

# SUMATRA

For Competitive, Efficient, Quality and Safe Transport Services

Surface and Marine Transport Regulatory Authority  
Mamlaka ya Udhhibiti Usafiri wa Nchi Kavu na Majini

## Final Report



## STUDY ON USER NEEDS AND MANAGEMENT OF PUBLIC TRANSPORT SERVICES IN DAR ES SALAAM

SUMATRA

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## **EXECUTIVE SUMMARY**

Dar es Salaam is among rapid growing cities in Africa. Expansion of the city has posed challenges in terms of city planning, regulation and provision of urban transport services, which depend on road based transport services rendered by numerous individual bus operators. The existence of numerous individual bus operators in the business, each owning a small fleet coupled with lack of clear understanding of relationships of key actors in the business; namely: owners, crew and passengers poses a further serious challenge in striking a supply-demand balance of urban transport services.

Study on User Needs and Management of Public Transport Services in Dar es Salaam is an attempt to understand relationships between owners, crew and passengers with a view to bringing harmony in the industry. The study also looks into preferences of operators and operatives on the mode of operation for urban public transport business in order to understand motives behind proliferation of individual operators and disincentives of forming companies. On the supply-demand balance, the study provides guidelines on the allocation of buses into various routes taking into consideration user needs and other route characteristics.

In studying the problem at hand, literature review has been undertaken extensively; the emphasis however has been on the historical background of the city urban transport and urban transport studies which were carried out in Dar es Salaam City. Experiences of transport in other cities in Sub Saharan Africa have also been drawn.

The study was carried out in nine representative Wards of Dar es Salaam Region. The Wards were evenly distributed in three districts of Kinondoni, Ilala and Temeke.

Given the diversity of the study objectives, several surveys were conducted. Household interview survey provided a basic channel through which users of public transport were sampled and studied. Another form of survey was observational surveys. These were carried out at bus stops and on board buses. Researchers observed and recorded number of buses and passengers at both bus stops and on board. Route observational survey took a form of participant observational survey whereby researchers went to bus stops; waited for buses and travelled. With the aid of diaries, researchers recorded observations on occupancy ratio at peak and off peak hours, passenger waiting times, bus waiting times, number of formal and informal bus stops enroute and bus turn- round time.

Selection of sampling units mainly based on a multistage sampling technique, in which sampling frames were constructed sequentially as the study was progressing. Three basic datasets were generated by the study. Household dataset comprised of 916 households sampled from 18 streets in 9 Wards. Drivers' dataset comprised of 390 drivers of commuter buses. These were complimented with a sample of 99 bus owners.

Broadly, the study revealed that:

- (i) urban transport in the city was mainly dominated by private individuals who own second-hand mini buses of carrying capacity between 25 and 34 passengers;
- (ii) majority of bus owners had a fleet size of utmost three buses;
- (iii) provision of urban transport was mainly dominated by bus owners who lacked knowledge, skills and experience in transport management. In turn, this contributed to high rate of turn over as many treated the business as a means of survival instead of a going concern;
- (iv) majority of bus owners had limited sources of capital such that they depended on personal financing. This negatively affected the growth of

the sector as capital constraints limited capacity to acquire quality brand new and large buses;

- (v) most drivers preferred companies or cooperatives to run urban transport business on assumptions that companies could provide better package, working conditions and improve discipline and compliance with rules and regulations to both drivers and owners;
- (vi) generally bus owners were wary of letting the business run by companies or cooperatives as they would encourage monopoly, poor management and misappropriation of funds. Fewer bus owners however were of the opinion that companies or cooperatives could facilitate access to bank loans, joint management skills, improved quality of services, facilitate capacity building and lead to sustainable fare schemes;
- (vii) on employment terms, most drivers were engaged on daily contracts but still maintained employer – employee relationship. However, meeting of the daily revenue target was the overriding condition for the continuity of the contract;
- (viii) in terms of remunerations, drivers were not paid salaries and other benefits such as medical, house allowances and training. The study established that drivers were paid themselves on surplus after covering operating costs and remitting daily targets to owners;
- (ix) bus owners were neither involved nor concerned with employment of bus conductors even though they were the ones with direct contact with passengers. Drivers were the ones in charge of engaging bus conductors. Lack of involvement of owners in engaging conductors shows the extent of neglect on customer care issues;
- (x) majority of passengers' were dissatisfied with commuter transport services due to misconducts of bus crew mainly conductors. Frequently reported misconducts included: use of abusive language, poor

cleanliness of buses, dirtiness of crew uniforms, overloading especially during peak hours and high tuned volumes of music and radio;

- (xi) owners with good supervision systems were getting good returns on business and therefore managed to recover investment costs in two to three years for mini buses while large buses took about five years;
- (xii) both bus drivers and owners were involved in route selection. Criteria used in route selection included availability of passengers, state of the road infrastructure, route length, proximity to owners' premises and operational experience on the route;
- (xiii) there were high number of informal bus stops on the way to the extent of suggesting high reluctance of bus drivers in observing road traffic regulations and improper positioning of bus stops; and
- (xiv) over half of the studied routes seemed to have more buses than required. On the ground however passengers were seen to be overcrowded in buses due to short supply of buses. A fact that can be attributed to poor fleet management to the extent that buses were concentrated at one point thus being unavailable in other places, congestion on city roads which impeded smooth flow of buses and improper design of routes which resulted into many urban routes but with less frequencies of services.

It is worth noting that dominance of unprofessional and inexperienced individual operators with inadequate capital in the provision of urban public transport services retards growth of urban transport sector in the city while daily employment system for operatives leads to poor services, increased non compliance and consumers' dissatisfaction; Generally, the current modus operandi poses difficulties in regulation and enforcement as opposed to the use of companies, which if properly deployed would lead to:

- (i) effective and coordinated fleet management system;

- (ii) business entities which are not only sound financially but also creditworthy;
- (iii) business entities capable of purchasing large capacity buses;
- (iv) establishment of proper demand patterns through analysis of data generated out of ticketing system;
- (v) allocation of buses in accordance with passenger demand;
- (vi) improved crew welfare;
- (vii) implementation of bus time tables;
- (viii) reliable services;
- (ix) timely passenger market surveys; and
- (x) improved law enforcement and regulation

The study therefore recommends that deliberate measures are needed to address public transport challenges in the city of Dar es Salaam. Besides SUMATRA's and owners, other key stakeholders such as TANROADS, City Council and Municipals as well as Traffic Police have a vital role in reducing travel time and improving conditions of bus stops. Increased travel time mainly caused by congestion affects tremendously fleet utilization.

Specifically, the study recommends the following to be done:

- (i) the mode of operation of urban public transport business in Dar es Salaam city be in form of companies or cooperatives;
- (ii) conduct Change management process to individual operators. Such process should include an effective sensitization programme to assist individual operators and operatives shed away misconceptions on advantages and disadvantages of using companies and cooperatives;
- (iii) a study to determine required number of companies, conditions and rules of engagement should be undertaken. The study should further re-

examine current routes to establish required number of trunk – feeder routes in the city;

- (iv) urban Public Transport in Dar es Salaam be tendered to financially sound and competent companies and cooperatives;
- (v) discourage use of touts who besides adding on operating costs harass passengers;
- (vi) city and Municipal Councils should improve conditions of roads and expand road network in order to ease congestion and facilitate urban transport business;
- (vii) in order to proportionally address users demand of transport services, the number of buses in various routes should be revised such that buses plying in routes within Transport Central Business District (TCBD), passing through TCBD and going into TCBD, are in the ratio of 1:2:3
- (viii) SUMATRA in collaboration with city transport authorities should conduct intensive passenger market survey at least once in two years to determine demand of urban passenger transport taking into account city growth and changing land use patterns;
- (ix) City Authorities in collaboration with other stakeholders such as Municipals and TANROADS should revisit number, placement, quality and size of bus terminals and stops;
- (x) City council in collaboration with other stakeholders such as municipals, TANROADS and Police should provide sheds, toilets and necessary security at bus terminals. Intermediate bus stops should also be provided with sheds;
- (xi) there is a need to form a steering committee which will be meeting on regular basis to provide guidance on route design and bus allocation basing on City plans and changing land use patterns. The committee should comprise members from SUMATRA, City Council, Municipals, TANROADS and Police Force;

- (xii) a training program on customer care for bus crew should be devised and conducted regularly to facilitate change of crew behavior towards passengers and other road users

Details of a proposed action plan to implement study recommendations are summarized in Table 1.

**Table 1. Proposed Action Plan for Implementation of Study Recommendations**

SNO	Issues	Recommendation	Responsible Institution	Time Frame for Initiation
1.	Domination of many private individuals in urban transport	The mode of provision of urban public transport service in Dar es Salaam city be through companies or cooperatives.	SUMATRA	1 Year
2.	<ul style="list-style-type: none"> <li>• Little experience of bus owners and high operators turn over;</li> <li>• Capital constrains to acquire quality and large buses.</li> </ul>	Provision of Urban Public Transport in Dar es Salaam be tendered to financially sound and competent companies and cooperatives.	SUMATRA	1 Year
		A study to determine number of companies, conditions and rules of engagement be undertaken. The study may as well re-examine current routes to establish required number of trunk – feeder routes in Dar es Salaam city to facilitate tendering process;	SUMATRA	6 months
3.	<ul style="list-style-type: none"> <li>• Owners lacking supervision of urban public transport business</li> <li>• Non involvement of owners in engaging bus conductors</li> <li>• Engagement of drivers on daily contract</li> <li>• Poor remuneration of drivers</li> </ul>	Conduct Change management process to current individual operators;	SUMATRA NIT DARCOBOA	3 Months
4.	Lack of understanding on the pros and cons of deploying companies and cooperatives to run urban public transport and associated misconceptions with regard to formation of companies or cooperatives	An effective sensitization programme be devised to assist individual operators and operatives shed away misconceptions on advantages and disadvantages of using companies and cooperatives	SUMATRA NIT DARCOBOA	3 Months
5.	Presence of touts who drain finances out of the business unnecessarily and cause disturbances to passengers	<ul style="list-style-type: none"> <li>• Discourage touts who apart from adding on operating costs harass passengers</li> <li>• Passengers to board buses in orderly manner (i.e. queuing)</li> </ul>	MUNICIPALS POLICE	Immediately

<b>SNO</b>	<b>Issues</b>	<b>Recommendation</b>	<b>Responsible Institution</b>	<b>Time Frame for Initiation</b>
6.	Avoidance of operators to provide services in poor and congested roads	Improve conditions of roads in order to attract urban public transport business	CITY COUNCIL , MUNICIPALS, TANROADS	Immediately
7.	Passengers' dissatisfaction with commuter transport services in Dar es Salaam	Conduct intensive passenger market survey once after every two years to determine passengers perspectives and demand of urban passenger transport taking into account city growth and changing land use patterns	SUMATRA CITY COUNCIL MUNICIPALS	1.5 Year
		Devise a training program on customer care for bus crew to facilitate change of behavior towards passengers	SUMATRA NIT DARCOBOA	3 Months
		Bus terminals be provided with sheds, toilets and necessary security while intermediate bus stops are provided with sheds	CITY COUNCIL TANROADS MUNICIPALS POLICE	6 Months
8.	High number of informal bus tops enroute	Revisit number, placement, quality and size of bus terminals and stops	CITY COUNCIL TANROADS CITY COUNCIL MUNICIPALS	Immediately
9.	Non compliance of rules and regulations and demonstration of irresponsible behaviors such as reckless driving, route shortening, illegal route shifting, overloading and passenger harassments	<ul style="list-style-type: none"> <li>• Improve enforcement of law and order</li> <li>• Provide crew training</li> </ul>	POLICE CITY COUNCIL MUNICIPALS OPERATORS, NIT	Immediately
10.	Absence of a coordinated system to manage route design and allocation in the city	Form a steering committee to provide guidance on route design and bus allocation	SUMATRA CITY COUNCIL MUNICIPALS POLICE	Immediately

# **STUDY ON USER NEEDS AND MANAGEMENT OF PUBLIC TRANSPORT SERVICES IN DAR ES SALAAM**

## **1.0 INTRODUCTION**

Dar es Salaam is among the rapid growing cities in Africa (Kumar & Barret, 2008). Population growth of the city is estimated at 4.3 percent (Dar es Salaam City Council, 2004). However, rapid expansion of the metropolitan area of the city, as highlighted by Lupala (2002), has led to challenges in city planning, regulation and operations of urban public transport services.

Urban public transport services in the city mainly depend on road transport services (Howe & Bryceson, 2000). Reliance on road based transport services coupled with high growth of transport demand has led to inadequate supply of transport services and increased dependence on use of private cars and consequently road congestion and poor traffic flow management (Kumar et al, 2008).

The National Transport Policy (2003) reiterates the fact that urban transport in Tanzania is constrained by low level of motorization to meet transport demand, journey delays due to traffic jams, vehicles' low capacity and hash behaviour of the bus crew (Ministry of Infrastructure Development,2003). Provision of urban public transport services by private sector is underlined at policy level (Ministry of Infrastructure Development, 2003). However, existence of numerous individual bus operators not only constrain regulation and enforcement but also leads to uncoordinated supply of commuter bus services which does not take into account demand of the service.

### **1.1 Statement of the Problem**

The existence of numerous individual bus operators in the city characterised with unknown relationships between owners and employees (i.e. crew) on one hand, and on the other passengers and crew is a regulatory concern as it poses

challenges particularly on striking a demand-supply balance. Uncoordinated supply of commuter bus services that does not take into account demand of the service is a regulatory concern which needs to be addressed. Moreover, clear understanding of relationships among actors; namely: owners, crew and passengers in the business is key in ensuring deliverance of a coordinated quality urban road transport services.

## **1.2 Objectives of the Study**

The study is therefore set to critically understand relationships between owners, crew and passengers with a view to bringing harmony in the industry. The study also looks into preferences of operators and operatives on the mode of operation for the urban public transport business in order to understand motives behind proliferation of individual operators and disincentives of forming companies. Moreover, the study seeks to provide guidelines on the allocation of buses into various routes in relation to user needs and other route characteristics.

### **1.2.1 Specific Objectives**

Specific objectives of the study are:

- (a) to determine bus ownership profile and turn over of operators;
- (b) to determine the relationship between owners and bus crew;
- (c) to determine the relationship between passengers and bus crew;
- (d) to determine perceptions on preferred mode of operation for urban transport business;
- (e) to establish urban routes characteristics; and
- (f) to determine required number of buses in different routes

### **1.3 Justification of the Study**

According to SUMATRA Act, 2001 the Authority is empowered to regulate surface and marine transport services. Among the functions mentioned in the Act as per section 6 (i) include monitoring of performance of the regulated sub sectors in relation to:

- (a) levels of investment;
- (b) availability, quality and standards of services;
- (c) the cost of services; and
- (d) the efficiency of production and distribution of such services.

It is pursuant to this section that the study has been carried out. Moreover, Dar es Salaam is the most populated city with vast economic activities in Tanzania. The population of the City is estimated at 3,118,132 (National Bureau of Statistics, 2006) with majority of people using public transport for their movements e.g. going to work, school and home (Japan International Corporation Agency, 2008). Therefore, in the quest to improve public transport from a regulator point of view, it is paramount to systematically understand urban transport challenges, particularly those facing users, operatives and bus owners with a view to improving urban public transport services in the City.

## **2.0 LITERATURE REVIEW**

In reviewing the literature, focus was on historical background of the Dar es Salaam urban transport, previous studies on urban transport carried out in Dar es Salaam City, sector legislation related to urban transport in Tanzania and experience of urban public transport in other cities in sub Saharan Africa.

