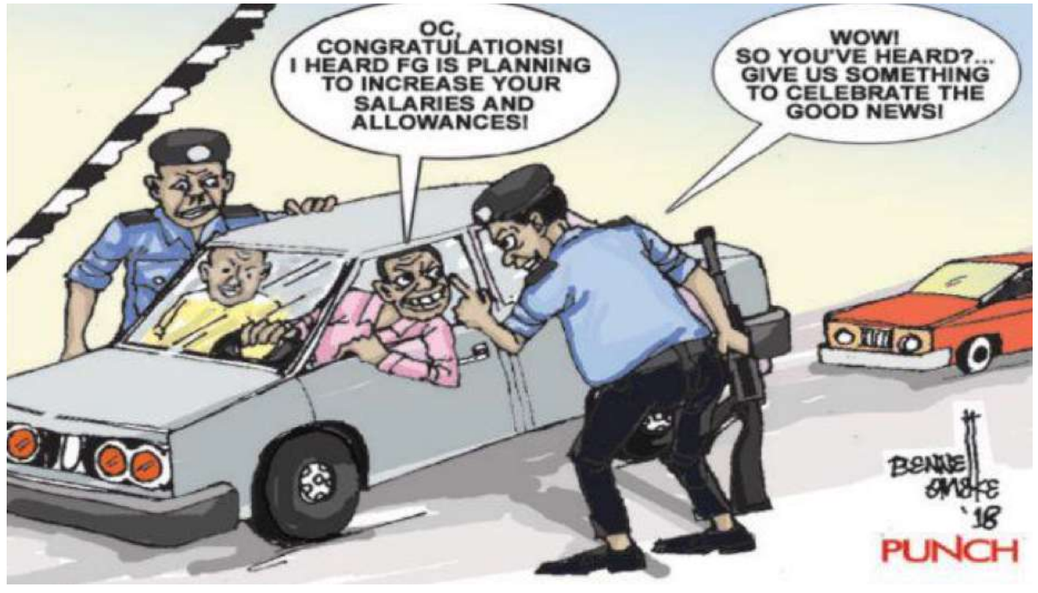
Photo IV-11.
The jeepney, once called the undisputed king of roads in the Philippines.

Even with the congestion, pollution, and poor safety record associated with these vehicles, there is nostalgia and longing associated with this informal mode of transport. Patrick Gathara, a Kenyan journalist, cartoonist, blogger, and author, writes of matatus as "the unholy offspring of local attempts at entrepreneurship around colonial design, and post-colonial state failure."[46] Klopp and Mitullah (2015)[47] describe Nairobi's transport system as reflecting colonial societal segregation when "European settlers and officials 'planned' the city of Nairobi around personalized transport which facilitated physical segregation in terms of mobility." By 1928, just over two decades after it became the official capital of Kenya, the city had 5,000 cars, "making it the city with the highest per capita private automobile ownership in the world." Europeans and Asians were given special driving privileges to the detriment of native Africans. And even when the Nairobi Town Bus was inaugurated in the next decade, it was largely for the benefit of the British colonial authorities and other privileged groups.

From these humble beginnings, the Matatu industry has grown into a behemoth, generating revenues of $2 billion annually and employing over 350,000 Kenyans, according to some estimates. It is "the only major business in Kenya that has continued to be almost entirely locally owned and controlled."[48] In Lagos, there are over 100,000 minibuses and 200,000 commercial motorcycles, providing direct employment to over 500,000 people. Assuming there is one public transport worker per household (with an average household size of five people), well over two million people receive their sustenance from the sector (or 15 percent of the total population). This large numerical strength gives them enormous political power and allows them to cripple the local economy by calling a strike in response to any perceived government interference with their common market interest.

In turn, regulators and enforcement authorities have a significant stake in maintaining the status quo because of the opportunities for individual financial gain. Individuals setting and enforcing regulatory legislation are often owners of informal vehicles, giving rise to conflicts of interest. Government officials who own these minibuses often justify their actions as a way of making up for their extremely low salaries.[49] The sector has also generated significant financial incentives for police who, according to some estimates, take nearly 10 percent of all revenues.[50] It has also become a lucrative source of income for organized crime syndicates running extortion and protection rackets.

Figure IV-2. Satirical portrayal of financial incentives given to traffic police featured in Freetown Press, 2018.



44 http://www.stuartxchange.com/Jeepney.html

45 https://www.bbc.com/news/world-asia-41632035

46 https://www.bloomberg.com/news/articles/2018-12-26/matatus-elude-center-city-ban-in-nairobi-kenya-again

47 Jacqueline Klopp, Winnie Mitullah. Politics, policy and paratransit: A view from Nairobi. (2015) Routledge

48 Kenda Mutongi, Matatu: A history of popular transportation in Nairobi, The University of Chicago Press, June 2017

49 Discussions with the author

50 Informal discussions with the authors.

Box IV-5. Once Again, a Ban on Matatus in the Nairobi City Center has Failed [51]

In December 2018, Nairobi tried to ban matatus from the city center. As the privately-owned buses are many Kenyans' only travel option, the ban lasted only a day.

The city's dependence on them was dramatically demonstrated at the beginning of December when the county Governor, Mike Sonko, tried to ban them from Nairobi's central business district (CBD). What followed was days of commuter chaos as thousands were forced to trek to work. The public outcry that followed led to the directive being binned after only one day.

Source: Patrick Gathara, Bloomberg City Lab, December 26, 2018

The Politics Behind Phasing Out of the Minibuses in Nairobi

Strong policy direction was demonstrated in December 2010 when the Government of Kenya imposed a ban on importation of 14-seater vehicles.[52] The goal was to reduce the number of 14-seater matatus and encourage operators in the industry to invest in higher capacity vehicles. The following year was characterized by debate among different stakeholders, some opposing the phaseout while others supported the government directive. After two years of implementation, the government rescinded the directive.

The directive to progressively phase out of the 14-seater vehicle and other low-capacity vehicles was established by the Integrated National Transport Policy (2010). There was a general perception among government officials and high-capacity bus owners that using higher capacity vehicles would reduce congestion by reducing the number of vehicles on the road. In addition, fourteen-seater matatus were perceived to be poorly managed because owners of these vehicles deferred their operational management responsibilities to the crew who competed on the streets. The drivers are mostly employed on daily/temporary basis without any training, have little understanding of or incentive to follow regulations, and are driven by maximizing their own profit. Under the circumstances, small vehicles are seen to be the main cause of worsening congestion, increases in road accidents, and reduced public security.

