ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF DEVELOPMENT STUDIES

OPPORTUNITIES AND CHALLENGES OF URBAN PUBLIC TRANSPORTATION SYSTEM IN THE CASE OF ANBESSA CITY BUS SERVICE ENTERPRISE IN ADDIS ABABA

BY – MULUGETA GIRMA

JULY, 2011
ADDIS ABABA

Addis Ababa University
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SCHOOL OF GRADUATE STUDIES
INSTITUTE OF URBAN DEVELOPMENT AND MANAGMENT

Opportunities and Challenges of Urban Public Transportation System in the case of Anbessa City Bus Service Enterprise in Addis Ababa

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A Thesis Submitted to Addis Ababa University, College of Development Studies, Department of Urban Development and Management, in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Urban Development and Management

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ACKNOWLEDGEMENTS

There are many people who have contributed to the success of this study. Firstly, I would like to express my deep gratitude to my Advisor Dr. Issac Paul for his constructive comments, which have played an important role in my professional career development.

My special thanks to all lecturers and staff of Urban Development and Management centers of RLDS for sharing their knowledge and support during my study in Addis Ababa University.

Many thanks go to the staff of Anbessa city bus service enterprise and Addis Ababa Transport Authority for their assistance in data collection. .I am also grateful to my research assistants who have been working hard in collecting data.

Last but not least, I am greatly indebted to my parents, relatives and friends for the patience, love, concern, support and inspirations for my study and towards the attainment of my endeavors.

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LIST OF ACRONYMS

AATA : Addis Ababa Transport Authority

ACBSE : Addis Ababa City Bus Service Enterprise

BRT : Bus Rapid Transit

CSA : Central Statistical Authority

ERA : Ethiopian Road Authority

FGD : Focus Group Discussion

GNP : Growth National Product

GTZ : German Agency for Technical Cooperation

LRT : Light Rail Transit

MT : Motorized Transport

NMT : Non Motorized Transport

PTC : Public Transportation Corporation

SPSS : Statistical Package for Social Science

WB : World Bank

WHO : World Health Organization

ABSTRACT

This study accesses the opportunities and challenges of urban public transportation system in the case of Anbessa city buses in Addis Ababa .The study was conducted on ACBSE since it is the only public transport service provider with a specific route of travel and governed by the state.The study has followed a case study approach so as to get detailed and diverse information on the enterprise. Both primary and secondary sources were used in gathering data for the study. Sources of primary data includes Questionnaire for Anbessa city buses users , Semi-structured interview with officials of ACBSE and AATA , Focus Group Discussion and personal observation .Secondary data sources were published and unpublished materials, journals, articles and bulletin prepared by ACBSE and other concerned bodies. Besides the study employed systematic and random sampling methods to select the number of routes and sample respondents (users) from each selected routes , respectively . Purposive sampling was also used to select key informants for discussion while conducting interview and FGD .The study results indicate that role conflict in the enterprise, disposal of scrap vehicles and obsolete spare parts, high staff turnover , low fleet reliability , poor infrastructure and facilities , lack of public transport policy , lack of appropriate regulation and enforcement ,over loading of buses beyond its capacity and long duration of buses at the garage due to shortage of spare parts were the major challenges that hinder smooth functioning of the enterprise in delivering public transport services in the city . Even if there were constraints related to the above mentioned challenges, Anbessa has also some opportunities in public transportation system. Some of the opportunities were on passengers transported , transport cost , congestion , road safety , environmental pollution , bus network and it also provides the following services to the society : contract transport service , advertisement , mobile crane service, school bus service and technical services . Finally, based on the results of the study the enterprise should improve the level services by solving the above mentioned problems in collaboration with the government and other concerned bodies. Furthermore, the Government should give great attention to the enterprise to improve public transport services in the city especially by taking advantages of the opportunities that mentioned in the above.

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Public transport is important for the survival of modern society and without it life would be difficult for dwellers in the city especially for the urban poor. (Armstrong – Wright, 1993) . As an essential service in urban centers, transport enables people, firms and other organizations to carry out their activities at sites selected for their purposes in separate locations in the cities. Transport provides a key to the understanding and operation of many other systems at many different scales and is an epitome of the complex relationships between social and political activities and the level of economic development (Ali, 2010; Hilling, 1996)

Most of the rapid urbanization changes are taking place in cities of the developing world particularly in Africa where urban population is growing at an unprecedented rate. And the continent currently is experiencing an average growth rate of 4.5 per annum. This growth in population is a result of a combination of both natural increase and rural – urban migration (Trans – Africa, 2010). This is because urban areas perceived to offer a better quality of life and to provide employment opportunities. Besides, a significant proportion of industrial and manufacturing industries in the developing world are located in the major urban centers. For example, ninety percent of all the industrial and manufacturing industries in Zimbabwe are located in the seven largest urban centers (Tatenda, 2002). It is therefore evident that urban transport is closely linked to the national economy and hence constraints in the sector are likely to have extensive repercussions on the performance of the national economy. Thus, transport plays an important and pervasive role in allowing industrialists, manufactures and consumers to effectively participate in the economic processes. Moreover, it improves peoples' mobility, which in turn confers the opportunity of high accessibility and it is fundamental in breaking isolation and thus strengthens an individual capital base (Norton, 1971).