### **2.1 Historical Background of Urban Public Transport in Dar es Salaam**

The public transport system in Dar es Salaam can be well understood by reviewing transport prior and after trade liberalization; the cut –off being year 1983.

#### **2.1.1 Urban Public Transport Prior to Trade Liberalization**

The history of urban public transport in Dar es Salaam dates back to 1949, when a private british company known as Dar es Salaam Motor Transport Company (DMT) was formed to offer urban public transport services in the city.

After the Arusha Declaration in 1967, DMT was nationalized and a national parastatal organization called Usafiri Dar es Salaam (UDA) was formed to take over the role of managing and providing urban public transport services in Dar es Salaam including setting of fares. UDA however was able to meet only 60% of the urban public transport demand in the city. In those days it was common to see long queues of passengers waiting and overcrowding in both buses and bus stops (DART Agency Establishment Order, 2007). The supply of public transport services failed to meet demands.

#### **2.1.2 Urban Public Transport after Trade Liberalization**

A gap in service provision under UDA necessitated the Government to allow the private sector to enter into the urban public transport business alongside UDA in

1983. However, public transport service in the city continued to be inadequate and poorly managed. By year 2000, UDA market share declined to only 2% (Howe et al, 2000) paving way for private operators to dominate the market.

The dominance of private sector in the operation of urban public transport resulted into rapid increase in buses of small carrying capacity and poor condition. Furthermore, Wikitravel (2010,September 17) observed that majority of the private owned buses crew did not even comply with traffic laws and safety regulations and stopped anywhere for embarking and disembarking passengers.

## **2.2 Previous Studies on Urban Public Transport in Dar es Salaam City**

There have been several studies on urban public transport in Dar es Salaam, each addressing specific objectives.

A study by Kumar et al. (2008) sought to provide a comprehensive overview of the state of urban transport across major cities of Africa, Dar es Salaam being one of them, with a view to drawing out main challenges facing urban transport sector and illustrating different ways in which to address them. The study focused on commercial buses, taxis and motorcycles as means of public transport. The study was conducted between June, 2004 and December, 2006. The design of the study served its primary purpose. However, on regulatory perspective, the study had some limitations as it described the state of urban transport in the period prior to the advent of Regulator - SUMATRA. Moreover, the fact that several regulatory measures had been implemented from the time the study was conducted, it was imperative that a fresh study was to be done.

A study by Kanyama et al. (2004) was yet another attempt to investigate issues related to public transport in Dar es Salaam city. The study was conducted between January, 2003 and December, 2004 with at least four objectives of (i) investigating existing public transport planning approaches in Dar es Salaam, (ii) examining the extent of vehicle emissions and occurrences of accidents, (iii)

examining constraints and potentials for the development of public participation in public transport ,and (iv) identifying factors that inhibit institutional co-ordination. Just like the study by Kumar et al (2008), the study by Kanyama et al (2004) had limitations with respect to the timing of the study. Despite the time factor limitation in generalising study findings, the study provided valuable insights with respect to user assessment of the Daladala transport quality. The study investigated users opinions on crew behaviour particularly language and tidiness. These were some of the issues that needed to be updated to reflect the existing situation and changing environment.

Another study on urban Passenger services for Dar es Salaam was commissioned by National Transport Corporation to Wilbur Smith Associates Inc in 1990. The objective of the study was to develop an action programme to improve the viability, quality and efficiency of bus services and estimate demand for bus services and compare with existing and potential supply. While the objectives of the study were quite pertinent, its findings when assessed at present times appear to be outdated and need to be updated. At the time of the study, UDA was still regarded as a major provider of urban transport, which is no longer the case. Moreover, the environment under which the study was conducted has significantly changed. Factors such as city dwellers population, spatial extent of the city and the size of the urbanised area have changed dramatically (Lupala, 2002). Between year 1991 and 2001, the spatial extent of the city increased from 18 km to 30 km, the size of the urbanised area increased from 19,879 to 57, 211 hectares while the population increased from 1.5 million to 2.5 million people.

A study on Dar es Salaam Transport Policy and System Development Master Plan conducted by Japan International Cooperation Agency (2008) investigated transport services in Dar es Salaam city comprehensively. The ultimate goal of the study was to evolve a Master Plan for transport and systems development. Towards that objective, travel patterns and characteristics of residents in Dar es Salaam City were studied. The focus of the study was on all common modes of

transport; mainly buses, private cars and walking. Various methods were employed in data collection including screen line survey, cordon line survey, passenger opinion surveys and private car user opinion survey. The study findings have been presented such that in some aspects one can disintegrate findings and focus on daladala in isolation. However, the study did not dwell much on relationships among actors in the daladala business and assessment of adequacy of services in various routes i.e. balancing demand and supply of daladala services.

A study by Kombe et al. (2003) investigated links between public transport and the livelihoods of the urban poor in Dar es Salaam. The study took a case study approach in collecting information on travel times, conditions of buses including overcrowding and seating conditions, hygiene conditions, operators working conditions etc. While objectives of the study were quite pertinent, the disadvantages of the case study methodology and the fact that study findings were subjective as depended heavily on opinions limited the extent to which the findings could be generalised and used.

## **2.3 Sector Legislation**

There are several pieces of legislation guiding provision of urban transport in Tanzania. These are:

### **2.3.1 SUMATRA Act**

Section 6 (1) of SUMATRA Act No 9, 2001 lists the Authority's functions which include the following:

- (a) to perform the functions conferred on the Authority by sector legislation.
- (b) subject to sector legislation
  - (i) to issue, renew and cancel licenses;

- (ii) to establish standards for regulated goods and regulated services;
  - (iii) to establish standards for the terms and conditions of supply of the regulated goods and services;
  - (iv) to regulate rates and charges;
  - (v) to make rules.
- (c) to monitor the performance of the regulated sectors, including in relation to:-
- (i) levels of investment;
  - (ii) availability, quality and standards of services;
  - (iii) the cost of services;
  - (iv) the efficiency of production and distribution of services, and
  - (v) other matters relevant to the Authority.
- (d) to facilitate the resolution of complaints and disputes;
- (e) to take over and continue carrying out the functions formerly of the Tanzania Central Freight Bureau set out in section 4, 4A and 4B of the Tanzania Central Freight Bureau Act, 1981;
- (f) to disseminate information on matters relevant to the functions of the Authority; and
- (g) to consult with other regulatory authorities or bodies or institutions discharging functions similar to those of the Authority in Tanzania or elsewhere.

### **2.3.2 Local Government (Urban Authorities) Act**

Section 55 (1) (h) (n) of Local Government (Urban Authorities) Act No. 8 of 1982 stipulates duty of local government with respect to provision of public transport. Section 75 of the schedule spells out that local government can provide urban

transport services. In this context transport services refers to transportation of either passengers or freight. Such transport services include:

- (a) provision of urban transport services. Services offered by UDA are a typical example as the Dar es Salaam City Council is among the shareholders;
- (b) construction of urban road infrastructure;
- (c) construction and operations of bus terminals with adequate facilities such as toilets, water and electricity;
- (d) issuance of licenses, taxi parking permit;
- (e) provision of ferry services; and
- (f) to advise the central government and its institutions on short and long term plans related to road transport in their areas of jurisdiction.

### **2.3.3 Road Traffic Act**

The Road Traffic Act, No. 30 of 1973 administered by the Ministry of Home Affairs, confers power to traffic police to oversee issues related to road safety. These include:

- (a) vehicle inspection (section 82);
- (b) certification of drivers (section 19);
- (c) registration of motor vehicles (section 3); and
- (d) attending to road accidents (section 40).

### **2.3.4 Road Act**

Part 5 of the Road Act , 2007 deals with issues of road safety. These include:

- (a) installation of road signs by relevant authorities;

- (b) specification of road speed limits as would be determined by the responsible Minister; and
- (c) responsibilities of road authorities to ensure safety of road users during design, construction, upgrading and use of roads.

### **2.3.5 The Standards Act**

The Standards Act No 2, 2009 confers powers to Tanzania Bureau of Standards to set, modify and nullify standards including motor vehicle standards.

### **2.3.6 Transport Licensing Act**

The Transport Licensing Act No 1, 1973 is administered by SUMATRA. It puts in place procedures to be followed for applying and issuance of road passenger and freight transport licenses. The Act also lists conditions of licenses.

### **2.3.7 DART Agency**

Dar Rapid Transit (DART) Agency was established by GN No. 120 of 2007 under the Executive Agency Act No. 30, 1997 with a view to prompting modern and efficient urban transport system in the city of Dar es Salaam. The key role of the DART Agency is to establish and operate the Bus Rapid Transit (BRT) system for Dar es Salaam. DART Agency aims at achieving the following:

- (a) establish and operate Bus Rapid Transit (BRT) system for Dar es Salaam;  
and
- (b) ensure orderly flow of traffic on urban streets and roads;

### **2.3.8 Other Policy Directions - National Transport Policy**

Besides the above reviewed pieces of legislation, the National Transport Policy was also reviewed

According to the National Transport Policy (2003), Dar es Salaam urban transport is mainly dominated by road transport. Other modes such as railway and water are not yet developed to serve the public. However, motorized road transport is

constrained by journey delays caused by traffic congestion, shortage and low carrying capacity of vehicles as well as hostile behavior of bus crew that reflected poor customer care.

The Policy further observes that road transport services are concentrated on the major roads leading to the city centre while peri-urban and newly developed areas had some difficulties in accessing public transport service. On the other hand, majority of the Dar es Salaam urban roads had limited capacity which was further compounded with poor parking to the extent of affecting traffic mobility. As a result in some cases, street vendors and pedestrians were compelled to walk along the main roads.

The Policy acknowledges the fact that the growth of Dar es Salaam City in terms of population and area has not matched with infrastructure, modes of transport and equipment.

## **2.4 Experience of Other Cities in Sub Saharan Countries**

For the purpose of understanding the current status of urban transport practices, several urban transport systems for major cities in other countries were reviewed. This included Sub Saharan countries where studies have shown that getting to work is increasing difficult particularly in sprawling commercial centres. According to the studies among the factors attributing to poor services included poor infrastructure and maintenance, overloading of buses, low fares and irregular subsidies that did not permit sustainable operations.

### **2.4.1 Kampala**

Urban public transport for the city of Kampala comprised of aged mini buses with an average of 13 years. About 90% of the public transport buses were owned by private individuals with availability rate of 85%. It was further noted that 90% of the newly registered buses were imported as second hand (Kumar et al, 2008).

Moreover, the city was dominated by small size buses. In 1994 some initiatives were taken to introduce large capacity buses. However such initiatives proved futile as were heavily opposed by Uganda Taxi Operators and Drivers Association (UTODA).

#### **2.4.2 Bujumbura**

Public transport services in Bujumbura-Burundi were rendered by both Public and Private Companies. A public company (OTRACO) served only 10% of the market share. The rest was served by private individuals owning mostly minibuses (Kumar et al, 2008).

#### **2.4.3 Kigali**

Public transport services in Kigali were mostly rendered by privately owned minibuses of seating capacity between 14 to 20 passengers. The number of private buses is estimated to be around 2,000.

A government owned firm, operated by National Board of Public Transport (ONATRACOM) complimented provision of urban transport services. The company owns about 120 relatively large buses of carrying capacity between 30 and 60 passengers.

#### **2.4.4 Nairobi**

Nairobi City was served mainly by three companies namely: Double M Commuter Train, City Hoppa (aka City Metro) and Kenya Bus Management Services (KBS). The three companies were serving the Central Business District of Nairobi. The outskirts of Nairobi city were serviced by individual operators using mini buses, popularly known as MATATU.

#### **2.4.5 Lessons Learnt from Experiences of Other Cities**

Generally, the literature reveals inefficiencies in the provision of urban transport services in most cities of Sub Sahara countries. Moreover, the review suggests

that dominance of small sized buses, owned by individuals, is a common phenomenon. Large capacity buses are seen in cities where companies were involved in service provision.

### **3.0 RESEARCH DESIGN**

This section clarifies the methodology and instruments applied for the study on User Needs and Management of Public Transport Services in Dar es Salaam. In the course of describing the methodology, stakeholders that were consulted are mentioned. As in any other research, establishing proper rapport with interviewees was mandatory, for that matter, the methodology was set in a manner that invitation letters were sent in advance to respondents. The aim of the letter was two-fold; first, to solicit their participation and second to guarantee confidentiality of information they would provide.

#### **3.1 Location of the Study**

The study was based in Dar es Salaam. A total of nine Wards in Kinondoni, Ilala and Temeke Municipal Councils were included in the study.

#### **3.2 Survey Types**

Given the diversity of the study objectives, a number of survey types were used. They include the following:

- (a) documentary search;
- (b) focused group discussions;
- (c) observational surveys; and
- (d) personal interviews

##### **3.2.1 Documentary Review**

In order to collect relevant information on the problem being studied the team conducted an extensive literature review and studied various documents in an attempt to uncover the type of information which was required in the survey. Documentary review was a crucial stage to assist design of data collection. The documents reviewed included:

- (a) various operational reports generated by SUMATRA;
- (b) reports on/by DART project;

- (c) Dar Es Salaam Transport Policy and System Development Master Plan;
- (d) transport related legislation;
- (e) National Transport Policy;
- (f) National Household Survey reports;
- (g) National Census reports;
- (h) studies related to Dar es Salaam Urban transport; and
- (i) other documents on international public transport practices

### **3.2.2 Focused Group Discussions**

Another channel which complemented data collection methods was the use of focused group discussions. These had the advantages of producing a lot of information far more quickly and at less cost. However, the drawbacks of focused group discussions such as the tendency of participants' agreeing with responses from fellow group members and the limit to which generalization to the entire community called for caution in interpreting obtained results.

Focused Group Discussions served as a means of collecting information on the following:

- (a) perceptions on factors critical in selection of bus routes;
- (b) quality and quantity of daladala<sup>1</sup> buses in various route;
- (c) relationship including terms and conditions of employment between bus owners and crew;
- (d) relationship between passengers and crew; and
- (e) perceptions on the preferred mode of operation for urban public transport business;

Focused group discussion was arranged for UDA operatives/managers.

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<sup>1</sup> Daladala refers to an urban commuter bus. The word originated from a fare level which was a dollar equivalent to 5 Tanzanian shillings.

### **3.2.3 Observational Surveys**

#### **3.2.3.1 Observation at Bus Stops**

Bus stops were observed in order to adequately meet the objectives of the study.

At bus stops different traffic counts were conducted; such counts include:

- (a) number of passengers at bus stops;
- (b) number of passengers on board; and
- (c) bus counts.

Observations at bus stops served as a check on the validity of results obtained from households' personal interviews and therefore such surveys were confined on areas which were selected for household personal interviews.

#### **3.2.3.2 Survey of Routes**

Routes were studied in order to systematically observe and record levels of demand and supply of services. Specifically route surveys observed the following:

- (a) occupancy rate at peak hours;
- (b) occupancy rate at off peak hours;
- (c) passenger waiting time;
- (d) bus waiting time;
- (e) number of official bus stops along the routes;
- (f) number of informal/unofficial bus stops; and
- (g) bus turn round times.

Route observational surveys took a form of participant observational surveys whereby researchers went to the bus stops; waited for the bus and travelled.

A diary was provided to each researcher for the purpose of recording variables of interest.

Efforts were made to ensure that routes with different characteristics were observed. In selecting routes for inclusion in the study, the following steps were followed:

- (a) routes were listed basing on available information at SUMATRA – Dar es Salaam Regional Office;
- (b) the number of licensed buses for each route were established;
- (c) basing on (b) routes were divided into four groups; with cut offs at first, second and third quartiles; and
- (d) in each quarter, at least four (4) routes were sampled randomly and observed.