As a result, it was generally felt that:

- Standard buses can provide safety and comfort to women and people with disabilities;
- Standard buses are run by a formal organization; therefore, the employees would be more responsive to customers (commuters) rather than commercial objectives;
- Standard vehicles would reduce congestion on the city roads caused by mini/midibuses as the number of erratically driven vehicles on the road would decrease substantially;
- Organizations can provide information systems for users and an integrated fare system.

Those that rejected the directive were the matatu owners, the Drivers Association, and other people directly or indirectly working in the sector. They believed that:

- There was not much consideration on how the implementation of phasing out minibuses directly would affect the livelihoods of people working directly or indirectly in the sector.
- The perception that high rates of road crashes, crime, violence, and congestion were attributed mainly to small vehicles was inaccurate.

51 https://www.bloomberg.com/news/articles/2018-12-26/matatus-elude-center-city-ban-in-nairobi-kenya-again

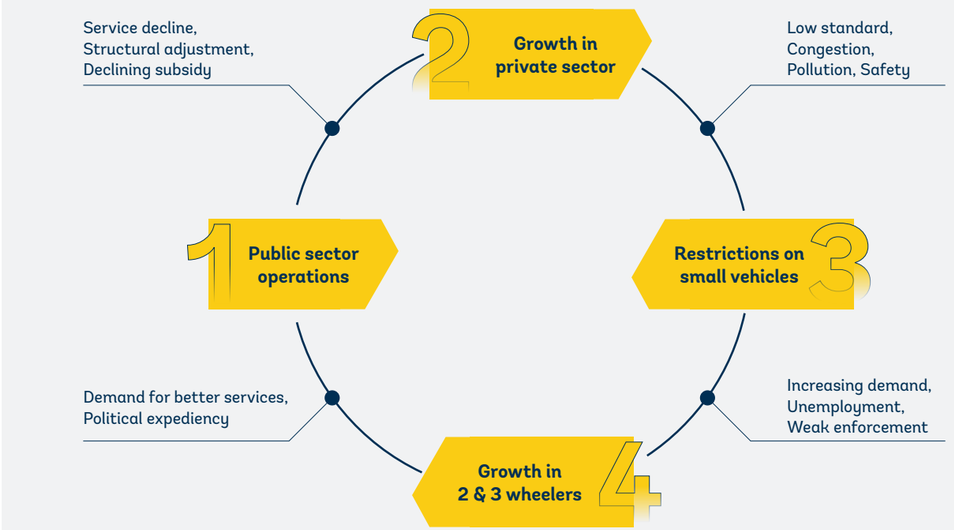
52 This section is drawn from: Ommeh Marilyn, McCormick Dorothy, Mitullah Winnie, Orero Rispe and Chitere Preston, The Politics Behind the Phasing Out of the 14-seater Matatu in Kenya, 13th World Conference on Transport Research, July 2013. Available at http://www.wctrs-society.com/wp-content/uploads/abstracts/rio/selected/2864.pdf

Empirical studies reveal a weak relation between vehicle size and compliance with regulation.[53] Studies of optimal vehicle size based on demand, supply, and level of service support a greater case for using small size vehicles.[54] Left alone to the private sector, the choice of vehicle size was determined by technical and economic considerations, resulting in a mix of public transport vehicle sizes.[55]

This decline in state support of public transport in the 1980s in most Sub-Saharan African cities was motivated by Economic Structural Adjustment Programs and led to a vacuum in transport service to be filled initially by minibus operators and later by three and two wheelers. Most recently, demands have returned for operation of large buses. The political dimension of this evolution is captured very well by Ommeh Marilyn, et al.[56] in their analysis of the phase-out of matatus in Nairobi:

> *"Although the directive (to phase out matatus) was initially technically motivated (i.e., it aimed at reducing congestion, encourage higher capacity vehicles and in the long-term lead the implementation of BRT) vested political interests seem to have affected the implementation of the directive. There was perhaps the urge by officials in the Ministry of Transport to be seen to be doing something in the road transport sector; consequently, the passing of this directive without much consultation and technical analysis of unintended outcomes. The result was political expediency, where government officials and members of parliament would initially support the directive so as to be seen to be implementing reforms in the transport sector that would be of benefit to the public transport user. When complaints from operators began to emerge on the impact of the directive on the industry, the government officials and members of parliament abandoned their earlier stand and supported the industry operators."*

Figure IV-3. Cycle of passenger transport in Sub-Saharan African cities since the 1980s



53 McCormick, D., W. Mitullah, P. Chitere, R. Orero and M. Ommeh (2012) Institutions and Business Strategies of Matatu Operators in Nairobi: A Case Study ACET Project 14 Paratransit operations and regulation in Nairobi, Working paper 14-03, University of Nairobi

54 Jansson J, (1980) A simple bus line model for optimization of service frequency and bus size, Journal of Transport Economics and Policy 14 (1):53-80

55 Vijayakumar S. (1986) Optimal vehicle size for road-based urban public transport in developing countries. Transport Reviews: A Transnational Transdisciplinary Journal, 6(2):193-212

56 Ommeh Marilyn, McCormick Dorothy, Mitullah Winnie, Orero Rispe and Chitere Preston, The Politics Behind the Phasing Out of the 14-seater Matatu in Kenya, 13th World Conference on Transport Research, July 2013. Available at http://www.wctrs-society.com/wp-ontent/uploads/abstracts/rio/selected/2864.pdf

MYTH 15

One large bus can replace many of the smaller vehicles (e.g., sedans, vans, etc.) utilized by the informal sector; thus, their procurement should be encouraged if not financially supported by government to reduce congestion.

Reality - Not Necessarily

The ability to replace multiple minibuses with a much smaller number of large buses assumes that a) there is enough demand to justify use of large buses at a suitable frequency on a fixed route operating with an attractive fixed schedule; b) roads are wide and strong enough, especially in the suburbs and outlying areas, to accommodate them; c) the nature of demand, passenger volumes, and profiles justify a standardized supply in response to growing and changing demand; and d) current passenger demand and revenue would be maintained even after service is reduced as a consequence of replacing frequent, sensitive-to-demand and direct origin-to-destination minibuses with a small number of larger buses operating on fixed routes and schedules.