Furthermore, there are many reasons why people take trips in urban areas. Regarding this, Mekete (1997) grouped the reasons of trip as follows:- journeys to work (movement of persons to their places of work); journeys to school by children and students, journeys for shopping and personal business, journeys for social and entertainment purposes; journeys to home; and

journeys for which there is no specific purpose other than to be with or assist some other person. But in developing countries trip to work and school are major components of travel (WB, 2002; Armstrong – Wright, 1993; Mekete ,1997). Thus, transport is central to development. Without physical access to jobs, health, education and other amenities, the quality of life suffers; without physical access to resources and markets, growth stagnates, and poverty reduction can not be sustained. Inappropriately designed transport strategies and programs, however can result in networks and services that aggravate the condition of the poor, harm the environment, ignore the changing needs of users, and exceed the capacity of public finance (World Bank, 1996). There fore, transportation has a direct impact on the day to day activities of people and basis by which economic development can occur.

Before the introduction of modern transportation system (i.e. end of 19 century) in Ethiopia people were using horses, mule, donkey, camel and walking on foot for transportation purpose (Pankhrust ,1961) . However, modern transport development and its contribution to the country's economy have not been significant. This has been mainly because of deficiencies in policies and strategies which have been made to support the transport system (Mekete ,1997). Besides, urban transport related problems mainly affecting the city like many cities of developing world. In Addis Ababa fast growth of population and horizontal expansion of the city have created a serious challenges in public transport services (Trans-Africa, 2010). But an effective public transport is that which is able to fulfill the demand of the society to various kinds of travel by facilitating accessibility, availability, affordability and other quality of the services, which are the main concern of urban public transport in cities (Robin, et al., 2005, Armstrong –Wright, 1993)

Thus, this paper tried to assess the existing situation of public transportation system in the city of Addis Ababa by emphasizing on Anbessa City Bus Service Enterprise with the general aim of examining opportunities and challenges of Anbessa city buses and attempt to provide solutions and suggestion that should be taken to avoid the problems of the enterprise and public transport services in the city .

1.2 - Statement of the problem

Public transport plays a vital role in enabling economic growth and it is the backbone of sustainable urban transport systems in many cities all over the world. But many cities in the developing countries, including Addis Ababa experience a poor public transportation system (Trans – Africa, 2010). The dominant modes of public transportation system in Addis Ababa are Anbessa city buses and Mini bus taxis ,which accounts 40% and 60% ,respectively (ERA,2005) . The existing public transportation system is characterized by congestion and delay, increasing road accidents, inadequate road infrastructure , poor vehicle conditions , poor infrastructure for non-motorized modes, poor customer services and uncomfortable traveling conditions (Bitew , 2002; Mekete , 1997 ; Demelash ,2007; Mintsenot and Takano ,2007) .

According to Dimitrious (1990) rapid urbanization is one of the main reasons for poor state of public transportation in the cities of most developing countries. Furthermore, fast growth of population due to natural population growth and rural-urban migration creates a burden for public transportation system in most of the cities of Third World countries (WB , 1996 ; Trans-Africa , 2010).This is because population growth has a significant impact on travel ; i.e. on number of trips , size of city , and travel patterns . However, the limited capacity of existing transportation infrastructure is stretched to the limit and thus, it has become a challenge to cope with the public demand for travel. And the performance of public transportation in the city in social, economic and environmental aspect is thus distressing (WB,2002).Similarly, the limited growth of Anbessa city buses in comparison with the fast growing number of population continues to show huge disparities in the city of Addis Ababa . And ACBSE has not exhibited growth proportionate enough to accommodate this increase in demand for public transportation (Mekete ,1997 ; Trans-Africa,2010) .