### **3.2.4 Personal Interviews**

#### **3.2.4.1 Household Personal Interviews**

Household interview surveys provided a basic channel through which users of public transport were sampled and studied. Such interviews took the form of households' interviews with a term household referring to a family unit sharing the same source of income.

##### **(a) Target Population and the Sampling Frame**

The general objective of the study lead to a broad definition of the study area and target population as - all people using public transport in the city of Dar es Salaam. Due to resource constraints and practical considerations, not all persons belonging to this target population were considered for the survey.

One of the practical considerations was the absence of residential registry to be used as a sampling frame. This implied that the sampling frame had to be constructed sequentially in the course of sampling. For practical convenience, information from the most recent national census was proposed to be used. In particular, the number of households in Dar es Salaam region was used as the total number of subjects (N) in a sampling frame. This information was available at regional, district and ward levels.

A serious technical challenge however arose due to differential coverage problems; that is, researchers were not sure whether households not covered by the sampling frame were random because if the non-coverage was linked with variables under study then the resulting selection was biased. Notable in the study, was the fact that homeless and households in city periphery were practically hard to reach.

**(b) Inclusion Criteria**

The target population constituted all people using public transport in the city of Dar es Salaam. Therefore, the corresponding sampling frame consisted of all households in Dar es Salaam with interviews confined to individual meeting the following criteria:

- (i) residents residing in Dar es Salaam region who ever used public transport; and
- (ii) residents of an apparent age that can independently board buses

**(c) Exclusion Criteria**

All people not satisfying the defined inclusion criteria were excluded. Such households were not taken into account when calculating non-response rate since these households were not considered to be refusing or non-contactable. They were non-eligible households.

**(d) Use of Proxies**

Proxies were allowed in the following situations:

- (i) if a reference person was sick or was in a state that could not allow an interview session to be conducted;
- (ii) if reference person was away. However, this was only possible if the hamlet leader granted permission to somebody else within the family to respond on behalf.
- (iii) when a reference person refused to participate but agreed on having another member of the family to respond on behalf.

### **(e) The Selection Process**

Each response was a result of a two-step process. First, selection of a subject (sampling-unit), and second; measurement (i.e. interview) of characteristics of interest.

In this particular study, the selection was tackled from a double perspective:

- (i) developing a sampling scheme; that is, developing a mechanism through which a random sample of households and respondents was obtained.
- (ii) developing rules of contacting respondents; that is, developing various aspects of fieldwork such that respondents sampled were retrieved and effectively interviewed.

### **(f) Sampling Design**

Sample surveys are distinguished by their particular approach to two questions. The first question addresses the procedure of obtaining units of the survey population through which data will be collected (sample selection). The second relates to how relevant conclusions including estimates can be inferred for the whole study population.

The final sampling scheme of households and respondents were a combination of several sampling techniques: stratification and multistage sampling.

#### **i District Stratification**

The regional was divided into 3 districts. Stratification based on these districts ensured balanced geographical spread. For each district three wards were selected. The wards were grouped into three categories; those which had dominantly *planned* areas formed one category and the other in dominantly *unplanned* formed the second group. The third group was

formed by partially planned wards. From each group one ward was randomly selected

**ii Within selected wards, units were accessed in two stages**

- selection of streets: from each selected ward two streets were randomly chosen. Therefore in each district six streets were selected;
- selection of respondents: Hamlet leaders of each of the selected streets were contacted to provide a list of reference persons for the households. These saved as sampling frame

**(g) Sample Size**

The results of sample surveys are always subject to some uncertainty as only part of the population is studied and possibility of measurements errors. Simply increasing the sample size costs both in terms of time and money; hence, the sample size sufficient to make inferences at regional level was established to be 780; the allocation of interviews per district was done proportional to the size of households in the respective district.

Questionnaire for household is attached as Annex I.

**3.2.4.2 Bus Owners Interviews**

Interviews for Bus owners' facilitated collection of information on the following:

- (a) perceptions on factors critical in selection of bus routes;
- (b) how they asses quantity of buses in various routes;
- (c) relationship including terms and conditions of employment between bus owners and crew; and
- (d) perceptions on preferred mode of operation for public transport business;

Interviews for bus owners' was in a form of a face-to-face structured interview in which bus owners responded to designated questions under study.

**(a) Target Population and the Sampling Frame**

The target population under this study included all bus owners operating urban public transport in the city of Dar es Salaam.

A list of owners with buses operating in Dar es Salaam city was being created by SUMATRA in the course of issuing road licences. Thus, the list, maintained by SUMATRA at regional office (register) served as a sampling frame.

**(b) Inclusion Criteria**

Individuals eligible for interviews were limited to bus owners with their buses plying urban routes in the city of Dar es Salaam.

**(c) Exclusion Criteria**

All owners not satisfying the defined inclusion criteria were excluded.

**(d) Use of Proxies**

Because of the nature of information collected from bus owners, proxies were allowed. Therefore, if a reference person (i.e. owner) was sick, in a state that could not allow an interview session to be conducted, away on a long journey, or refused to participate, then such respondent could send a knowledgeable proxy to respond on behalf.

**(e) Sampling Design**

The sampling scheme of the bus owners operating urban public transport in Dar es Salaam was selected randomly from a list of operators.

**(e) Contacting Selected Owners**

Once a bus owner was selected, he/she contacted by telephone to set an appointment for interview. As part of introduction during interview, an operator was given an invitation letter signed by the Director General of SUMATRA. The

letter (Annex II) explained the objectives of the survey and guaranteed confidentiality of the information provided.

### **3.3 Datasets**

Four basic datasets were generated and analyzed in the study. A brief description of each dataset is given below:

#### **(a) Household dataset**

Household dataset comprised of data from 916 households sampled from 18 streets in 9 Wards in Dar es Salaam. The list of streets and Wards included in the study are shown in Annex III of the report.

#### **(b) Drivers dataset**

Drivers' dataset comprised of data from 390 interviewed commuter bus drivers. The data pertain to drivers who were found at the commuter bus terminals at the time when researchers visited the terminals. Interviews were confined to drivers who indicated to be known to bus owners.

#### **(c) Bus Owners dataset**

Bus owners' dataset comprised of data from 99 interviewed commuter bus owners who were obtained within the framework of the sampling protocol set in the research design section.

#### **(d) Route dataset**

Route dataset comprised of data from 22 routes sampled for observation. The dataset included several variables on route as well as their terminals (end stations). Routes and stations data were obtained entirely through observations. A list of sampled routes is given in Annex IV

## **4.0 ANALYSIS AND DISCUSSION OF RESULTS**

### **4.1 Bus Owners' Profile**

This section critically assesses the city public transport operations including ownership profile and turn over of operators of urban public transport services in Dar es Salaam. Data on city public transport operations including ownership profile and turnover of operators was collected through structured interviews, which were administered to individual bus owners and drivers of urban public transport vehicles.

The study looked at owners profile in terms of type of ownership, years of experience in the business, fleet size - both at the time of commencement of business and during the study, sources of capital and revenue collections.

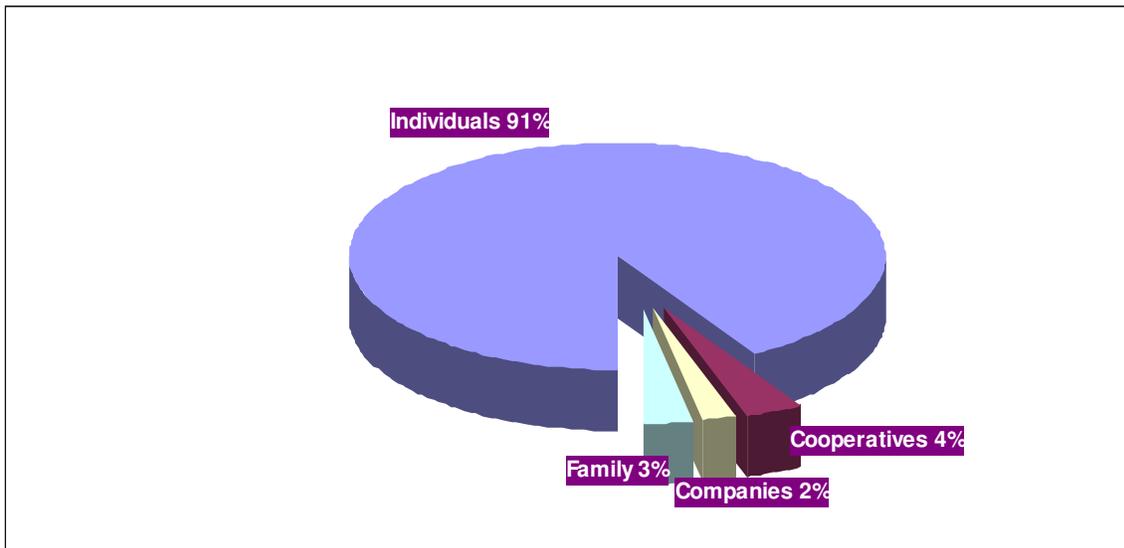
#### **4.1.1 Type of Bus Ownership**

Data on type of bus ownership was collected with a view to establishing the ownership profile of urban public transport vehicles in Dar es Salaam City. Types of ownership were categorized as private individuals, cooperatives, companies and family.

A sample of bus drivers revealed that most buses were owned by individuals as they accounted for 91.3%. Cooperative ownership accounted for 3.8%, family 3.1% and companies 1.8%. The finding was also observed in the dataset collected from bus owners who indicated at least 85.9% of buses were owned by Individuals. Table 2 shows types of bus ownership. Same is further illustrated by Figure 1.

**Table 2 Types of Bus Owners**

Ownership	Frequency	Percent
Individuals	356	91.28
Cooperatives	15	3.85
Companies	7	1.79
Family	12	3.08



*Figure 1 Bus Ownership Patterns*

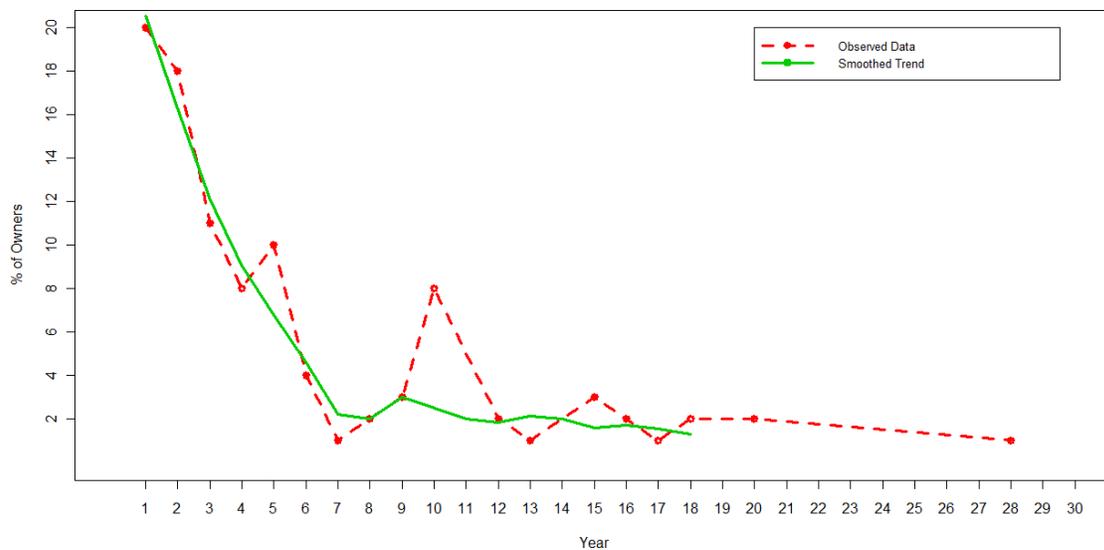
It was further revealed that 80% of individual owners had utmost 3 buses meaning that provision of urban public transport in Dar es Salaam is dominated by individuals with small fleet size each. This constrains regulation and law enforcement as a result of managing many and varied owners. Table 3 shows the distribution of number of buses per individual owners

**Table 3 Distribution of Number of Buses per Individual Owners**

	Number of Buses				Total
	1	2	3	4+	
Frequency	40	20	8	17	85
Percent	47.06	23.53	9.41	20.01	

### 4.1.2 Experience of Bus Owners

Basing on collected data, most of the daladala owners in Dar es Salaam City had an average of 4 years of experiences in the business. However, majority of them were relatively new with utmost 2 years in business. Figure 2 shows the distribution of bus owners by years of experience. The Figure shows high attrition rate suggesting high rate of exit from the business. With such high exit rate, a regulator and law enforcers will always be dealing with new and inexperienced entrants.



*Figure 2 Distribution of Bus Owners by Years of Experience*

### 4.1.3 Owners Fleet Size

#### (a) Fleet Size at the Commencement of Business

In order to establish owners' fleet size at the time of entering into urban public transport business, the study investigated on the owners' initial number and size of buses. This data was also useful in assessing growth of the business among operators.

The study showed that majority (83.8%) of owners started the business with a single bus. None of the owners had at least five buses at the time of joining the urban public transport business. Table 4 shows the number of buses owned by operators at business commencement time

**Table 4 Initial number of Buses**

Number of Buses	Frequency	Percent
1	83	83.84
2	12	12.12
3	2	2.02
4	1	1.01

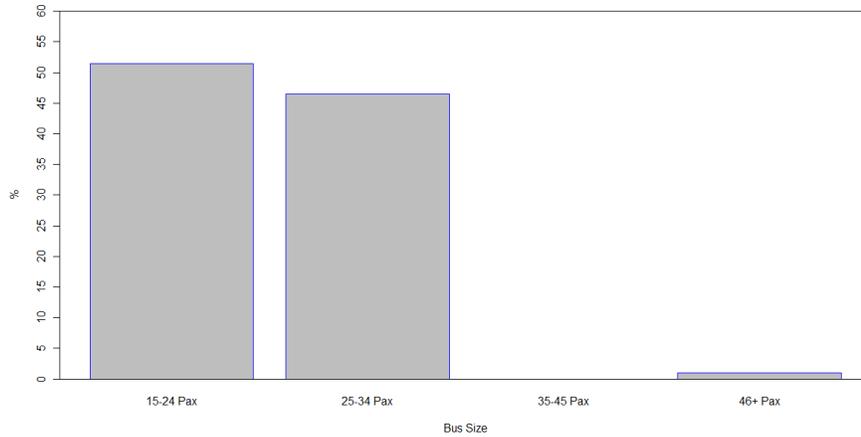
Moreover, buses were categorized into four groups basing on carrying capacity. The groups were; carrying capacity between 15-24 passengers, between 25-34 passengers, between 35-45 passengers and from 46 passengers and above; initial number of buses owned by were categorized into these groups.

The study showed that majority (51.5%) of owners entered the urban public transport business with minibuses with carrying capacity between 15-24 passengers. It was also found that very few (1%) owners joined the business with large capacity buses. Table 4 shows this fact.

**Table 5 Bus Capacity at Commencement of Business**

Bus Capacity	Frequency	Percent
15 – 24	51	51.5
25 – 34	46	46.5
35 – 45	0	0
46+	1	1

The profile of owners basing on vehicle capacity at the time of joining urban public transport business in Dar es Salaam city is depicted in Figure 3.



*Figure 3 Distribution of Buses by Size at the Time of Joining Business*

**(b) Fleet Size at the Time of Study**

At the time of study, operators who had one bus and two buses were 71.8% and 28.1% respectively. However, in order to establish the growth of urban public transport operators in Dar es Salaam city, the study compared fleet sizes between business commencement and time of study. Table 6 presents fleet sizes at these two time points.