One of the early policy papers by the World Bank (1986)[57] provided evidence that beyond a certain point, costs increase commensurately with the growth of the companies providing the service. There are few, if any economies of scale: "Small, competitive, and highly variegated transport enterprises usually find it efficient to operate small vehicles rather than large costly buses characteristically chosen by large organizations."

57 World Bank (1986) Urban Transport. A World Bank Policy Study, Washington D.C.

Large capacity buses are justified in environments where labor costs are high (in developed cities labor costs are as high as two-thirds of bus operating costs) and/or the demand is heavy. Cities in Sub-Saharan Africa present contrasting evidence for labor costs: population density is low as cities are spreading outward at a faster rate than the growth in population. The labor costs of privately operated kombi services are much lower than for large buses, which are mostly provided by the state. Drivers of informal buses who work long hours do not enjoy the same supporting benefits as those offered by formal organizations.

In addition, small buses are more flexible and responsive to user needs, often providing door-to-door service. They can also provide more frequent service than large buses, reducing passenger waiting time and enhancing their attractiveness to customers. The current practice of buses waiting at the terminal until the vehicle is full also encourages use of smaller vehicles because they are easier to fill. The maneuverability of smaller buses along congested roads and their ability to navigate narrow streets gives them an additional advantage.

The attractiveness of large-capacity buses to policymakers is not new. Even in the 1970s and 1980s, cities in East Asia were struggling with the challenge of a growing number of minibuses and the government recommended a ban or restrictions on their operation (see Box IV-6). The research by Walters (1979) challenges the conventional wisdom that large buses operated by large organizations provide the most frequent service for optimal urban road passenger transport. Their theory is that small buses are often the most appropriate option, giving the best frequencies, speed, and low passenger waiting times. Not much has changed in recent decades, however, except that cities in East Asia have graduated to the middle-or high-income category and the mode share has changed to personalized or mass rapid transit modes.

According to Walters (1982),[58] "…. the large size has been brought about by subsidy, regulation, and controls. The most appropriate test is to examine the history of countries or cities which have had no such subsidy and regulation, or cities which were once subsidized and nationalized and subsequently eliminated such regulation and turned over the bus business to private enterprise." The cities confirming this hypothesis range from Buenos Aires to Honduras, Manila, Abidjan, Accra, Nairobi, Cairo, Calcutta, Colombo, Hong Kong, Kuala Lumpur, etc. In a competitive, unsubsidized market, the size of the bus reflects consumer preferences and operator ability to maintain operations financially. Therefore, it is important to consider operator preferences in a competitive market.

Box IV-6. Growth of minibuses in the 70s

Studies of bus transport in cities as far back as the 1970s suggest that the introduction of minibuses produced an extraordinarily large benefit for both operators and passengers. In Manila, it was shown that while bus companies had overall revenue deficits at the regulated fare, the jeepney owners were making substantial profits. It was observed that there are substantial diseconomies generated by the ownership and lack of incentive structure in large bus companies.

In Hong Kong, minibuses known as public light buses (PLB) are owned by small firms (over 75 percent were one-vehicle firms). The PLBs were initially developed illegally and were legalized in 1969. They were not controlled by authorities with respect to fare or to route, except for certain routes where they were prohibited. The frequencies of PLBs were, on average, about 8 times those of bus frequencies and with 15 percent higher speeds. This allowed them to make huge profits.

In Chiengmai (a city of about 100,000 in northern Thailand), the paper talks about free competition between stage buses and minibuses. The typical minibus is a 1,000 cc or 1,500 cc utility van offering about 12-14 seats; the typical bus has 30-seats. The minibus does not operate on fixed routes but responds to passenger demands, while buses adopt fixed routes. The fare for minibuses is twice that of stage (regular") buses but they provide almost 90 percent of passenger transport trips. The passengers prefer the convenience and time-savings of minibuses even at twice the fare. The minibuses are moderately profitable, while stage buses are not able to cover operating costs and are in decline.

A similar experience was observed in Kuala Lumpur where minibuses were introduced on a limited basis. The fare for minibuses was higher than regular buses but they were able to make a profit as compared to regular buses.

In Bangkok, stage bus operations were transferred from multiple private firms to a single public authority - Bangkok Metropolitan Transit Authority—in 1976. Fare was controlled by the government. There were many minibuses operating *de facto* but not *de jure* in the metropolitan area as they were operating illegally in the absence of control by government authorities. They charged the same fare as large buses but were able to make a profit, while BMTA suffered large financial deficits. Over time, the government was forced to legalize and control their operations.

Adapted from: A.A. Walters, Costs and Scale of Bus Services, Staff Working Paper No. 325, April 1979, The World Bank, Washington D.C.

58 A.A. Walters (1982), Externalities in Urban Buses, Journal of Urban Economics, 11, 60-72

MYTH 16

The entire labor force of the informal public transport sector currently working in a corridor or subarea can be re-assigned to the conventional public transport network that replaces it without having to relocate anyone.

Reality

The reorganization of all informal public transport services in each corridor or sub-area into a conventional, fixed-schedule, fixed-route bus system will likely include fewer, higher-capacity vehicles operating at a lower service frequency. This will necessarily employ fewer people than the informal sector system it replaces. Rising labor costs and a scarcity of potential employees willing to work in marginal, low-paying jobs provide justification to use fewer, larger vehicles and thus employ fewer people to provide essentially the same capacity (but not necessarily level of service).

The labor impact assessment report of the Nairobi BRT[59] revealed that Matatu workers are in a highly precarious area of employment. Very few have formal contracts. Most are wholly self-employed, or on hourly or daily informal "contracts." Only a tiny percentage of respondents (3.9 percent) have any form of written agreement or contract covering their employment. Most Matatu workers work exceptionally long hours. A 1997 study of working conditions in the matatu industry (Khayesi 1997)[60] found that nearly half of drivers and conductors worked between thirteen and fifteen hours per day. Furthermore, most Matatu workers have low incomes. There are considerable fluctuations in day-to-day and hour-to-hour gross income while the availability of customers on a wide variety of necessary trips is often unpredictable. Before vehicle crews can start to earn money, most must meet high daily financial "targets" set by vehicle owners – in effect a rental fee. This leads to long working hours, high accident rates, and poor health among the crews. They are also subject to arbitrary fines and extortion from police and county inspectors.