Furthermore, various studies were conducted on public transportation system of the city at different times. But most of the studies were conducted on the trends and features of public transportation system in the city in general and its impact on mobility, road traffic accidents in the city, and analyses of efficiency and problems of urban transport in the city. And the finding of the studies indicated that road traffic accidents, congestion, over crowded residential

Patterns, imbalance between demand and supply of public transport services and absence of modern road transport regulation were some of the major problems of urban transport system in the city. (Bitew, 2002; Mekete ,1997 ; Meron , 2007 ; Demelash ,2007 ; Mintesnot and Takano ,2007 ; Trans-Africa , 2010). However, to alleviate the problems of transport in the city, the Government and other concerned bodies designed and implemented various strategies and activities. For instance, recently 500 Higer buses were imported from China and other private buses gave service to the city. This is because ACBSE couldn't solve the problem of transport in the city alone.

Thus as shown in the above most of the studies did not observe opportunities and challenges of public transportation system in detail in the city by taking ACBSE in particular. Owing to that this study aims at examining opportunities and challenges of public transport system in the city and bridging the existing gap in the area by emphasizing on ACBSE as a case study. Anbessa was selected because it delivers transport services across the center of Addis Ababa and even to the surrounding areas of Addis Ababa such as Sululta , Sebeta , Chancho, Debrezait , Holleta and so on. Furthermore, ACBSE is the only state owned public transport service provider to the residents of Addis Ababa and others coming to the city. Above all, it is carrying about 630,000 passengers per day using a fleet of about 500 buses and it has 35 % market share in the city (ACBSE) . And it plays a significant role to alleviate the problem of transport for the majority of urban poor, who cannot afford in other modes of transportation.

1.3 – Objectives of the study

1.3.1 - General Objective

The general objective of the study is to assess the opportunities and challenges of public transportation system, emphasizing Anbessa City Bus Service Enterprise.

1.3.2 - Specific Objectives

The specific objectives of the study are to:

- assess the existing public transportation system in the city with special emphasis on ACBSE .
- identify major challenges that hinder the smooth functioning of ACBSE in delivering public transport services in the city.
- observe opportunities of Anbessa city buses in public transportation system of the city .
- assess the level of services provided by Anbessa city buses .

1.4- Research Questions

The study answered the following questions:-

- ✓ What is the existing status of public transportation system in Addis Ababa?
- ✓ What are the major challenges that influence the performance of ACBSE in providing public transport services ?
- ✓ What are the opportunities of ACBSE in providing transport services?
- ✓ What are customers' responses towards the level of services provided by Anbessa city buses ?

1.5– Significance of the study

This study will have great significance to Anbessa City Bus Service Enterprise and other concerned bodies, because it provides them important information on the performance of the enterprise in public transport service delivery and bus user's response towards the level of services provided by Anbessa city buses. Besides it will help them to know the challenges that hinder the smooth functioning of the enterprise and it provides some solutions to improve service delivery process. In addition, the outcome of the study can be used as a springboard for further studies in urban transport issues. Finally, findings of this study will serve as an ingredient in designing future plan to alleviate the problem of transport in the city.

1.6- Scope of the study

This study was limited to only in assessing opportunities and challenges of public transportation system in the case of ACBSE. Due to shortage of finance and time constraints it was difficult to conduct the study by adding other modes of transport in the city.Besides, ACBSE delivers transport services across the center of Addis Ababa and even to the surrounding areas of the city such as Sululta , Sebeta , Chancho, Debrezait , Holleta and so on. Furthermore, Anbessa city bus is the only state owned public transport service provider to Addis Ababa and surrounding residents.

1.7 - Organization of the Study

This study is organized in five chapters. The first chapter briefly presents background of the study , statement of the problem , define the research objectives and questions , scope and limitation of the study, and significance of the study .Chapter two presents the review of related literature .Chapter three gives general description of research methodology and description of the study area. Chapter four deals with presentation and analysis of data using tables, pie charts and graphs. The last chapter presents major findings of the study, conclusions based on the analysis of results and recommends possible improvements.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

This chapter of the study deals with some theoretical views on the features of urban transportation system in general, urban transport modes, demand and supply on urban transport and service delivery of public transport, empirical studies and conceptual framework of the study.

2.1. Definition of key terms

- *Transport:* it is a means of conveying people or goods from one place to another.
- *Urban transport*: refers to all modes of transportation used in urban areas.
- *Urban public transport*: refers transport modes that serve the people, such as buses, small taxis and minibuses.
- *Transport infrastructure and facilities*: means integrated bus terminals, offices, shelters, and rest and vehicle repair facilities along the ways.
- *Passenger transport services:* refers mainly to bus services which provide scheduled services on designated routes, and are duly authorized to carry passengers on payment of fare fixed for a given journey.
- *Terminals*: means the places where the customers get in touch with the Anbessa city bus. And it is an ideal place where all information regarding bus operations could be made available to passengers.
- *Road traffic:* means the quality of road vehicles, drivers / operators of vehicles, road traffic operation, road environment and the road traffic network.
- *Anbessa City bus:* the red and yellow bus which operate in the inner city of Addis Ababa and some surrounding areas of the city.