**Table 6 Fleet Sizes at Business Commencement and Study Time**

Number of Buses	Fleet Size at Business Commencement	Fleet Size at the Time of Study
1	83(83.8%)	42(42.4%)
2	12(12.1%)	26(26.3%)
3	2(2%)	9(9.1%)
4	1(1%)	7(7.1)
5	0	5(5.1%)
6+	0	10(10.1%)

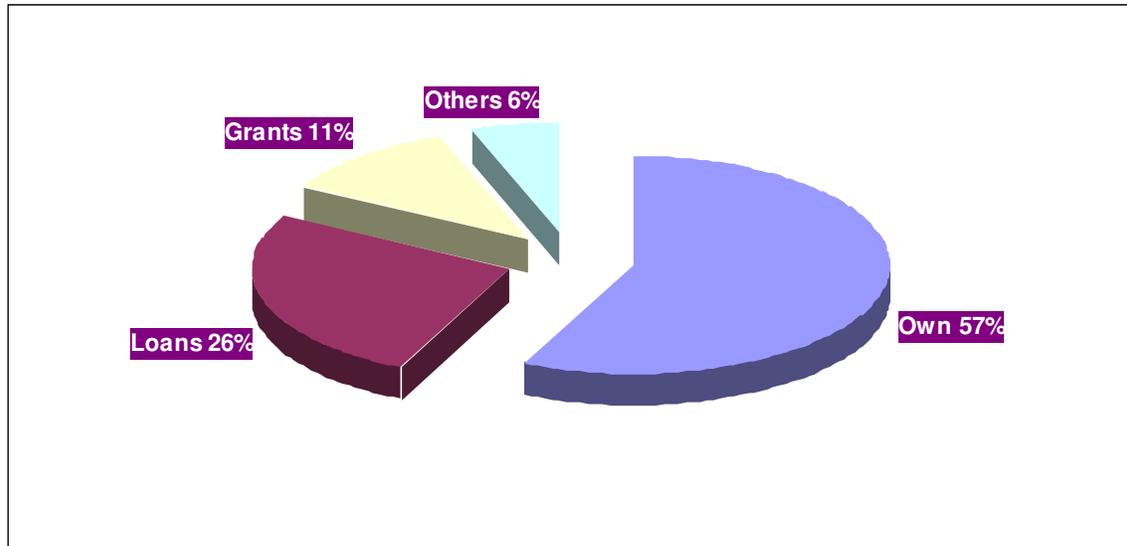
Table 6 shows a shift in fleet size from smaller to relatively bigger fleet sizes. The percent of owners with single fleet size decreased from 83.8% to 42.4%. At the time of study, owners with at least five buses and above were 15% while at the commencement of business none had such fleet. However, despite the increase in fleet size still majority of owners had one bus.

#### **4.1.4 Sources of Capital to Purchase Urban Buses**

In order to start urban public transport business one should have means of acquiring buses. The study established main sources of capital for financing urban transport business to be own funds, loans and grants.

The study showed that majority (61.6%) of bus operators depended on own funds. Loans and grants as sources of capital accounted for 28.3% and 12.1% respectively. Very few (6.1%) obtained capital from other sources such as family inheritance. Sources of capital to purchase urban buses are shown in Table 7 and pictorially illustrated in Figure 4.

Source	Frequency	Percent
Own Funds	61	61.62
Loans	28	28.28
Grants	12	12.12
Others	6	6.06



*Figure 4 Sources of Business Capital*

Dependency on own funds, as a source of financing urban transport business, is a serious constraint to ownership of large fleet sizes especially at the business entry point.

#### **4.1.5 Operators Revenue Collection**

##### **(a) Modes of Revenue Collection**

Modes of revenue collection by urban public transport operators were mainly established to be:

- (i) fixed daily target revenue; and
- (ii) total daily collected revenue.

The study revealed that majority (98%) of owners resorted to a fixed daily target revenue mode of revenue collection and only 2.0% used total daily collected revenue mode.

Similar findings were obtained from drivers of urban public transport buses whereby 97.2% reported to be employing a fixed daily target revenue mode of

revenue collection while 2.8% used a total daily collected revenue mode. Table 8 summarizes findings on mode of revenue collection.

**Table 8 Mode of Revenue Collection**

Mode of Revenue Collection	Owners Response		Drivers Response	
	Frequency	%	Frequency	%
Fixed daily target revenue	97	97.98	348	97.21
Total daily collected revenue	2	2.02	10	2.79

Prevalence of fixed daily target as a mode of revenue collection suggests the extent to which owners are detached from running of the business itself. The emphasis is put on ensuring a target sum is remitted/submitted

**(b) Levels of Revenue Collection**

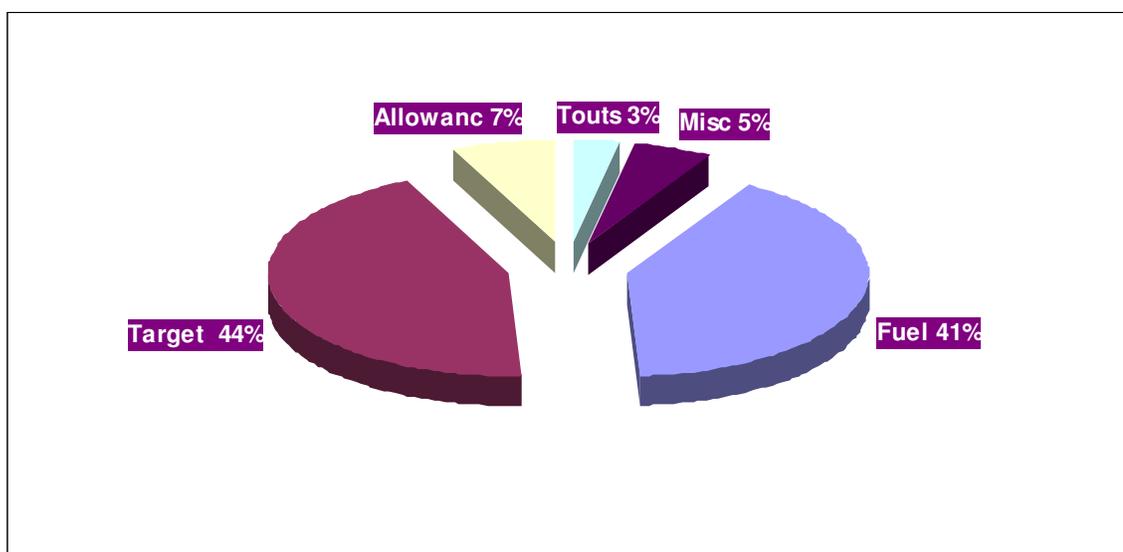
The study established levels of daily revenue collection in the urban public transport business. The levels were established basing on four bus capacities; namely;

- (i) 15-24 passengers;
- (ii) 25-34 passengers;
- (iii) 35-45 passengers; and
- (iv) 46 passengers and above.

Table 9 presents findings on daily levels of revenue collection. The daily collected amount has been broken down into fuel expenses, fixed daily target revenue, daily allowance to operatives, payments to touts and miscellaneous expenses.

**Table 9 Distribution of Daily Collected Revenue**

Collection & Expenses	Bus Capacity							
	15 – 24		25 - 34		35 - 45		46+	
	Amount	%	Amount	%	Amount	%	Amount	%
Fuel	45,000	42.6	70,000	40.9	85,000	42.2	122,300	48.7
Daily Target Revenue	40,000	37.9	75,000	43.9	90,000	44.7	100,000	39.8
Allowances	10,000	9.5	12,000	7.0	15,000	7.4	15,000	6.0
Touts	4,000	3.8	5,000	2.9	6,000	3.0	5,000	2.0
Misc(incl. Hidden Costs)	6,500	6.2	9,000	5.3	5,500	2.7	9,000	3.6
<b>Total Daily revenue</b>	<b>105,500</b>	<b>100</b>	<b>171,000</b>	<b>100</b>	<b>201,500</b>	<b>100</b>	<b>251,300</b>	<b>100</b>



*Figure 5 Distribution of Daily Revenues for bus with 25-34 Seating Capacity*

It was revealed that touts and miscellaneous expenses, when taken together, accounted for at least 6% in large capacity buses and 10% for smaller buses. Miscellaneous expenses were reported to carter mainly for informal payments made to law enforcers. These were unnecessary costs to operators and had a negative impact on the business. It impacted on rates, return on investment and enforcement of regulation.

**( c) Profitability of Urban Public Transport Business**

For urban transport business to be sustainable, funds generated from operations must be enough to cover running costs such as fuel, repair and maintenance, labor, various taxes as well as providing for vehicle replacement and reward (i.e. profit) to the owner.

The study investigated on the period required to recover the initial investment cost. Moreover, owners’ opinion on business profitability was obtained.

As far as pay back period is concerned, the study established that buses with carrying capacity between 15-24 passengers had an average pay back period of 2 years, while those with carrying capacity between 25-34 passengers required 3 years to break- even. Buses with carrying capacity of 46 passengers and above had a pay back period of 5 years. However, it should be noted that the sample of owners with buses of carrying capacity of 46 passengers and above passengers was too small to warrant reliable results. Table 10 indicates average pay back period for different sizes of buses.

**Table 10 Pay Back Period (in Years) for Various Bus Types**

Capacity	Median Pay Back Period	Mean Pay Back Period
15 – 24	2.0	2.4
25 - 34	3.0	2.7
35 - 45	.	.
46+	5.0	5.0

On business profitability, it was established that majority (71.43%) of bus owners ranked profitability of the business as moderate. The study further established the association between profit and supervision. In cases where owners had good supervision, the business was likely to generate profit. Interestingly, all operators who reported very good profit were having supervision mechanism in place.

Although quality of supervision was not within the scope of the study, it suffices to claim that good supervision yields profit. Table 11 shows business profit by supervision

**Table 11 Table of Profit by Supervision Status**

Profit		Supervision		Total
		Yes	No	
Very Good	Frequency	2	0	2
	%	100	0	
Good	Frequency	12	4	16
	%	75	25	
Moderate	Frequency	57	13	70
	%	81.43	18.57	
Bad (Loss)	Frequency	7	3	10
	%	70	30	
Total		78	20	98
		79.59	20.41	

In the preceding sections, owners have been profiled in terms of type of bus ownership, years of experience in the business, fleet size, sources of initial capital, average pay back period and average revenue collection.

The study revealed that majority of urban transport buses were owned by private individuals who had at utmost three buses. In terms of experience, majority had more or less two years of experience in the urban transport business. The study revealed that about two thirds of owners depended on their own sources of capital while only one third depended on loans.

On the revenue collection mode, the study revealed that almost all bus owners applied daily fixed target revenue collection mode. Besides, daily fixed targets remittances, it was established that drivers were responsible to ensure that revenue were over and above daily remittances in order to meet other operating costs and of course pay themselves. Efforts taken to discourage touts around bus stations have also not born fruits as the study has established that touts were paid over 3% of the total collection daily.

## **4.2 Relationship between Bus Owners and Crew**

### **4.2.1 Terms and Conditions of Employment**

In studying relationships in terms of terms and conditions of employment between bus owners and crew, the focus was on the following:

- (a) recruitment of drivers and conductors;
- (b) forms of employment;
- (c) remuneration and other Benefits;
- (d) operatives working hours;
- (e) route selection decision; and
- (f) supervision;

#### **4.2.1.1 Recruitment**

##### **(a) Bus Drivers**

In order to understand relationships between bus owners and drivers, the study looked into different ways in which drivers were recruited. The study categorized means of recruitment into four groups, namely: application, owners' head hunting, friends and relatives.

The study established that most (37.3%) drivers were recruited after being introduced to owners by friends. About 26.3% of drivers were recruited through owners' head hunting while recruitment of bus owners' relatives accounted for

6.2%, presumably, due to lack of accountability. Table 12 summarizes method of recruitment of drivers

**Table 12 Methods of Recruiting Drivers**

Recruitment Ways	Frequency	Percent
Drivers Applications	110	29.57
Owners Head hunt	98	26.43
Through Friends	139	37.37
Recruitment of Relatives	23	6.18
Other means	2	0.54
<b>Total</b>	<b>372</b>	<b>100</b>

Furthermore, the study established that the most prevalent relation between drivers and their owners were the employee – employer basis. This form of relationship accounted for 73% of established relationships. Other forms of relationships are shown in Table 13.

**Table 13 Relationship Between Bus Owners and Crew**

Relation Between Owner and Driver	Frequency	Percent
Employer – Employee	272	73.12
Blood/ Family	37	9.95
Friend	54	14.52
Others	9	2.42
<b>Total</b>	<b>372</b>	<b>100</b>

**(b) Bus Conductors**

With respect to recruitment of bus conductors, the study revealed that majority were recruited by drivers. Conductors recruited by drivers accounted for 89% while those recruited by bus owners were 11%. This implies that bus owners have minimal direct relationship with bus conductors reflecting dominancy of drivers as leaders in bus operations and the use of fixed target revue collection mode.

#### 4.2.1.2 Forms of Employment

The study looked at the terms and conditions of operatives' employment as they determine labor behavior. Operatives play an important role in the chain of provision of commuter transporter services. It is only when the bus is in motion that transport service (product) is produced for sale. It is the drivers and conductors who create the service for sale and therefore delivery of quality services is among others determined by satisfaction on the part of drivers and conductors.

While investigating the forms of employment for drivers, the following were identified, namely: permanent, contractual and daily basis. The ones employed on daily basis include *deiwaka* (day workers) who are employed on short term basis, of few hours, a day.

The study revealed that a common form of employment was daily employment which accounted for 73.24%. Contractual form of employment, longer than a day, accounted for 14.32%, while permanent employment represented 12.16%. This poses serious challenges on enforcement, regulation and supervision. Table 14 presents forms of drivers' employment

**Table 14 Categories of Employment for Operatives**

Forms of Employment	Frequency	Percent
Permanent Employment	45	12.16
Contractual Employment	53	14.32
Daily Employment	271	73.24
Others	1	0.27

#### 4.2.1.3 Remuneration

One of the objectives of the study was to determine remunerations for operatives with a view to explaining the operational behavior in the industry.

Three types of means of payments were identified. These included monthly salary, daily wages and surplus of daily target.

The study established that the dominant mode of remuneration was surplus of daily target which accounted for 67.64 %, daily wages accounted for 21.68% and monthly salary 10.68%. Table 15 presents findings on forms of drivers' remunerations

**Table 15 Forms of Drivers' Remunerations**

Payments	Frequency	Percent
Surplus of Daily Target	209	67.64
Daily Wages	67	21.68
Salary	33	10.68
Total	309	100

The fact that majority of drivers paid themselves through surplus of their daily target revenue explained disorders in the service provision. The study established that remuneration factor was the main motive behind route shortening, unauthorized route shifting, over speeding and reckless driving behaviors.

Table 16 shows the impact of remuneration on route shortening and shifting.

**Table 16 Reasons for Route Shortening and Shifting**

Reasons	Frequency	Percent
Not related to Remuneration	135	34.62
Related to Remuneration	255	65.38
Total	390	100

#### 4.2.1.4 Other Benefits

The study established the extent to which bus drivers were entitled to other benefits such as leave, medical, house rent allowances, training and other social security benefits. It was revealed that majority of drivers were not entitled to any of the above listed benefits. About 86% indicated that they were not entitled to any of the mentioned benefits. 11% of drivers were getting medical assistance from bus owners. Table 17 depicts forms of other employment benefits received by Drivers.

**Table 17 Forms of other Employment Benefits received by Drivers**

Benefits	Frequency	Percent
Leave	5	1.51
Training	2	0.60
Health	36	10.84
House rent	1	0.30
Others	2	0.60
None	285	85.84
Total	331	100

#### 4.2.1.5 Working Hours

Statutory working hours for employees by the time the study was conducted were eight (8) hours per day. The study investigated if drivers observed the stipulated working hours. The study revealed that the average working hours for the bus drivers was 16.02 hours. Majority (62.5%) of drivers started work at 0500 hours and closed at 2100 hours.