While formalization of the informal sector would have an adverse impact on the total number of employed, it is generally expected that the conditions of employment will likely improve for those who can continue to find work in the industry. It is widely accepted that the inclusion of all stakeholders in formulating the reform program from its early planning stages can help in minimizing any negative impact of reform implementation. In addition, the impact on employment can be mitigated somewhat by increasing the amount of subsidiary, so-called "feeder" services that penetrate neighborhoods as permitted by local land use and street system rules.

Employment conditions must be addressed in the planning process for reforming any formal public transport system in a corridor, especially for rail or bus rapid transit of any kind. There are several ways to accommodate the transition to a new system. One way is to "buy out" all current informal vehicle and license holders in the corridor, train current laborers to work in the new system as drivers, mechanics, station employees etc., and guarantee jobs elsewhere in the city for laborers who cannot be easily re-assigned.

A variation of this approach is to provide licenses for current owners to operate in another under-served or newly urbanizing part of their respective conurbation. Under this approach, current employees could be given preference for obtaining new operating licenses in other locations as well as financing to purchase necessary vehicles.

This approach has worked successfully in some places such as Latin America, but constant and close communications with political leaders, industry entrepreneurs, and labor are critical to reaching a successful outcome. There must also be a recognition that such an approach requires potentially significant up-front and ongoing costs to the governments undertaking the reform.

Another successful approach was followed in the planning and implementation of Lagos BRT Lite to minimize impact on employment. This approach would effectively: a) ensure that the current informal operators/drivers were provided the basic training to compete for exclusive route contracts; b) provide employment to those in the discontinued informal services through additional jobs created in the formal sector as inspectors, data collection supervisors, ticket marshals, cleaners, etc.; c) phase-in the implementation program to allow any residual informal workers to find employment in providing services along other corridors in an expanding city; and d) continue to have some informal services along the route to minimize job losses.

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59 Nairobi Bus Rapid Transit, Labor Impact Assessment Research Report, January 2019, Global Labor Institute, Geneva

60 Khayesi, M. (1997). Matatu Workers in Nairobi, Thika and Ruiru Towns, Kenya: Analysis of their Socio-economic characteristics, Career Patterns and Conditions of Work. Final Research Report Submitted to the Institute for Development Studies, University of Nairobi

MYTH 17

Replacing informal transport with conventional public transport can be accomplished without government financial support of any kind.

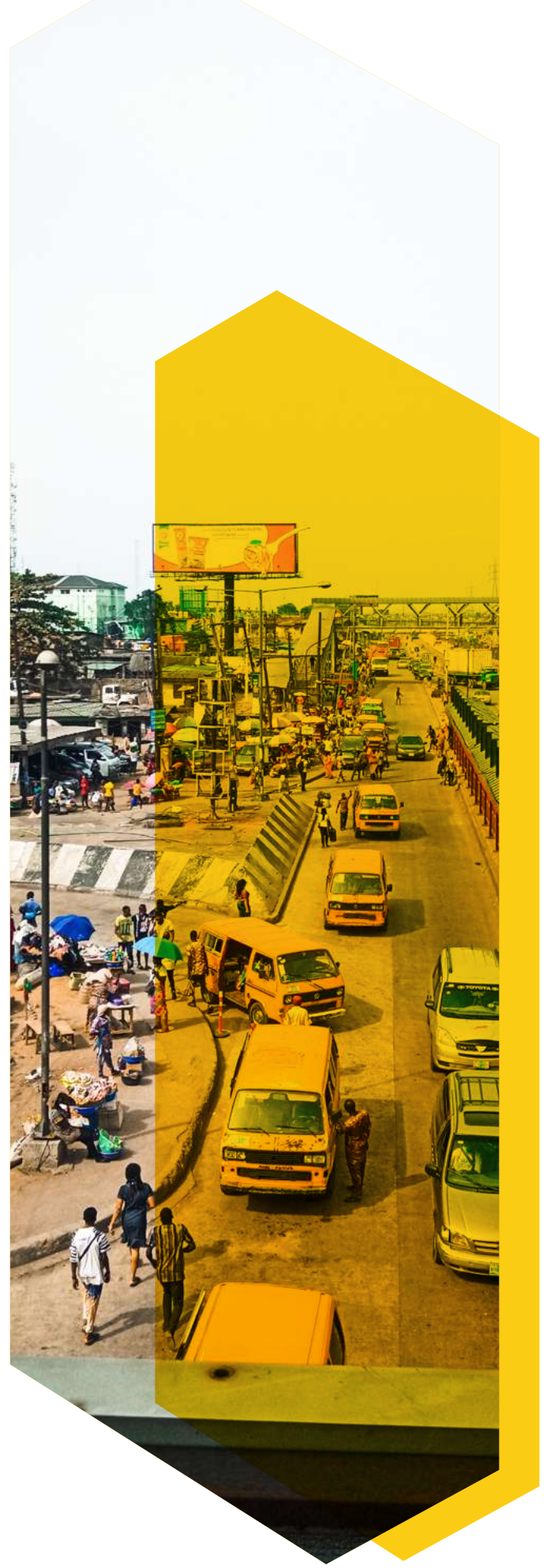
Reality

In several places including South Africa, public transport reform was promoted, in part, under the premise that conventional public transport can be almost as self-sustaining from fare revenue as the informal services it displaced. While this can be true for services sticking to high-volume corridors with significant market turnover throughout the day and week (e.g., Lagos BRT Lite), this is not always the case, particularly where the market area for the conventional services is relatively low density and low income. The resulting deficits have caused undue financial problems, particularly in Sub-Saharan Africa and cities like Cape Town and Accra.

For example, local bus systems that complement rapid transit in low density suburban markets generally have significant ridership only in the morning and evening peak periods with very few passengers the rest of the day. If labor law requirements pertaining to minimum hourly pay, benefits, and work hours apply, it is exceedingly difficult to cover all costs out of operating revenue, including the costs of rolling stock, other equipment, and facilities. This is especially the case where fares are constrained for "affordability" below the market price for all users.