2.2 The Role of Transportation

Transportation plays a major role in the production process. It allows the entrepreneur to assemble more easily the raw material and labor input needed to make a specific product. The same transportation system moves intermediate products to other producers for subsequent use in their production process, and it moves finished products to consumers (Wood and Johnson, 1989). As Norton (1971) transportation also improves the level of human understanding and

education in a direct fashion by facilitating the movement of books, newspapers, various art forms and indeed by the movement a people themselves. Transport also allows workers to relocate to take advantage of better job opportunities (Wood and Johnson, 1989).

More over, economically, transport is the life blood of cities, in most countries, including developing countries; cities are the major sources of the national economic growth. Cities and the growth of cities, make poverty reduction possible. Poor transport inhibits the growth of cities (World Bank, 2002). Socially, transport is the means of (and the lack of transport is the impediment to) accessibility to the jobs, health, education and social services that are essential to the welfare of the poor; inaccessibility emerges as a major cause of social exclusion of the poor in urban areas (Ibid, 2002).

Lieb (1981) also stated that transportation system of a nation has a pervasive impact on the whole society. It not only influences personal mobility and the prices that people pay for goods and services, but is also a major determinant of where people choose to live and work. Due to that considerable attention is being devoted by all levels of government to the patterns of development that result from government expenditure for particular form of transportation facilities.

2.3 Transportation in Developing Countries

Throughout the inhabited world transport in one form or another is a basic and essential part of the daily rhythm of life (Hoyle, 1988). In countries of the developing world, like Africa, transport is generally considered as one of the most important factors involved in the processes of development (world Bank, 2002).This is also true for more advanced countries, such as those of western Europe or North America (Hoyle ,1988) .Further more , David (1996) stated many factors contribute to economic and social progress but mobility is especially important because the ingredients of a satisfactory life, from food and health to education and employment , are generally available only if there is adequate means of moving people, goods and ideas. In addition, as Hoyle (1988) development of any kind is virtually impossible without transport. The existence of an effective, modern transport system can open many doors leading towards

development; and transport can be seen as in initiator of development and as indicator of levels of development already achieved.

However, large parts of Third World countries are characterized by lack of year- round mechanized transport and movement is unreliable, high-cost, labor intensive methods (David,1996).Besides, the infrastructure is poorly maintained and in disrepair and is inadequate for present needs without the complication of growth of demand in the future. The skills and resources necessary to upgrade the transport are usually lacking (Dimortious, 1990). More over, the majority of the population lives in spatially circumscribed local socio-economic systems and a relatively static state in which immobility and poverty are clearly related (Trans - Africa, 2010).

2.4. Urban Transportation System in Developing Countries

Cities in the developing world are expanding at unprecedented rates. More people with more wealth create sharp increases in demand for higher quality transport services (Anthony, et.al. 2004). This is because in most developing countries the urban sector accounts for at least 50% of Gross National Product (GNP), in some countries that number is over 70%. Due to that cities in developing countries often devote 15 to 25% and sometimes much more, of their annual expenditures to their transport systems (World Bank, 2002). Between 8 and 16% of urban household income is typically spent on Transport, although this can also rise to more than 25% for the poorest households in every large cities (Ibid, 2002). Thus urban transport is one of the most crucial aspects of cities from the view point of sustainability. It can also contribute to poverty reduction through its impact on the economy of the city and the daily needs of the poor (World Bank, 2002; Spikerman and Wegener, 2001).

In addition, urban population continues to expand at more than 6% per year in many developing countries. The number of mega-cities is expected to double with in a generation. More than one half of the developing world's population, and between one - third and one- half of its poor, will then live in cities (WB, 2002). These increase in urban population have in turn resulted in massive increases in the demand for transport and most rely heavily on some form of public transport for their everyday activities (Armstrong - Wright, 1993).

Today, experiences show a need for a greater variety of public transport modes, and buses are choice of a majority of the communities and are the only means of mobility that can be afforded by the poor in developing countries of the world (Armstrong-Wright, 1993). The choice of any or a combination of the public transportation system mentioned above could be influenced by population and size of the city, their transportation demand and characteristics and land use pattern. In addition, the bus system is the transportation system that uses buses that may have a range of passenger capacities and performance characteristics, and may operate on fixed routes with fixed schedules, or may be flexibly routed (World Bank, 2002; Armstrong – Wright, 1993).