Regarding resting time between starting and closing time of work, 84.4% of drivers had no resting time.

On the other hand, drivers who had resting time (15.6%) indicated that the buses were being driven by temporary drivers known as *deiwaka* (day workers) while they rested. *Day worker* represented 81.48 % of the temporary engaged drivers during resting times. Less than half (41%) of drivers with resting time indicated to be parking buses during resting time.

Long working hours for drivers could be an attributing factor to common accidents by commuter buses due to tiresome and stress on the part of drivers.

### 4.3 Relationships Between Passengers and Operatives

With respect to relationships between passengers and operatives, the study focused on the following passengers' opinions:

- (a) language of operatives;
- (b) neatness of operatives;
- (c) the extent to which operatives observed bus carrying capacity;
- (d) the use of radio or music player in the bus;

Information on the above relationships was obtained from households' survey.

#### 4.3.1 Language of Operatives

The study revealed that most of the passengers were of the opinion that language used by operatives was not customer friendly. 81.9% of passengers rated operatives' language as poor or very poor. Only 18.1% of passengers rated the language as good. Behavior of operatives in terms of language used is shown in Table 18 below.

**Table 18 Rating of Operatives Language by Passengers**

Operative Language	Frequency	Percent
Very poor	211	23.14
Poor	536	58.77
Good	165	18.09

Incidences of abusive language were more pronounced during collection of fares, loading and disembarking of passengers.

#### 4.3.2 Neatness of Bus Crew

Majority of passengers thought that hygiene condition of bus crew was not satisfactory. The study revealed that 87.7% of passengers were not satisfied with neatness of bus crew particularly bus conductors. Table 19 depicts opinions of passengers regarding neatness of the operatives.

**Table 19 Passengers Opinions on Bus Crew Neatness**

Crew Neatness	Frequency	Percent
Very dirty	236	25.93
Dirty	562	61.76
Neat	112	12.31

The study established that dirtiness of operatives was one of the factors that made urban transport service unattractive and uncomfortable.

#### 4.3.3 Extent to Which Operatives Observed Bus Carrying Capacity

Study revealed that buses were overloaded particularly during peak hours. 93.1% of passengers thought that buses were highly overloaded while only 6.59% were of the opinion that buses were moderately loaded.

According to passengers, overloading of buses were leading to inadequate air circulation in the buses due to poor ventilation, pick-pocketing, sexual abuse among women and difficult traveling conditions for disadvantaged people.

Passengers' opinions on loading of commuter buses are shown in Table 20.

**Table 20 Passengers Opinion on bus loading**

Bus Loading	Frequency	Percent
Highly overloaded	848	93.08
Overloaded	60	6.59
Not overloaded	3	0.33

#### **4.3.4 The Use of Radio or Music Player in the Bus**

Apart from bad language and dirtiness of crew, noises from radio and music players was the third ranked nuisance onboard by passengers.

Playing music or radio on a high volume, apart from disturbing passengers lead to misunderstanding and therefore bad relationship between bus crew and passengers.

#### **4.4 Determination of the Preferred Mode of Operation for Urban Transport Business**

Among the objectives of the study was to determine perceptions of owners and operatives towards the preferred mode of operation for urban transport business. Moreover, the study sought to establish perceived advantages and disadvantages particularly for companies in running urban public transport.

##### **4.4.1 Perceptions of Bus Operatives on Preferred Mode of Operation**

The study established that slightly over half (51.21%) of drivers preferred companies to run urban transport system as opposed to individuals. Drivers who thought cooperatives were the appropriate entities to run public urban transport accounted for 10% and those who preferred individual operators to run public transport were 37%. Details on drivers' preferences on the mode of operations for urban transport system are shown in Table 21.

**Table 21 Drivers Opinions on the Preferred Mode of Operation**

Preferred mode of operation	Frequency	Percent
Companies	191	51.21
Individual operators	138	37.00
Cooperatives	39	10.46
Others	5	1.34

Those who chose companies to run urban transport business mentioned the following reasons to support their choice:

- (a) possibilities of securing employment contracts. This was mentioned by 53% of those who indicated companies as their preference;

- (b) entitlement to other employment benefits was cited by 37% of those who opted for companies; and.
- (c) operators' observance on business regulations and rules accounted for 11%.

Table 22 summarizes reasons given by drivers in favor of companies

**Table 22 Drivers' perceptions on advantages of companies**

Advantages	Frequency	Percent
Employment contracts	101	52.88
Employment benefits	70	36.65
Adherence to regulations	21	10.99

Generally, drivers were in favor of companies mainly due to possibilities of improved welfare in terms of security of employment and employment benefits.

#### 4.4.2 Views of Bus Owners on Preferred Mode of Operation

##### (a) Individual Bus Operators

On the part of operators, their views on the preferred mode of operation are shown in Table 23.

**Table 23 Owners' preference on modus operandi of urban transport**

Preferred Modus Operandi	Frequency	Percent
Individual operators	62	65
Companies	18	19
Cooperatives	15	16
Total	100	100

Majority (65%) preferred individuals to run transport business in the city. However, those who opted for companies cited the following reasons to support their choice:

- (i) accessibility to loans;

- (ii) possibilities of improved supervision;
- (iii) improved quality of service;
- (iv) possibilities of employing skilled operatives;
- (v) possibilities of having fair bus fares to meet operating costs

Table 24 shows reasons cited by bus owners' as potential advantages of moving into companies.

**Table 24 Owners' perceptions on advantages of forming companies**

advantages of companies	Frequency	Percent
Improvement in levels of service quality	12	12.12
Supervision	12	12.12
Accessibility to loans	8	8.08
Employing skilled operatives	6	6.06
Setting bus fares	6	6.05

Reasons cited as disadvantages of operating urban public transport under companies included:

- (a) possibilities of bus owners losing business;
- (b) possibilities of companies going bankrupt;
- (c) failure to manage funds;
- (d) reduced competition in the business; and
- (e) possibilities of abusing monopoly powers by restricting supply of buses

**Table 25 Disadvantages of forming companies - bus owners' perspective**

Disadvantage	Frequency	%
Owners losing business	19	19
Mismanagement of funds	12	12.12
Restriction on supply of buses	11	11
Companies going bankrupt	7	7
Reduced Competition	7	7

Information on transport management training was also collected in order to facilitate evaluation of operators' understanding on management of urban public

transport. Such information was also vital in understanding bus owners' perceptions towards the preferred modus operandi. Table 26 indicates owners' attendance to basic transport training.

**Table 26 Owners attendance to basic transport training**

Attendance to Basic Transport Management Training	Frequency	%
Attended	5	5
Not Attended	93	95

As Table 26 depicts, most of the bus owners lack basic knowledge on transport management and therefore one need to be careful in interpreting their choices and reasons cited for the preferred modus operandi. Moreover, as established earlier on, the average years of experience among bus owners, of 4 years do not warrant sound judgment on the appropriate modus operandi of the business.

**(b) Usafiri Dar es Salaam (UDA)**

Usafiri Dar es Salaam (UDA) cited advantages of operating urban transport under the companies to be proper allocation of buses into routes by taking into account demand. Furthermore, UDA cited training of operatives particularly in such fields as customer care and safety as among the advantages of operating urban transport under companies. In UDA's opinion, it is more likely that such trainings to employees can be conducted by companies rather than individual bus operators.

According to UDA, companies allocate buses to particular routes after conducting passenger movement surveys. Moreover, buses move in accordance with bus timetables. All these are possible if fleet size is big and coordinated under one roof.

UDA had an opinion that under individual transport operators it is not feasible to implement bus timetables because buses and owners are scattered all over with no coordination.

It is therefore, the responsibility of the Authority and other knowledgeable stakeholders to take the lead in determining the best mode of operation then accordingly carry out a vigorous sensitization campaign so that owners appreciate the advantages of the determined mode.

#### **4.5 Route Characteristics**

The focus of this section is on route characteristics and number of buses plying on each route. In establishing routes characteristics, the following were studied:

- (a) peak and off peak hours;
- (b) estimated number of passengers at bus stops;
- (c) travel time;
- (d) passenger waiting times;
- (e) bus waiting time;
- (f) size of urban buses;
- (g) factors influencing route choice;
- (h) number and types of bus stops; and
- (i) common challenges at bus stops

##### **4.5.1 Peak and Off Peak Hours**

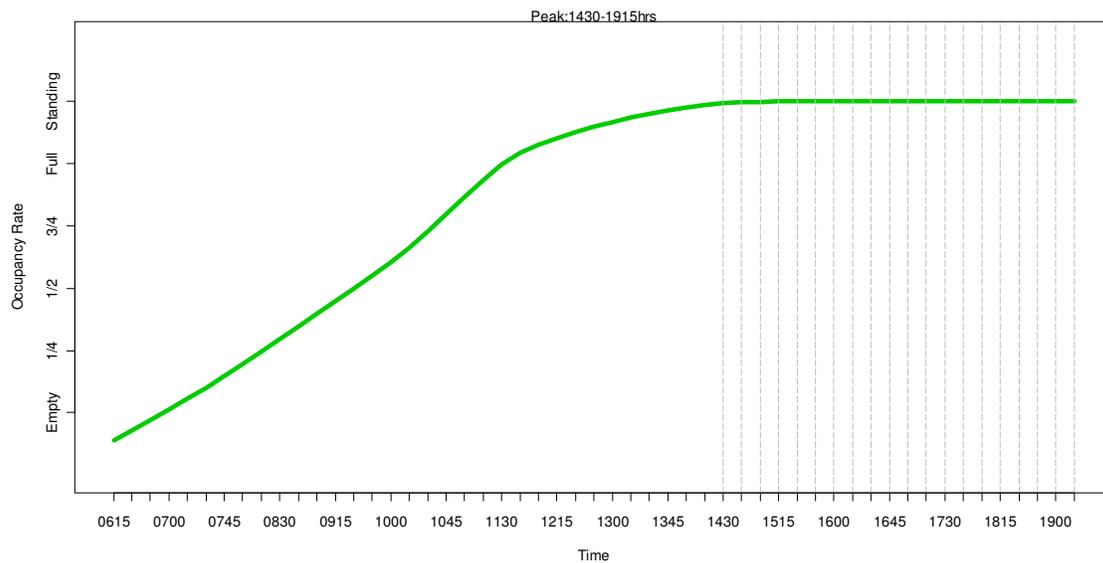
The study determined peak and off peak hours by assessing the number of passengers at various bus stops and estimating occupancy rate of buses leaving bus stops at different times. The two aspects were observed in bus stops serving Transport Central Business District (TCBD) and those serving outside TCBD. Bus stops along the borders of TCBD were also observed.

Surveys to establish peak and off peak hours was conducted from 0600 hours to 1900 hours.

For the purpose of this study, peak period was defined to mean the hours when observed bus occupancy rate was categorized as full and standing and off peak period to be the hours when bus occupancy rate was categorized as half full and below.

#### 4.5.2 Peak Hours at TCBD

The study established the pattern of occupancy rate at TCBD bus stops by observing whether buses were empty, quarterly full, half full, three quarter full, full or full and standing. The observed pattern is presented in Figure 6.



*Figure 6 Pattern of Occupancy Rate at TCBD Bus Stops*

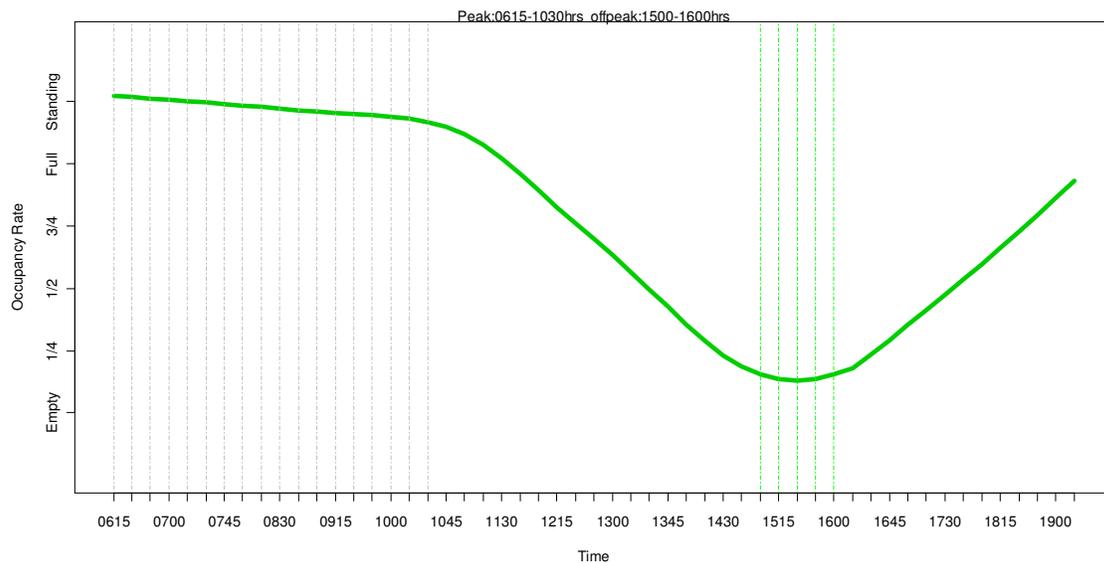
The study found that peak period in TCBD commenced effectively from 1430 hours and continued persistently until 1915 hours when observations were terminated. Off peak period at TCBD, when buses were half full or less, was observed to be between 0600 hours to 1000 hours.

The observed trend can be attributed to:

- (a) TCBD containing most of the government offices and socio-economic activities;
- (b) TCBD having fewer residents; and
- (c) Most residents of TCBD working within the same area.

### 4.5.3 Peak Hours outside TCBD

Figure 7 presents the pattern of bus occupancy rate as observed at bus stops outside TCBD.



*Figure 7 Pattern of Bus Occupancy Rate at Bus Stops Outside TCBD*

The study identified that peak period outside the TCBD was between 0600 hours to 1030 hours. Off peak period was noted to be between 1500 to 1600 hours.

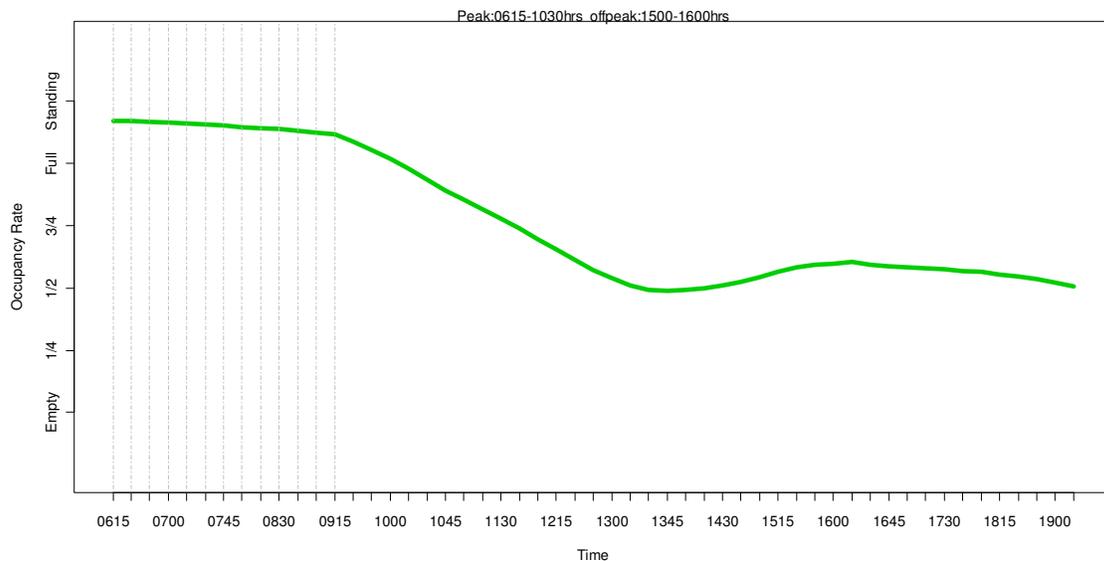
The observed trend is attributed to the fact that TCBD contains most of the government offices and socio-economic activities. Therefore majority of the people were going to TCBD where government offices and socio-economic activities are located.