There are several ways that an improved public transport system can address financial issues within an affordability envelope for government and users. However, the approaches must be tailored to the respective financial, government, public transport, and socio-economic environment. The options include government-guaranteed bank loans to private entrepreneurs for facilities, sales tax abatements for fuel, supplies, and rolling stock, the direct provision of needed capital items under leases to operators, and other arrangements.

Operating and maintenance subsidies are much harder to control and often create perverse incentives resulting in low productivity and loss of efficiency. In this regard, the consensus is that fare subsidies provided directly to low-income riders are preferable to subsidies for service providers.



What to do?

Frequently tried approaches used in most countries to address the transport issues and challenges associated with the informal public transport sector include the following:

- Encouraging formal public transport in various ways:
  - » Initiating *public-sector financed and directly operated* public transport companies – creating "state-owned enterprises" and "banning" informal transport services operated by individuals or private companies.
  - » Making large investments in mass transit of all kinds.
- Mandating low public transport fares to make it affordable for the poor.

If providing improved mobility and access for low-income urban residents are the objectives, the pay-off from these actions has been mostly marginal. It is increasingly understood in all countries that urban transport policy must encourage public and non-motorized transport for all urban residents irrespective of income to minimize use of personalized modes. Public policy should not only be to "shift" people from private vehicles to non-motorized and public transport, but to keep people already using non-motorized and public transport from shifting to increasingly affordable two and four-wheeled private vehicles.

Consistent with this direction, there are three basic approaches to addressing the issues:

1. Ban the informal sector outright and attempt to replace it with something else (Displace);
2. Accept it as is because the situation is irredeemable (Embrace);
3. Improve and adapt it to fit into a broader, more modern public transport context (Adapt).

Attempts to ban informal transport in the past have not been successful. As described earlier, they are more than just transport. They represent a cultural way of life and embody the creativity, innovativeness, ingenuity, and determination that have characterized urban residents in developing countries for the past many decades. Informal transport is the lifeline for most people in cities without a private vehicle; banning it without providing suitable options will not work. Attempts to freeze new licenses for kombis combines the worst of all situations and has resulted in exponential growth in illegal taxis and kombis in many cities.

The **policy to accept** the informal transport system in its current form and structure is also fraught with problems. In an age of incredible innovation in automotive fuel efficiency, aerodynamics, safety, and creature comforts, the jeepney in the Philippines has remained an immutable, uncomfortable, gas-guzzling and polluting anachronism, severely lacking in safety features and unadaptable to universal safety and seat-belt regulations.[61]

Minibuses in Dakar (referred to as *car rapides*) were originally cargo carrying vans, imported second-hand from Europe and converted into passenger vehicles in local workshops in Dakar. This system, also found in some other Sub-Saharan African countries, was reported to be the direct consequence of the import tax regime which made it significantly more expensive to import passenger vehicles than vans or trucks. These buses are over 20 years old, are devoid of passenger comfort, and give a new meaning to the phrase "packed like sardines." They present the most challenges in terms of security and safety, environmental hazards, and increasing congestion.

Let us look at the third option of **adapting the informal sector** to fit into the broader public transport context: Why consider informal transporters as a menace when their ingenuity could possibly serve as a homegrown solution to the urban transport crisis?

The challenge is how to transform the large self-regulating but low-quality minibus sector into an efficient and modern industry offering safe, clean, affordable, and attractive services that meet people's needs.

The achievements to date of the minibus sector must not be overlooked. When it was needed, they built a system that was stable and appreciated by the people. New routes can emerge in an environment that is quite free from violent intimidation. However, the sector is still operated in the interest of the operators and the unions and it is evident that after almost 30 years its internal mechanisms can neither develop and modernize nor integrate with the broader requirements of the city. Current operations suffer from a number of quality problems including: (i) operation of a "fill and go" system which can result in long delays for users in the off-peak hours, and uncertainty for passengers waiting along the route; (ii) drivers stopping traffic anywhere they are hailed or waiting for customers at busy stops causing both accidents and congestion; iii) large numbers of vehicles parked at terminals in the off-peak hours leading to congestion and wasted space in bus areas; iv) long, hard hours for drivers; and v) lack of incentives for vehicle owners to improve their vehicles or to train their drivers properly and treat them with dignity.

Furthermore, true to their roots as transporters of workers from their homes on the outskirts of the city to their scattered places of employment in the central city, nearly all informal transport journeys terminate in a few major employment areas which are turned into huge bus parks. Most often, intersections are a major cause of congestion in the city due to informal transport. A regulatory adjustment is required to improve the sector.

61 https://www.pinterest.com/pin/the-philippine-jeepney-the-undisputed-king-of-the-road-by-godofredo-u-stuart--197384396145745578/oup Accessed on November 17, 20

Regulating the industry

Existing services suffer from numerous problems including poor planning, low vehicle quality, poor operating conditions and driving, and encroachment by illegal operators. Change is required in two main forms:[62]

- Improvements in regulation, organization, and planning of urban passenger transport services to create better business conditions and boost service quality.
- Improvements in operating conditions and traffic management to facilitate high quality service, efficient use of expensive assets, and visible benefits to the operators for participating in the new regulatory framework.

One of the mechanisms to improve the quality of paratransit services is to introduce controlled competition for the right to operate specified services over a defined core network where the overall benefits to entrepreneurs, labor, and passengers more than offsets the regulatory costs. Contracts can specify vehicle standards and provide investment incentives through their extension. Controlled competition requires the operating industry to restructure into some form of legal entity to be party to the contract agreements, and for those entities to enter competition between each other.

There are several key components in establishing a process to migrate from current informal self-regulated activities to an environment that requires the relevant route association (as the transport operator) to enter a contractual agreement with the appropriate regulatory authority to deliver specified services for a specified period to specified standards of delivery at specified times and days.

The most notable example of urban transport business restructuring through fleet financing was the World Bank-supported program for renovating the *Cars Rapides* bus service in Dakar, Senegal.[63] For operators to access financing for new vehicles, they had to form into economic interest groups; they were then allocated defined routes within the urban network on a preferential basis. Investment incentives were also provided in the form of generous scrappage allowances for withdrawn vehicles, and repayment holidays on the primary financing agreement to settle deposit financing issues. The key to the success of the program, though, was the coincidental introduction of a new ticketing system. This had the effect of transferring the true earning potential of each route from the driver to the owner who could thereby increase the owner's net revenue to the level necessary to meet the required financing cost.

62 Brendan Finn, Abeiku Arthur and Samson Gyamera, New Regulatory Framework for Urban Passenger Transport in Ghanaian Cities, 11th Conference on competition and ownership in land passenger transport (September 2009)

63 Ajay Kumar and Christian Diou, The Dakar Bus Renewal Scheme: before and after, SSATP Discussion paper No 11 (May 2010)

Financing

Providing access to favorable investment financing for sector entrepreneurs is critical to bring about restructuring. The sector is generally characterized by a lack of capital with its assets generally being of low value by virtue of their age and condition. This has the advantage of providing a low barrier to entry into the industry but is not conducive to good quality of service or to the raising of general standards over time. Typically, current minibuses are over ten-years-old and bought second-hand at a cost of less than USD 5,000. They are mainly financed by individual owners through family savings.

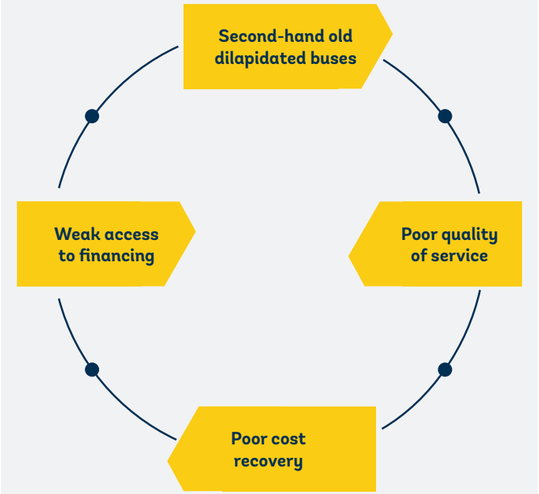
Transitioning to better quality vehicles requires access to financing which is virtually impossible for an individual-owner operator who lacks any security or business experience and operates in a competitive high-risk environment. Access to financing is further complicated by the following factors:

- The presence of high applicable interest rates, both in the general economy and with respect to the risk premium for the sector.
- The short term of available finance because of the perceived lack of durability of the vehicle and/or the low likelihood of being well-maintained.
- Requirements of financiers for a significant deposit for their security which must be financed simultaneously with the base contract and often at a higher rate.
- Requirements of financiers for comprehensive insurance for their own security during the tenure of the financing, with premiums based on sector experience.
- Poor vehicle productivity due to low commercial speeds and/or a lack of all-day demand.
- Tariffs that are suppressed below the level required to cover all direct operating expenditures and amortization plans and require a reasonable return on capital.
- Poor contractual arrangements with the driver for service delivery and parasitic losses (including extortion) which impede the investor's ability to receive all the net revenue from the operation.
- Low availability of spare parts and technical backup, resulting in loss of earnings during extended periods of repair.

To break out of this vicious cycle where operators are unable to access financing to modernize their declining fleet, it is critical that:

- The life cycle of the vehicle is long enough to ensure a good number of years of cash-generating operation once its financing has been repaid;
- The maintenance of the vehicle is good enough to ensure high levels of availability and reliability during that life cycle at acceptable cost;
- The vehicle is operated under security of a contract that makes it viable to plan for an extended life cycle with consistent earnings;
- The vehicle is operated within a revenue collection system that has low costs and provides a high level of fare revenue security; and
- There is a mechanism for pooling costs and risks over a group of vehicles to be able to respond to inevitable adversity.

Figure V-1. Vicious cycle of operators unable to access financing for modernizing their fleet



Reforming the (semi) informal minibus system in the Philippines[64]

In the Philippines, an ambitious national reform program known as the "Public Utility Vehicle Modernization Program (PUVMP)" is currently underway. The objective of the program is to:

- Modernize the current jeepney[65] fleet;
- Reform and consolidate the industry structure;
- Move towards low (even zero) emission jeepneys;
- Improve welfare of commuters and encourage modal shift; and
- Improve the standard of living and health of drivers, conductors and their families.

The jeepney sector in the country is highly fragmented and characterized by many small-scale operators. Almost 80 percent of operators in Manila own just a single vehicle, with less than one percent of operators owning ten or more vehicles, leading to an average operator-to-vehicle ratio of just 1.3. Estimates suggest there are around 180,000 jeepneys operating in the Philippines, plying routes in urban and rural areas across the country. In Metro Manila alone, it is estimated that there are 55,000 franchised jeepneys operating on more than 700 routes. Illegal operators known as "colorum" have proliferated because of the moratorium placed on the issue of new franchises back in 2003. The prevalence of colorum suggests that the actual number of vehicles is likely to be much higher.

The existing system of one operator-one vehicle franchise is inefficient. Drivers work long hours (an average of 20 hours per day) and earn a meager living. The current system leads to on-the-street competition, poor safety standards, and serious congestion.

PUVMP will see the prohibition of public transport vehicles over fifteen-years-old from public service and will require:

- Utilizing good condition vehicles that conform to the new minimum safety and emissions standards and are equipped with in-vehicle technology requirements to be issued with route franchises;
- Planning and rationalizing of public transport routes;
- Transforming route franchise issuing procedures;
- Promoting industry consolidation and professionalization to enhance service levels; and
- Transforming franchises vehicle-based to route-based entities, thereby bringing about a fundamental change in the way franchises are issued.

Earlier, franchises were issued to operators with a Certificate of Public Convenience (CPC) for a single vehicle or several vehicles to operate on a route. Under the new franchising guidelines, the licensing authority will publish a call for applications to operate a route. The number of vehicles required, and service standards will be specified in the call for applications. New franchises will be issued only to a corporation or an operator cooperative. This represents a major shift in the approach to franchising, enabling the relevant authority to issue a franchise on a route-by-route basis rather than the present fragmented, individual operator-plus-vehicle basis.

Evaluation of the program over the past year reveals: a) increased commercial performance for operators; b) higher farebox revenues and formalized operations with shift-patterns; c) improved fleet management and vehicle productivity through collective maintenance and procurement of parts, etc.; and d) improved benefits to drivers and conductors who now receive formalized salaries including reduced working hours due to shift-based operation.