#### 4.5.4 Peak Hours Along TCBD Border

The study further identified peak hours along the TCBD border. Figure 8 depicts the observed pattern of occupancy rate along the borders of TCBD.

Generally, the pattern of occupancy rate along TCBD border was observed to be influenced both by peak hour at TCBD and outside TCBD. However, clearly defined peak hours were observed in the morning between 0600 hours to 1030 hours. In the evening, higher occupancy rate were also observed though not to the extent of being qualified as peak hours.

The study further observed that routes along TCBD borders or those crossing TCBD did not exhibit off peak periods.



*Figure 8 Pattern of Occupancy Rate along TCBD Border*

The observed trend is due to the fact that TCBD borders are transitional areas between residential areas and working and economically active areas and therefore bus terminals have passengers all the time.

#### 4.5.5 Estimated Number of Passengers at Bus Terminals

The survey to estimate the number of passengers at various terminals bus stops was conducted at different times of the day. At each selected bus stop, estimations of number of passengers were taken after every 15 minutes starting from 0600 hours to 2000 hours. The intention of conducting such counts was to establish transport demand levels.

The counts were conducted separately for bus stops serving Transport Central Business District (TCBD) and those serving outside TCBD. Bus stops along the borders of TCBD were also involved in the counts.

#### 4.5.6 Estimated Number of Passengers at TCBD Terminals

The study established the pattern of number of passengers at TCBD terminals and observed the pattern presented in Figure 9.

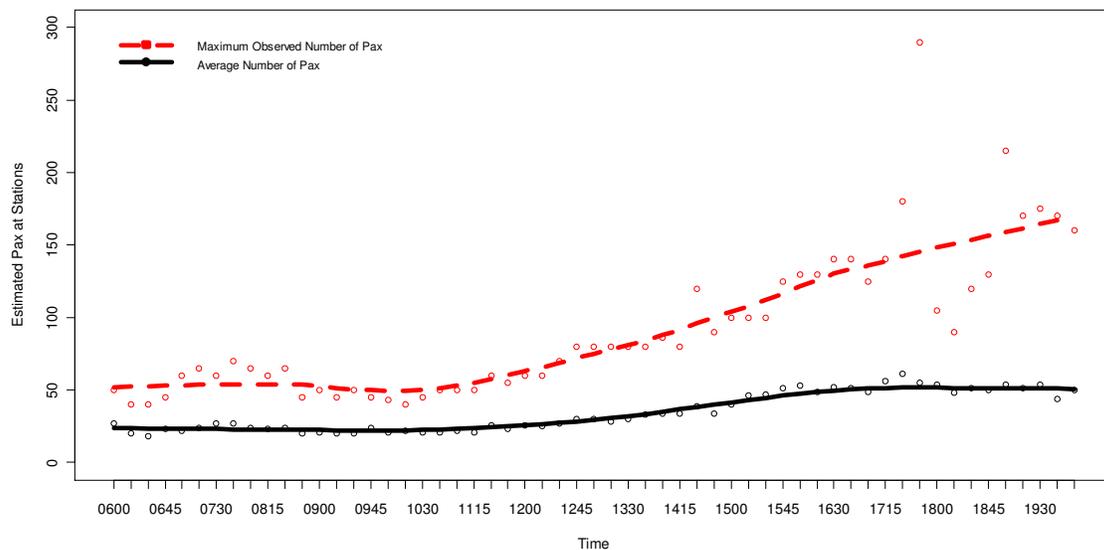


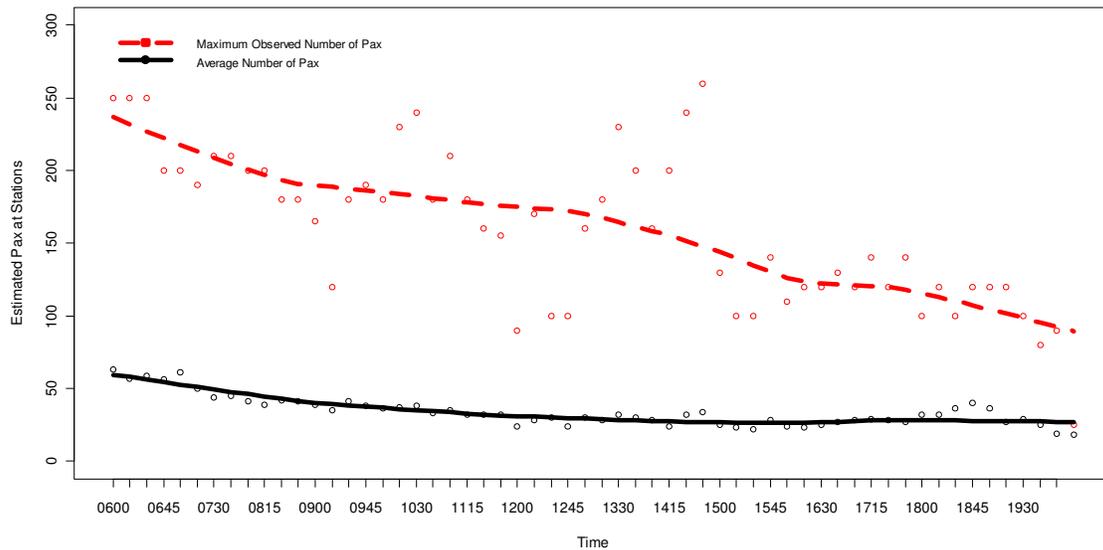
Figure 9 Pattern of Number of Passengers at TCBD

The study found that at TCBD terminals the number of passengers from 0600 hours to 1030 hours remained low at an average of 50 passengers. From 1030 hours to 1545 hours the number of passengers at bus stops was increasing at slower pace to around 100. From 1545 hours the bus stops were congested faster with passengers to the extent that at 1930 when observations were terminated the number of passengers stood at 160.

The established trend was attributed to most government offices and socio-economic activities closing from 1500 hours.

#### 4.5.7 Estimated Number of Passengers Outside TCBD

Figure 10 presents a trend of estimated number of passengers at bus terminals outside TCBD.



*Figure 10 Pattern of Estimated Number of Passengers Outside TCBD*

Looking at the trend of the estimated number of passengers at bus terminals outside TCBD, three segments can be identified. The first segment extends from 0600 hours to 0900 hours. The second segment runs from 0900 hours to 1630

hours. The third one starts from 1630 hours to 2015 hours when observations were terminated.

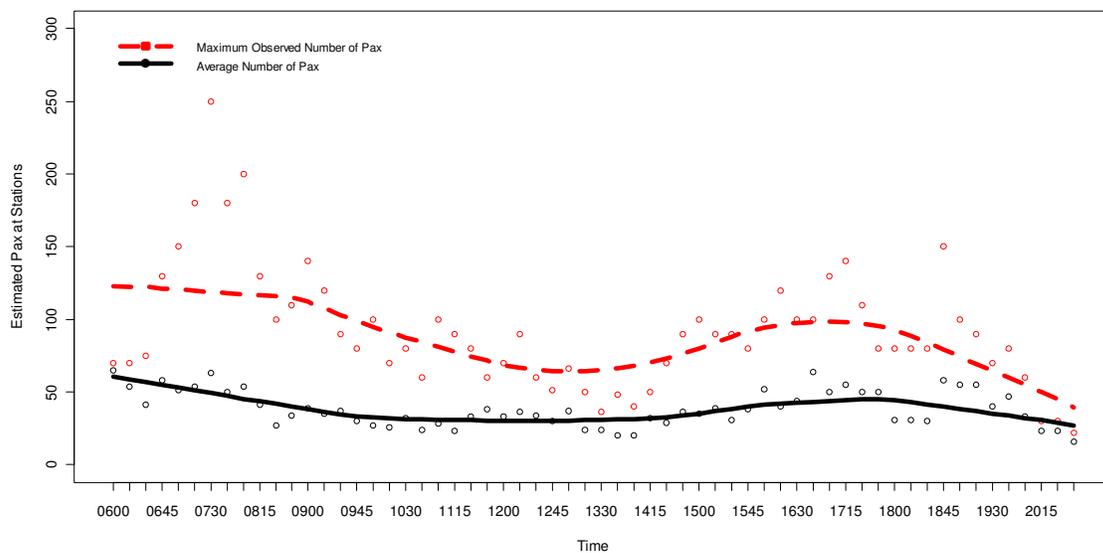
For the first segment the study established that number of estimated passengers at bus terminals stood around 250 at 0600 hours and declined consistently up to 180 passengers at 0900 hours. Generally, the first segment was characterized by passengers' congestion at bus terminals.

In the second segment, the estimated number of passengers was declining although at a slower pace from an average of 180 to 150 passengers.

The last segment was marked with a sharp decrease of estimated number of passengers at stations.

#### 4.5.8 Estimated Number of Passengers along the TCBD Border

Figure 11 presents the trend of estimated number of passengers at bus terminals along the border of TCBD.



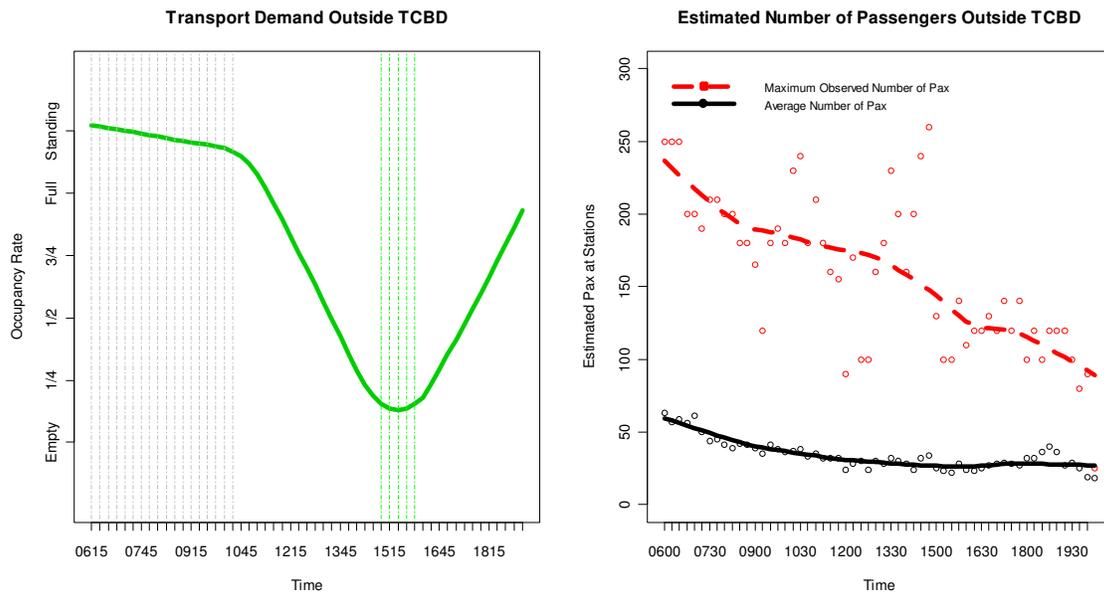
*Figure 11 Pattern of estimated number of passengers along TCBD Border*

The study noted that the trend of estimated number of passengers along the TCBD border terminals was influenced by both TCBD and outside TCBD trends. This situation resulted into having two peaks of estimated number of passengers per day, one in the morning around 0730 hours and the second in the evening around 1715 hours.

The estimated number of passengers at the morning peak was about 250 and in the evening peak was 140 passengers.

Between morning and evening peaks, a minimum number of passengers, which was around 50, were recorded at 1330 hours. After the evening peak, the number of estimated passengers kept on decreasing.

Of interest to note, is the negative association of transport demand from outside TCBD and the estimated number of passengers outside TCBD at late hours of the day as indicated in Figure 12.



*Figure 12 Transport Demand versus Number of Passengers outside TCBD*

While the number of passengers at terminals outside TCBD was decreasing in late hours of the day, the demand for transport services appeared to increase. The observed behavior could be explained by shortage of supply of buses due to traffic congestion, route shortening and shifting of buses to other lesser congested routes.

#### **4.5.9 Travel Time**

A survey was conducted to establish route travel time. This was achieved by researchers traveling by bus from one point to another on sampled routes and recording bus departure and arrival times at origin and destination. The established route travel time was inclusive of stoppage times at intermediate bus stops. The survey was conducted throughout the day from 0600 hours to 2000 hours.

The study established that the average travel time in Dar es Salaam urban routes was 61.7 minutes while the maximum recorded travel time was 226<sup>2</sup> minutes.

Furthermore, the study established mean travel time for each route category as depicted in Table 27. The shortest mean travel time was recorded in routes originating and terminating within TCBD. On the other hand the longest travel time was recorded on routes which had origin and destination outside the TCBD but passed through TCBD area.

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<sup>2</sup> The longest travel time was recorded on Posta –Mbezi route along Morogoro Road.

**Table 27 Travel Time (in Minutes) for Various Route Category in Dar**

Mean Travel Time	Mean	Minimum	Maximum
Within TCBD	43.55	18.00	115.00
Between Outside TCBD and TCBD	64.07	25.00	226.00
Through TCBD	92.16	56.00	132.00
Along TCBD Borders	71.08	42.00	119.00

#### 4.5.10 Waiting Times

A survey was conducted to establish both passenger and bus waiting times.

Waiting times were established by recording:

- (a) Researchers' arrival time at bus terminals;
- (b) Bus arrival time at bus terminals; and
- (c) Bus departure time at the terminal.

#### 4.5.11 Passenger Waiting Time

The study revealed that the average passenger waiting time in the city of Dar es Salaam was 18.44 minutes. The Mean passenger waiting times for different categories of bus terminals are shown in Table 28.

**Table 28 Mean Passenger Waiting Time (Minutes) at Bus Terminals**

Mean Passenger Waiting Time	Mean	Maximum
Bus Terminals Within CBD	18.85	157.00
Bus Terminals Outside CBD	17.03	89.00
Bus Terminals Along CBD Borders	19.85	122.00

The study established that passenger waiting times were more or less the same throughout bus terminals in the city. However, the highest passenger waiting time was observed at Bus terminals within TCBD at peak times.

#### 4.5.12 Bus Waiting Time

The study revealed that the average bus waiting time at terminals in the city of Dar es Salaam was 10.4 minutes.

#### 4.2.13 Size of Observed Urban Buses

A survey was conducted to establish the dominant type of buses serving urban transport routes. In that survey, a total of 2,466 buses were studied from a sample of routes plying within TCBD, between outside TCBD and TCBD, those crossing TCBD as well as along TCBD borders. It was established that dominant size of the buses was of carrying capacity between 25 and 34 passengers which accounted for 89.86%. It was further noted that buses with carrying capacity above 45 passengers accounted for marginal 3.41%.

The distribution of observed buses according to their sizes is shown in Table 29.

**Table 29 Distribution of observed Size of Buses**

Bus Carrying Capacity	Frequency	Percent
25-34	2216	89.86
35-45	166	6.73
46+	84	3.41

#### 4.5.14 Factors Influencing Route Choice

The study identified major factors influencing selection of routes after interviewing both drivers and owners. The identified factors were:

- (a) availability of passengers;
- (b) state of road infrastructure;
- (c) route length;
- (d) knowledge of the route;
- (e) congestion and proximity to owners' premises.

Other factors mentioned by owners included level of enforcement, bus carrying capacity and level of competition. Table 30 summarizes the findings.

**Table 30 Factors Influencing Route Choice**

Selection Factors	Drivers Responses	Owners Responses
Availability of Passengers	53.85	49.49
State of Infrastructure	26.41	47.47
Route length	21.79	13.13
Knowledge of the route	19.74	18.18
Road congestion	8.97	16.16
Proximity to Owners Premises	6.41	-

It is important to note that both drivers and owners agree on the two most important factors in the selection of routes that is, availability of passengers and state of road infrastructure. Moreover, the importance of knowledge of the route as a factor in selection process was equally appreciated by both.

#### 4.2.15 Common Challenges at Bus Stops – Users Perspective

The study identified challenges at bus stops with a view to assessing whether the existing bus stops were user friendly or not. The study identified common challenges as listed in Table 31

**Table 31 Common Challenges at Bus Stops**

Challenges	Frequency	Percent
Lack of sheds	645	70.41
Lack of Toilet facilities	395	43.12
Theft	386	42.14
Crowding of Passengers	328	35.81
Touts disturbance	22	2.4

Lack of sheds stood out as the most nagging factor among the identified challenges.

Further analysis revealed that common challenges at bus terminals were equally perceived between sexes. Table 32 through 35 show responses of interviewees in relation to common challenges at bus stops

**Table 32 Shed Needs by Sex**

Sex	Shed Needs		Total
	No	Yes	
Male (%)	15.10	35.89	50.98
Female (%)	14.33	34.57	48.91
Total (%)	29.54	70.46	100

**Table 33 Theft Challenge by Sex**

Sex	Theft Threat		Total
	No	Yes	
Male (%)	32.49	18.49	50.98
Female (%)	25.27	23.63	48.91
Total (%)	57.77	42.23	100

**Table 34 Crowding Challenge by Sex**

Sex	Crowding Challenge		Total
	No	Yes	
Male (%)	31.62	19.37	50.98
Female (%)	32.49	16.41	48.91
Total (%)	64.11	35.89	100

**Table 35 Toilets Needs by Sex**

Sex	Toilet Needs		Total
	No	Yes	
Male (%)	27.68	23.3	50.98
Female (%)	29.21	19.69	48.91
Total (%)	56.89	43.11	100

#### **4.2.16 Number and Types of Bus Stops**

On average the study established that urban buses stopped 14 times per trip. However, during off peak period it was observed that the number of stoppages at informal bus stops increased and in some instances went as higher as 9 informal stoppages enroute.

#### **4.6 Determination of Required Number of Buses in Different Routes**

The study determined the number of buses per route in order to provide guidance on the number of buses required per route. The numbers were estimated depending on the origin and destination in relation to TCBD.

Routes were divided into four main categories; namely:

- (a) routes that originate and terminate within TCBD;
- (b) routes that originate outside TCBD and terminate inside TCBD;
- (c) routes that run along TCBD border; and

- (d) routes originating outside TCBD, go through TCBD and eventually terminate outside TCBD.

#### **4.6.1 Assumptions in Determining Number of Buses per Route**

Several assumptions were made in arriving at an indicative number of buses per route category: these include;

- (a) in each route category, three categories of bus size were considered. The classes were; 25-34 passengers, 35-45 and 46-65;
- (b) passengers at origin and intermediate points were equally served;
- (c) buses departed at the origin half full to provide for passengers on intermediate stations;
- (d) turn round times established in the study were maintained;
- (e) passengers' arrival at bus stops were uniformly distributed within bus turn round time intervals;
- (f) buses arrival at terminals were uniformly distributed within bus turn round time intervals;
- (g) number of buses required to move passengers accumulated at origins within the turn round time intervals, is divided into two halves, to ensure bi-directional services;
- (h) a provision of 5% (of buses) was made to cater for vehicles which could be off the road due to various reasons (e.g. maintenance, unscheduled assignments); and
- (i) effective fleet management system was deployed to ensure proper movements of buses.

Given the assumptions, the following information was gathered from the surveyed routes, in order to estimate the number of buses in various routes:

- (a) duration/length of morning peak periods;
- (b) bus turn round time intervals during peak periods;
- (c) number of passengers at origins during turn round time intervals;

- (d) number of passengers moved from origins during turn round time intervals.

The number of required buses was therefore derived from the number of buses required to move an estimated number of passengers accumulated at the origins within turn round time interval recorded at peak periods. Indicative numbers of buses required to serve routes in various categories are indicated in Table 36.

**Table 36 Required Numbers of Buses per Route Category**

Route Type	Number of Required Buses		
	25-34	35-45	46-65
CBD – CBD	42	28	15
Out CBD – Inside CBD	131	88	48
Through CBD	98	66	36
Along CBD border	76	51	28

**(a) Indicative Number of Buses for TCBD Routes**

The study established that routes originating and terminating within TCBD required the following number of buses:

- in case buses with carrying capacity of 25 to 34 passengers were deployed, then 42 buses were required;
- in case buses with carrying capacity of 35 to 45 passengers were used then, 28 buses were needed to be licensed; or
- in case consideration was on buses with carrying capacity between 46 to 65 passengers, then 15 buses were needed

**(b) Indicative Number of Buses for Routes from Outside TCBD to TCBD**

Routes originating outside TCBD and terminating inside TCBD required the following number of buses:

- if buses in consideration were of carrying capacity between 25 – 34 passengers, then 131 need were deployed;

- if buses with carrying capacity between 35 –45 passengers were utilized, then 88 buses are required;
- likewise, if buses used were of carrying capacity between 46 and 48 then 67 buses, were needed to be in operation

**(c) Indicative Number of Buses for Routes Passing Through TCBD**

Routes originating outside TCBD and terminating within TCBD required the following number of buses:

- for buses of carrying capacity between 25 – 34 passengers, 98 buses were required;
- in case buses of carrying capacity between 35 –45 passengers were used, 66 buses were needed; or
- If buses used were of carrying capacity between 46 – 65 passengers, then 36 buses were to be deployed

Same interpretation applies for routes along TCB border, as indicated in Table 36.

It is interesting to note the impact of bus size on the number of buses required to meet existing demand. For instance, routes running from outside CBD to CBD, shown in Table 36, required 131 buses of 25-34 seating capacity whereas if buses of capacity of 45-65 passengers were deployed then only 48 were required.

Presentation of results in terms of route categories, as in Table 36, has an advantage of rendering results useful to practitioners by permitting generalizations of results. Results may be used as guidance in other existing routes which were not included in the study. Moreover, whenever new routes were formulated, figures in Table 36 may still be used as guidance on the number of required buses. The policy implication of these results is that in order to proportionally address public transport demands in the city then the number of buses in routes within Transport Central Business District, passing through TCBD and those going into TCBD, should be in the ratio of 1:2:3

However, one caveat must be acknowledged; the figures are mere averages. Therefore, care must be exercised in using them. One may need to conduct mini market surveys frequently to capture and update route specific features.

Table 37 presents specific results for routes which were included in the study. Presentation adopted in Table 37 addresses route specific requirement. Again, in case generalization is to be made, then care is required to ensure that results are imposed on routes with similar features to the ones in the study.

**Table 37 Required Number of Buses in Selected Study Routes**

<b>ORIGIN</b>	<b>DESTINATION</b>	<b>TRAVEL TIME (MIN)</b>	<b>REQUIRED NUMBER OF BUSES*</b>	<b>NUMBER OF BUSES OBSERVED</b>	<i><b>Demand Gap</b></i>
GONGOLAMBOTO	MSASANI	108.5	121	103	-18
GONGOLAMBOTO	KARIAKOO	47.5	133	107	-26
MABIBO	KARIAKOO	30.25	48	76	28
MBAGALA R3	KARIAKOO	61.5	152	212	60
MSASANI	KARIAKOO	32	36	55	19
TEGETA	KARIAKOO	123.5	137	151	14
MBURAHATI	KIVUKONI	47	25	33	8
TABATA SEGEREA	M/MMOJA	56.78	143	101	-42
M/MTONGANI	KAWWE	76.5	104	95	-9
GONGOLAMBOTO	POSTA	64.75	130	103	-27
KIMARA	POSTA	64.6	55	142	87
MASAKI	POSTA	41	41	23	-18
MBEZI	POSTA	92	133	69	-64
VINGUNGUTI	POSTA	53.6	27	81	54
UBUNGO	KIVUKONI	52	22	30	8
MBEZI	VINGUNGUTI	90	78	18	-60
			1385	1399	14

**NOTE \*** Required Number of Buses refers to buses of size between 25 to 34 passengers

Table 37 shows assessment of demand gap. The gap is established by comparing required number of buses with number of observed buses adjusted to (reflect) the size of carrying capacity between 25 and 34.

Over half of the studied routes appear to have more buses than required.

This is contrary to what is seen on the ground where passengers are overcrowded in buses suggesting short supply of buses. There could be several reasons to explain this situation; major ones being:

- (a) Poor fleet management to the extent that buses are crowded at one point and creating shortages in other places along the route;
- (b) congestion on city roads which impedes smooth flow of buses; and
- (c) Improper design of routes. As of 31<sup>st</sup> August, 2010 urban routes were estimated to be 422. Many routes may mean more geographical coverage but less frequency of services. This is the situation on the ground. However, having fewer routes, which are longer, means more service frequency with more geographical coverage; this should be the target.

## **5.0 CONCLUSION AND RECOMMENDATIONS**

### **5.1 Conclusion**

The study has established that deliberate measures are needed to improve urban public transport in Dar es Salaam City in order to meet user needs.

The study revealed that the urban transport in the city was still dominated by private individuals operators with used mini buses of carrying capacity between 25 and 34 passengers. Many bus owners had utmost three buses with little experience in the industry of an average of four years. It was revealed that bus owners lacked knowledge and skills in transport management. This attributed to high turn over rate as majority entered the industry as a means of survival instead of going concern. Majority had limited sources of capital such that they depended on personal financing. This negatively affected industrial growth because capital constrains limited their capacity to acquire quality, brand new and large buses.

Regarding mode of operation for urban public transport business, majority of drivers preferred companies or cooperatives to run the business. Drivers were of the opinion that companies could provide better package and working conditions. Moreover, companies could improve discipline and compliance of both drivers and owners with rules and regulations. Individual bus owners, however, were wary of letting the business run by companies or cooperatives. They feared companies or cooperatives could encourage monopoly, poor management and misappropriation of funds resulting into losses and bankruptcy.

Yet fewer bus owners were indicated that companies or cooperatives could provide access to bank loans, joint management skills, improve quality of services, enhance capacity building and achieve sustainable fare schemes in the urban public transport business.

In relation to these perceptions, the study established that almost all of the interviewed bus owners did not have formal training in transport management and also lacked experience. These could affect understanding of the pros and cons of deploying companies and cooperatives to run urban public transport. Moreover, to a larger extent, majority of the opinions against formation of companies were fears demonstrating lack of training and exposure on better ways of running transport business.

Furthermore, the study revealed that although most drivers were engaged on daily contracts still maintained employer – employee relationship. The overriding condition for the contract was meeting of the daily revenue targets.

In terms of remuneration drivers were not paid salaries and other benefits such as medical, house allowances and training. The study established that they paid themselves on the surplus after covering the operating costs such as buying fuel, paying touts and the daily owners' remittance targets.

Bus conductors were engaged by drivers because owners were interested in daily targets and therefore paid little attention to how bus conductors were employed. The study associated this to factors attributing to high drivers turn over especially when they failed to meet the targets. Moreover, lack of involvement of bus owners in engaging bus conductors pointed to the emphasis put on financial returns and neglecting customer care. Any customer oriented owner would be concerned with engagement of a person who deals with customers in the business

The study also revealed that non compliance of rules and regulations and demonstration of irresponsible behaviors such as reckless driving, route shortening, and illegal route shifting, overloading and students' harassments were attributed to struggles to accomplish targets.

Majority of the interviewed passengers expressed their feeling on dissatisfaction with commuter transport services in Dar es Salaam due to misconducts of bus crew. Misconducts reported included: conductors' abusive language, poor hygiene condition of buses, dirtiness of crew uniforms, overloading of buses during peak hours and music and radio noises due to high tuned volumes. It was reported that bus overloading during peak hours led to sexual abuse among women.

Regarding urban public transport business profitability, the study established that owners with good supervision were getting good returns and therefore managed to recover investment costs in two to three years for mini buses while large buses took five years.

In route selection, both drivers and bus owners were involved. It was revealed that criteria used in route selection, among others, included: demand status (availability of passengers), state of road infrastructure, route length, proximity to owners' premises and owners/crew operational experience in the route.

## **5.2 Recommendations**

Deliberate measures are needed to address public transport problems in the city of Dar es Salaam by ensuring that all key stakeholders play their role effectively. Apart from SUMATRA's regulatory duty, other key stakeholders such as TANROADS, City Council and Municipals as well as the Traffic Police have vital role in reducing travel time and conditions of bus stops. Increased travel time mainly caused by congestion affects tremendously fleet utilization.

On the other hand, dominance of unprofessional and inexperienced individual operators with inadequate capital in the provision of urban public transport services has a serious negative impact on the industrial growth. Daily employment system propagates workers who do not think in long term and

therefore care less about customers. This leads to poor services, increased non compliance and generally consumers' dissatisfaction.