64 Transforming Public Transport in the Philippines (2016), Department of Transportation, Philippines, GIZ. Available at: **www.transport-namas.org/**

65 Jeepneys are customized, often very old, ex-military jeeps that have been converted to minibuses, with a seating capacity of 12-20 people on average

Consultation and Political Buy-In

Irrespective of which approach to reform is taken, there will be winners and losers. Without a proper consultation process, potential winners will not be able to discern whether they will be better off, and potential losers will fear the worst. Because of the political power of the large numbers of entrepreneurs and workers in the sector, increased opposition will be impossible to overcome. This is particularly the case where many of the license holders/vehicle owners are themselves politicians or government officials with authority over reform proposals.

Early development and implementation of a formal, multimedia communications strategy addressing the spectrum of stakeholders and their concerns are fundamental to the success of a reform program. The best communications strategies are built on the strengths of the situation on the ground and develop a widespread sense of project ownership while managing resistance to change. Proper management of diverse stakeholders, communications, and public involvement will increase the chances of a reform's success because it results in improved understanding of issues on the part of proponents and increased buy-in and appreciation among other stakeholders.

The key principles of stakeholder management involve: (a) understanding the motives and interests of the multiple organizations and people with some stake in successful implementation; (b) building and maintaining the active support and commitment of stakeholders to adapt the project to their needs and facilitate delivery of the project; and (c) ongoing, regular engagement with stakeholders to inform, negotiate, receive feedback, and adapt the project accordingly.

There is no single reform approach that will work in every situation. Legal and institutional frameworks vary from place to place based on the political and private sector financial situation. The necessary consultation process thus requires two-way communications using a variety of modalities *from the very beginning of the improvement process.*

Without such a consultation process in place, the responsible officials will not be able to craft an improvement agenda likely to gain the most support and the least opposition from a broad array of stakeholders including entrepreneurs, labor, and the public.

PHASED PUBLIC TRANSPORT REFORM PROGRAM

STAGE 1

Establish urban transport policy, and supporting institutional, legislative, and regulatory framework

- Clarify institutional responsibilities between stakeholders.
- Set up a regulatory body.
- Establish operational systems at terminals/ranks for registered operators to operate.
- Review duty on import of buses, informal transport, and spare parts.

STAGE 2

Develop route rationalization

a) **Begin registration of all current regular passenger transport routes operated by public transport systems**
   - Legislate formalization of the minibus industry.
   - Set up driver and marshals training.

b) **Develop data of routes and permits.**
   - The use of information and communication technology (ICT) and transport network applications will be explored to assist in collecting, processing, and using data effectively.

STAGE 3

Consolidate industry

a) **Introduce operating licenses in conformity with plans.**

b) **Establish operational systems at ranks for registered operators.**
   - Introduce route service contracts using competitive procurement methods.

c) **Consolidate operators into capable entities.**
   - Establish operator associations.
   - Encourage all operators become members of associations, thereby promoting self-regulation and accountability for their members.
   - Promote business development—including skills training, business diversification, etc.

STAGE 4

Shift regulatory reform from competition "in" the market to "for" the market

a) **Issue operating licenses for selected routes for higher quality services.**

b) **Promote "association" business development.**
   - Provide management training.
   - Promote good business practices.
   - Improve transport logistics.

c) **Improve the operating environment.**
   - Provide more ranks/terminals.
   - Prioritize road space.
   - Prioritize traffic signal controls.
   - Prioritize buses.
   - Improve NMT facilities.
   - Integrate ticketing.
   - Provide a passenger information system.
   - Encourage self-regulation, control, and discipline.
   - Eliminate touts and regularize the marshalling system.
   - Alternatively, use tolling system within the ranks to eliminate touting.

d) **Identify Public Private Partnerships to finance infrastructure and bus procurement.**

e) **Incentivize vehicle renewal.**
   - Establish arrangements for collective "access" to financing by Associations/Cooperatives.

STAGE 5

Implement with stakeholder support

a) **Offer route service contracts to bus "Associations."**

b) **Introduce competitive procurement for route contracts.**

c) **Provide consultation services.**

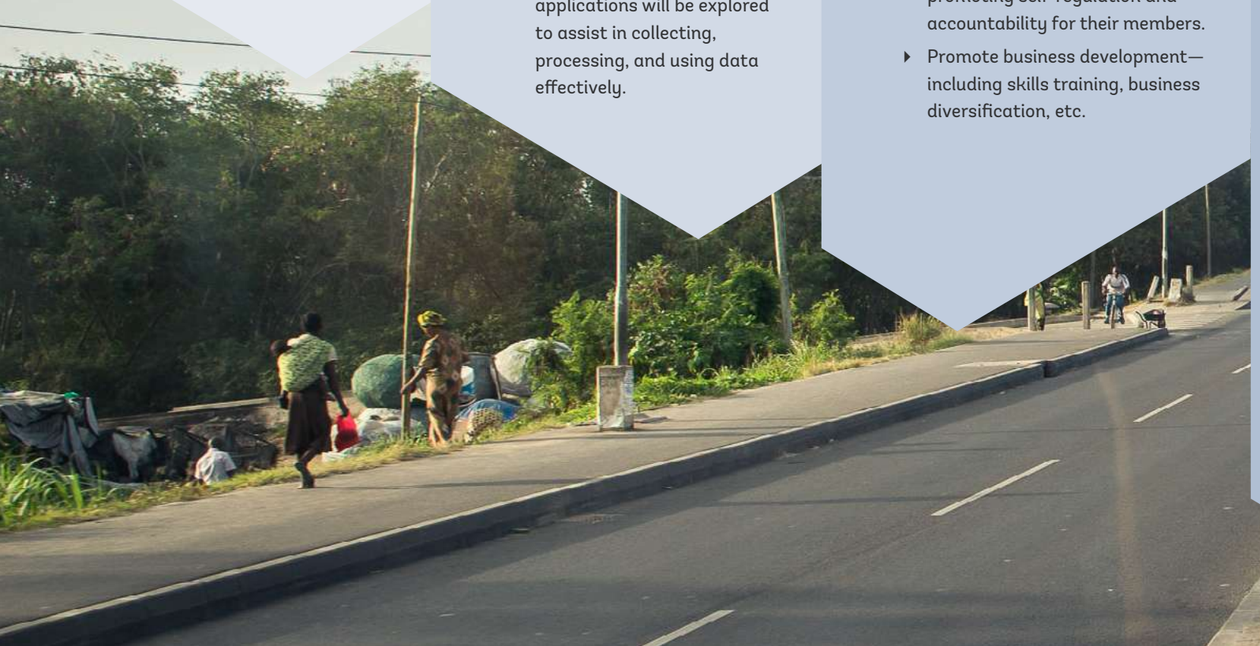
STAGE 6

Evaluate operations

a) **Fully integrate the Public Transport (PT) system.**
   - Provide infrastructure and a suitable operating environment to support improved urban transport services.

b) **Put a vehicle renewal scheme in place.**

c) **Put monitoring and evaluation practices in place.**



Box V-1. The Developing World's Public Transport Crisis and the Rise of Tech-Enabled Transportation Services[66]

With the promise of reducing the number of vehicles on the road and overcoming the chronic shortage of state-run buses, bus-sharing services are rapidly gaining traction in fast-growing cities.

Within this growing mobility-focused tech ecosystem, technology-enabled bus services are beginning to stand out as one particularly compelling solution. In Bangladesh, by matching bus routes closely to commuters' needs, technology-enabled Bus services such as Jatri, Swvl, and Airlift are gaining mass popularity by offering reliable, affordable, and efficient transport for millions of commuters.

Last year, Pakistan witnessed the launch of its first "bus hailing" service, Airlift. Within eleven months, it has secured $12mn in its Series A funding round – marking one of the largest tech investments ever seen in South Asia. The same year, the Cairo-based startup Swvl raised $42mn of new funds in its "Series B funding" in the largest-ever financing round for an Egyptian startup.

Other bus-sharing applications such as Shuttle in India, Gona in Nigeria, and ClickBus in Brazil have all followed suit with major investments and millions of users. Both Careem and Uber have sought to get a stake in the fast-growing market by launching their own bus services.

Following the lead of other developing economies such as the likes of Egypt, India, and Ghana, Bangladesh is beginning to look towards harnessing tech solutions to solve its chronic transport problems. Jatri is at the forefront of introducing this service in Dhaka city. With its innovative app and flexible features, Jatri is providing bus commuters of Dhaka the one solution they always desired-- estimated time of arrivals and digital payment system for buses. Commuters are encouraged to purchase their bus tickets through the app, allowing cashless and quick transactions. Jatri offers all app users continuous real-time updates of the bus location, making the requirement of bus schedules obsolete.

Apart from digital ticketing, Jatri supports offline ticketing too. Commuters without smartphones can opt for POS machine ticketing at bus counters, antiquating the need for conductors checking tickets multiple times. The Jatri app provides a multitude of solutions to bus companies such as fleet management, accurate data analytics, computations of financial issues, and more. As the payment system is completed digitally, all transactions are handled by banks-thus making the activities of bus owners much easier and manageable.

Source: Asiz Arman, Future Startup, June 22, 2020

The growing success of Jatri demonstrates how technology-based bus services can transform urban living for people in these communities. As the number of shared buses takes over the city, commuters will enjoy efficient and pre-planned commutes.

66 Aziz Arman (June 22, 2020)
https://futurestartup.com/2020/06/22/public-transport-crisis-and-the-rise-of-tech-enabled-transportation-services/

Box V-2. Transport for London renews ViaVan micro-transit service for three years[67]

ViaVan, the joint-venture between Via and Mercedes-Benz Vans in Europe, has been granted a three-year Private Hire Vehicle Operator license renewal to continue to operate efficient on-demand shared transport in London by Transport for London (TfL).

Since its launch in April 2018, ViaVan has provided more than 7 million rides in London and saved 2 million vehicle miles by pooling multiple passengers into shared vehicles, resulting in more than 660 tons of CO^2 saved.

During this time, ViaVan expanded to serve London city-wide, and won a highly competitive tender to collaborate with TfL in launching London's first demand-responsive bus pilot in the borough of Sutton, a project which is directly in line with the city's vision for the future of transport.

A key point of differentiation for ViaVan in London is the company's focus on the evolution of on-demand public transport to reduce single-occupancy vehicles on the road and reduce the impact of rising congestion and harmful carbon emissions. Using technology from U.S. provider Via, ViaVan has proven to be a strong solution for public transport operators and partners, not only in London with TfL but across the UK in both rural and urban areas, according to the company.

Via's technology powers the ArrivaClick service in Liverpool, Leicester, and Sittingbourne. In Sittingbourne, 50 percent of ArrivaClick passengers have shifted from private modes of transport, and significant numbers use the service to connect to commuter train lines. In partnership with Go Ahead, ViaVan provides nearly 4,000 shared journeys a week in Oxford, and most recently launched GoSutton with TfL. ViaVan also launched a second UK consumer service in Milton Keynes in October 2018 that has provided more than 55,000 rides and saved more than 18 tons of CO^2, with the introduction of electric vehicles to the fleet coming this fall.

Source: Staff, Metro Magazine, July 15, 2019

67 https://www.metro-magazine.com/10031210/transport-for-london-renews-viavan-microtransit-service-for-3-years

Key Messages

1

Always determine the causes of urban transport problems, not just symptoms, before trying to identify solutions.

2

Congestion is not the only urban transport problem; there are other important transport-related social, health, economic and environmental issues as well.

3

For strategic plans to be effective, they must be guided by a "6-C process"—Comprehensive, Cooperative, Communicated, Championed, Connected, and Continuous.

4

Urban transport "problems" have many dimensions; learn to break them down into smaller, more specific problems that can be addressed individually.

5

There is no single public transport reform "solution," no matter how glamorous, that can solve all complex mobility and access problems that a city endures. Evaluate the range of solutions individually and together as symbiotic packages in terms of all the criteria that matter most: transport, social, economic environmental, health, etc.

6

A comprehensive, integrated, context-sensitive multi-modal system is ideal; in most developing city contexts, that will include "paratransit" services.

7

One of the mechanisms to improve the quality of paratransit services is to introduce controlled competition for the right to operate specified services over a defined core network where the gain from effective planning and regulation more than offsets the costs.

8

Controlled competition requires the operating industry to restructure into some form of legal entity such as cooperatives or associations to be party to contract agreements.

9

Public policy should not only be to "shift" people from private vehicles to non-motorized and public transport, but to keep people already using non-motorized and public transport from shifting to private vehicles.