Generally, the current modus operandi poses difficulties in regulation and enforcement as opposed to the use of companies, which if properly deployed would lead to:

- a) Effective and coordinated fleet management system;
- b) business entities which are not only sound financially but also creditworthy;
- c) business entities capable of purchase large capacity buses;
- d) establishment of demand patterns through ticketing system;
- e) allocation of buses in accordance with passenger demand;
- f) improved crew welfare;
- g) implementation of bus time tables;
- h) reliable services;
- i) timely market passenger surveys; and
- j) improved law enforcement and regulation

**The study therefore recommends that:**

- a) the mode of operation of urban public transport business in Dar es Salaam city be in form of companies or cooperatives;
- b) provision of Urban Public Transport in Dar es Salaam be tendered to qualified financially and competent companies and cooperatives;
- c) a study to determine number of companies, conditions and rules of engagement whether zonal or route based be undertaken. The study should focus on re-examining current routes to establish the balance between trunk – feeder routes in Dar es Salaam city to facilitate tendering process;
- d) conduct Change management process to current individual operators;

- e) an effective sensitization programme be devised to assist individual operators and operatives to shed away misconceptions on advantages and disadvantages of using companies and cooperatives;
- f) efforts to discourage touts, who apart from adding on operating costs harass passengers, be intensified;
- g) city and Municipal Councils should improve conditions of roads and expand road network in order to ease congestion and facilitate urban transport business;
- h) in order to proportionally address users demand of transport services, the number of buses in various routes should be revised such that buses plying in routes within Transport Central Business District (TCBD), passing through TCBD and going into TCBD, are in the ratio of 1:2:3
- i) SUMATRA in collaboration with city authorities should conduct intensive passenger market survey once after every two years to determine demand of urban passenger transport taking into account city growth and land use;
- j) SUMATRA in collaboration with training institutions, preferably NIT, and DARCOBOA to devise a training program on customer care for bus crew to facilitate change of attitude towards passengers'
- k) City Authorities in collaboration with other stakeholders such as municipals and TANROADS revisit number, placement and size of bus terminals and stops;
- l) City Authorities in collaboration with other stakeholders such as municipals and TANROADS to provide sheds and toilets at bus terminals. Intermediate bus stops should also be provided with sheds;
- m) Police Force to continue with improving enforcement of law and order especially on road traffic regulations and providing security at bus terminals;

n) SUMATRA, in collaboration with City Council, municipals, TANROADS and Police Force to form a steering committee to provide guidance on route design and bus allocations

## 6.0 REFERENCE

- [1.] Dar es Salaam City Council. Dar es salaam City Profile. 2004
- [2.] DART Agency establishment Order GN 120, 2007
- [3.] Howe J, Bryceson D [Cited 2010 September 3]. Poverty and Urban Transport in East Africa – 2000. Available from URL: [http://www.siteresources.worldbank.org/INTURBANTRANSPORT/Resources/poverty&ut\\_eafrica.pdf](http://www.siteresources.worldbank.org/INTURBANTRANSPORT/Resources/poverty&ut_eafrica.pdf)
- [4.] Japan International Corporation Agency. DSM Transport Policy & System Development, Master Plan - Survey and Analysis. 2008.
- [5.] Kombe W, Kyessi A, Lupala J, Mgonja, E. Partnership to Improve Access and Quality of Public Transport. A case Report: Dar es Salaam, Tanzania. 2003
- [6.] Kumar A, Barret F. [Cited 2010 September 3]. Stuck in Traffic Urban Transport in Africa – 2008. Available from URL: <http://www.eu-africa-infrastructure-tf.ne> .
- [7.] Kumar A, Barret F. [Cited 2010 September 3]. Public Transport in Dar es Salaam – 2004; Available from URL: [http://URL:www.fri.se/upload/framsyn/05/for-memo-1123\\_tanzania.pdf](http://URL:www.fri.se/upload/framsyn/05/for-memo-1123_tanzania.pdf) .
- [8.] Local Government Act, 1982/2002
- [9.] Lupala, J Urban Types in Rapidly Urbanizing Cities: Analysis of Formal and Informal Settlements in Dar es Salaam, Tanzania. 2002
- [10.] Ministry of Infrastructure Development. National Transport Policy. 2003
- [11.] National Bureau of Statistics. Dar es Salaam Regional and Districts Projections Volume XII. 2006
- [12.] Road Act, 2007
- [13.] Road Traffic Act, 1973
- [14.] SUMATRA Act, 2001
- [15.] Tanzania Bureau of Standards, 1975
- [16.] Transport Licensing Act, 1973
- [17.] Wikitravel. [Cited 2010 September 17]. Dar es Salaam Travel Guide. URL: <http://www.wikitravel.org/en/dar-es-salaam> .

# SUMATRA

For Competitive, Efficient, Quality and Safe Transport Services

Surface and Marine Transport Regulatory Authority  
Mamlaka ya Udhhibiti Usafiri wa Nchi Kavu na Majini

## DODOSO (A)

### DODOSO KWA AJILI YA WANAKAYA

Dodoso Na:

Siku ya Mahojiano

<i>Tarehe</i>	<i>Mwezi</i>	<i>Mwaka</i>
		2010

Jina la Mdodosaji: .....

1. Jina la Mtaa: .....

2. Jina la Kata : .....

3. Jina la Wilaya

- Temeke  
 Kinondoni  
 Ilala

4. Nafasi ya mhojiwa katika kaya:

- Mkuu wa Kaya  
 Mwingine

5. Jinsia ya Mhojiwa:

- Mwanamme  
 Mwanamke

6. Kazi ya mhojiwa
- Muajiriwa
  - Mfanyabiashara
  - Mkulima
  - Mwanafunzi
  - Nyingineyo. Taja.....

7. Idadi ya watu katika kaya

8. Je ni njia gani ya usafiri ambayo huitumia mara kwa mara?

- Kutembea
- Baiskeli
- Daladala
- Gari binafsi
- Teksi
- Bajaj
- Pikipiki
- Njia Nyinginezo. Zitaje .....

9. Kama hutumia njia nyinginezo za usafiri zaidi ya daladala toa sababu ?

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.....

10. Je usafiri wa daladala huutumia wakati wa kwenda wapi?

- Kwenda sehemu ya ajira
- Kwenda sehemu ya biashara
- Kwenda Shule
- Kwenda katika burudani
- Kutembelea familia
- Nyinginezo. Taja.....

11. Je ni muda gani hufika katika kituo cha kupandia daladala wakati utokapo nyumbani ?

- Kabla ya saa 12 asubuhi
- Kabla ya saa 1 asubuhi
- Kabla ya saa 2 asubuhi
- Kati ya saa 2 asubuhi na saa nne asubuhi
- Muda mwingine

12. Je ni muda gani hufika katika kituo cha kupandia daladala wakati wa kurudi nyumbani?

- Kati ya saa nane na saa tisa alasiri
- Kati ya saa tisa na saa Kumi jioni
- Kati ya saa kumi na saa kumi na mbili jioni
- Kati ya saa kumi na mbili na saa mbili usiku
- Muda mwingine

13. Je ni kituo gani cha kwanza cha daladala ambacho huanzia mara kwa mara ?

14. Je ni kituo gani cha mwisho cha daladala ambacho hushukia mara kwa mara ?

15. Je unapanda daladala mara ngapi katika juma moja?

- Kila siku
- Jumatatu hadi Ijumaa
- Jumamosi na Jumapili
- Mara chache.

16. Ikiwa hutumia daladala mara kwa mara je unapanda mara ngapi kwa siku?

17. Je unasubiri daladala kwa muda gani katika kituo cha kwanza wakati utokapo nyumbani ?

- Pungufu ya dakika 5
- Kati ya dakika 5-10
- Kati ya dakika 10-15
- Kati ya dakika 15 hadi 30
- Zaidi ya dakika 30

18. Je unasubiri daladala kwa muda gani katika kituo cha kwanza wakati wa kurudi?

- Pungufu ya dakika 5
- Kati ya dakika 5-10
- Kati ya dakika 10-15
- Kati ya dakika 15 hadi 30
- Zaidi ya dakika 30

19. Je unapanda daladala ngapi ili kufika kituo chako cha mwisho unachoshuka mara kwa mara?

- daladala moja
- daladala mbili
- daladala tatu
- daladala zaidi ya tatu

20. Kama unapanda daladala zaidi ya moja , unafikiri ni kwa sababu gani?

.....

.....

.....

.....

21. Je mara ngapi unapata kiti katika daladala wakati utokapo nyumbani ?

Kila safari

Mara chache

Sipati kabisa

22. Je mara ngapi unapata kiti katika daladala wakati wa kurudi nyumbani?

Kila safari

Mara chache

Sipati kabisa

23. Je unatumia **dakika** ngapi kusafiri kutoka kituo cha kwanza hadi kituo cha mwisho unachoshuka mara kwa mara utokapo nyumbani?

24. Je unatumia **dakika** ngapi kusafiri kutoka kituo cha kwanza hadi kituo cha mwisho unachoshuka mara kwa mara wakati wa kurudi nyumbani?

25. Je unafikiri nini kifanyike kupunguza muda wa safari kwa daladala hadi kituo chako cha mwisho utokapo nyumbani?

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.....  
.....

26. Je unafikiri nini kifanyike kupunguza muda wa safari kwa daladala hadi kituo chako cha mwisho wakati wa kurudi nyumbani?

.....  
.....  
.....

27. Je unatumia wastani wa shilingi ngapi kwa usafiri wa daladala kwa siku?

28. Ni huduma gani muhimu zinazokosekana katika eneo lako ambazo hulazimika kuzifuata kwa kupanda daladala?

.....  
.....

29. Je ni nini maoni yako kuhusu usafiri wa daladala katika njia unazotumia mara kwa mara katika yafuatayo ? :-

**(i) Ujaaji wa watu**

Watu wanajaa sana

Wastani

Hawajai

**(ii) Lugha ya dereva na kondakta**

Mbaya sana

Mbaya

Nzuri

**(iii) Usafi wa dereva na kondakta**

Wachafu sana

Wachafu

Wasafi

**(iii) Uhakika wa usafiri**

Usafiri ni wa uhakika

Usafiri sio wa uhakika

Usafiri si wa uhakika kabisa

**(iv) Viti vya daladala**

Vimechakaa

vimebanana

ni vya kawaida

**(iv) Muonekano wa daladala**

- Mchakavu
- Kawaida
- Mzuri

30. Katika yafuatayo ni mambo yapi **mawili** ambayo yana punguza zaidi faraja **katika kituo cha daladala** ?

- Kukosekana kwa vibanda vya kujikinga na mvua au jua
- Wizi kwenye vituo
- Msongamano wa watu kwenye vituo
- Kukosekana kwa vyoo na maji katika vituo vikuu
- Mengineyo. Taja.....

31. Iwapo huduma za daladala zitaboreshwa kama vile kuwekwa viyoyozi, kutokusimamisha abiria na kusimama vituo maalumu tu sambamba na usafiri uliopo, je kiasi gani cha nauli utakuwa tayari kulipa ?

32. Je katika njia upitazo mara kwa mara ni njia gani ambayo unapata shida zaidi kupata dadadala ?

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.....

.....

33. Je unafikiri ni kwanini kuna ugumu wa kupata daladala katika njia hiyo?

- Daladala hazitoshelezi mahitaji
  - Barabara mbovu
  - Nyinginezo. Taja .....
- .....
- .....

34. **Kituo** gani ambacho unaona ni vigumu zaidi kupata usafiri wa Daladala katika njia upitazo mara kwa mara

.....  
.....

35. Je unafikiri ni kwanini kuna ugumu wa kupata daladala katika kituo ulichokitaja?

- Hakuna huduma kabisa
- Daladala hazitoshelezi mahitaji ya Huduma
- Hakuna barabara inayounganisha
- Nyinginezo Taja.....

.....  
.....

36. Ni njia gani ya daladala ambayo unasafiri kwa urahisi zaidi?

(taja kituo unachopandia na unachoshukia katika njia hiyo)

(a) Kituo cha kupandia .....

(b) Kituo cha Kushukia .....

37. Je unafikiri ni kwa nini unasafiri kwa urahisi zaidi katika njia uliyoitaja?

(a) .....

(b) .....

(c) .....

38. Taja mambo **matatu** yanayokukera uwapo ndani ya Daladala

(a) .....

(b) .....

(c) .....

## THE UNITED REPUBLIC OF TANZANIA



For Competitive, Efficient, Quality and Safe Transport Services

Surface and Marine Transport Regulatory Authority  
Mamlaka ya Udhibiti Usafiri wa Nchi Kavu na Majini**Kumb Na.:** HA 146/279/01**Tarehe:** 06 Mei, 2010

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 .....  
 .....

**YAH:UTAFITI KUHUSU USAFIRI WA UMMA KATIKA JIJI LA DAR-ES- SALAAM**

Tafadhali rejea somo lililotajwa hapo juu.

Mamlaka ya Udhibiti Usafiri Nchi Kavu na Majini (SUMATRA) inafanya utafiti kuhusu Usafiri wa Umma katika Jiji la Dar-es- Salaam. Huduma za Usafiri wa Umma katika Jiji la Dar-es- Salaam kama ilivyo katika miji mingine zinatolewa na mtu mmoja mmoja.

Mahitaji na ubora wa huduma kwa kiwango kikubwa hayakidhi matarajio ya wananchi. Mahitaji ya huduma za usafiri wa umma yamekuwa yakiongezeka kutokana na kuongezeka kwa idadi ya watu na kupanuka kwa Jiji. Kwa hiyo, moja ya changamoto katika usafiri wa umma ni kukidhi mahitaji ya usafiri yanayosababishwa na sababu zilizotajwa hapo juu.

Madhumuni ya Utafiti ni pamoja na:

- Kutathmini mahitaji halisi ya mabasi yanayotakiwa kukidhi usafiri wa umma Jijini;
- Kutathmini uendeshaji wa huduma za usafiri wa umma Jijini;
- Kutathmini njia za mabasi (routes) zilizopo na mahitaji yake;
- Kutathmini mahusiano yaliopo kati ya mwenye basi na wafanyakazi wake (dereva na kondakta).
- Kutathmini mahusiano kati ya abiria na dereva/kondakta.

Katika kufanya utafiti SUMATRA itawatumia watafiti ambao watakusanya taarifa na takwimu kutoka kwa wadau mbali mbali. Taarifa zitakazokusanywa katika Utafiti huu zitatumika kwa malengo yaliyokusudiwa tu na si vingenevyo. Tunaomba ushirikiano wako ili tuweze kufanikisha zoezi hili muhimu kwa wakazi wa Jiji na Uchumi wa Taifa kwa ujumla.

Tunatanguliza shukrani zetu za dhati kwa kufanikisha zoezi hili.

Wako katika ujenzi wa Taifa.

**Mamlaka ya Udhibiti Usafiri Nchi Kavu na Majini**

I.Z. Sekirasa

**MKURUGENZI MKUU**

## Number of interviews by Districts

DISTRICTS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Temeke	275	29.95	274	29.95
Kinondoni	321	35.08	595	65.03
Ilala	320	34.97	916	100.00

## Number of interviews by Wards

WARDS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Mbagala	93	9.96	91	9.96
Segerea	128	14.00	219	23.96
Tandika	93	10.18	312	34.14
Kimara	110	12.04	422	46.17
Kunduchi	110	12.04	532	58.21
Vingunguti	91	9.96	623	68.16
Ukonga	98	10.72	721	78.88
Msasani	101	11.05	822	89.93
Azimio	92	10.07	916	100.00

## Number of interviews by Streets

<b>STREETS</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
<b>Kizinga</b>	51	5.58	51	5.58
<b>Kimanga</b>	49	5.36	100	10.94
<b>Mbagala</b>	43	4.38	140	15.32
<b>Tandika</b>	43	4.70	183	20.02
<b>Baruti</b>	61	6.67	244	26.70
<b>Tegeta</b>	50	5.47	294	32.17
<b>Mtambani</b>	42	4.60	336	36.76
<b>Mtongani (Kinondoni)</b>	60	6.56	396	43.33
<b>Kimara Baruti</b>	49	5.36	445	48.69
<b>Mazizini</b>	50	5.47	495	54.16
<b>Miembeni</b>	49	5.36	544	59.52
<b>G/Mboto</b>	46	5.03	590	64.55
<b>Segerea</b>	80	8.75	670	73.30
<b>Mikoroshini</b>	50	5.47	720	78.77
<b>Mtongani (Temeke)</b>	54	5.91	774	84.68
<b>Tamla</b>	50	5.47	824	90.15
<b>Mji mpya</b>	38	4.16	862	94.31
<b>Bonde la Mpunga</b>	51	5.58	916	99.89

## LIST OF SAMPLED ROUTES

GONGOLAMBOTO	-	MSASANI
GONGOLAMBOTO	-	KARIAKOO
KIMARA	-	KARIAKOO
MABIBO	-	KARIAKOO
MBAGALA R3	-	KARIAKOO
MSASANI	-	KARIAKOO
MWENGE	-	KARIAKOO
TEGETA	-	KARIAKOO
MBURAHATI	-	KIVUKONI
MWANANYAMALA	-	KIVUKONI
MBAGALA R3	-	MUHIMBILI
TABATA SEGEREA	-	M/MMOJA
M/MTONGANI	-	KAWA
MBAGALA R3	-	MWENGE
GONGOLAMBOTO	-	POSTA
KIMARA	-	POSTA
MASAKI	-	POSTA
MBEZI	-	POSTA
VINGUNGUTI	-	POSTA
GONGOLAMBOTO	-	UBUNGO
UBUNGO	-	KIVUKONI
MBEZI	-	VINGUNGUTI