However, with very few exceptions, urban transportation systems in the developing world are wilting under the pressure of ever growing demands on an inadequate infrastructure and facilities (Anthony, et.al. 2004). Increased urbanization and population growth, urban expansion, dispersal of amenity and activity have increased the demand for and dependence on motorized transportation. Due to these the transportation system of these countries are characterized by rapid growth in demand which has overwhelmed transport capacity (Armstrong- Wright, 1993). Thus road congestion is widespread, accidents and environmental degradation have increased, public transport is over loaded and, due to lack of maintenance, roads are often in a poor state of repair. The ability to cope with these conditions has been strictly limited due to a lack of resources and low earning (Ibid, 1993).

Hence, as World Bank (2002) encouraging and improving urban transport system in developing world has got wider attention and has become a central issue in transport planning. This is because deteriorating transport conditions associated with urban sprawl and increased motorization are damaging the economy of large cities.

2.4.1. Urban Transportation Modes

Transportation modes in developing countries are far more diverse than developed countries. Urban transport is broadly categorized in to Non- Motorized and Motorized Transport (World Bank, 2002; Armstrong-Wright, 1993).

Access to personal transport, frequency of trips and choice of modes are all related to income levels and the range of income levels will largely determine the modal split (David, 1996).

Besides modal choice was determined more by personal factors (age , sex , income) than by characteristics of transport such as distance and time (Ibid, 1996) .

2.4.1.1 Non- Motorized Transport

Even in those countries with sophisticated levels of transport provision it is invariably the case that the shortest distances are covered on foot (David, 1996). In many cities of developing countries Non – Motorized transport is the main mode of transport for the majority of the poor. The two major modes of NMT are walking and various forms of cycling, which can be personal or public transport (World Bank, 2002; Armstrong-Wright, 1993).

According to David (1996) the proportion of walking journeys and transport by non motorized forms of transport usually increases in an inverse relationship with income and in many developing countries non- motorized travel for lower income groups is over-whelming important. As World Bank (2002) Walking is the main mode of transport and its modal share is very high; for instance, around 50% of all trips in major African cities are entirely on foot. Similarly, David (1996) stated that bicycles are the other most common forms of Non-Motorized modes, differs widely over time and between societies. However, as cities increase in size to the point at which walking can no longer satisfy the major trip requirements of the citizens, so public transport – together with bicycling becomes the major mode of transport for the poor (World Bank, 2002) .

2.4.1.2 Motorized transport

In developing countries, along with the increase in income, there is a rapid shift from walking and cycling to Motorized transport. Motorized public transport includes bus, tram, rail ways; air plane and Motorized private transport include vehicular and motor cycle (Anthony, et.al. 2004). Moreover, in most cities of the developing world, buses are the back bone of the motorized transport system and will remain so for the foreseeable future (World Bank, 2002). Similarly, Armstrong - Wright (1993) mentioned that conventional buses and small buses supplemented by a mass of para transit vehicles such as shared taxis, taxis available for individual use and converted pickups are the most common modes of motorized public transport in most Third

World countries (World Bank, 2002; Armstrong-Wright, 1993). Thus, the major public transport trips are made using buses in most cities of developing countries including Addis Ababa.

2.5 Transport Supply and Demand

The essence of transport is space. Transport is employed to overcome distance and the use of a transport system is characterized by a set of spatial flows (O'sulivan et al., 1979). Transport is a service that can't be stored. Supply and demand have to coincide at the same time, which is why transport planning must anticipate and optimize this coinciding of supply and demand (GTZ , 2002) .

According to Hilling (1996) in most developing countries the present provision for passenger transport is woefully inadequate yet as development proceeds, rapidly in some places but depressingly slowly in others, there will be continued and sometimes rapid growth in demand in urban areas. Besides, the relation between transport supply and demand continually change, but they are mutually interrelated. And from an economic perspective, transport supply and demand interacts until equilibrium is reached between the quantity of transportation the market is willing to use and the quantity being supplied (O'sulivan, et. al., 1979).

2.5.1 Transport Supply

Transportation is a service that must be utilized immediately and thus cannot be stored. Mobility must occur over transport infrastructures, providing a transport supply. In several instances transport demand is answered in the simplest means possible, notably by walking (O'sulivan, et al., 1979). However, in some cases elaborate and expensive infrastructures and modes are required, which represents a remarkable technological achievement (World Bank, 2002).

As Wood and Johnson (1989) transport supply expresses the capacity of infrastructure and transport modes, generally over a geographically defined transport system and for a specific period of time. Thus supply is expressed in terms of transport infrastructure and facilities, services and networks.

On top of that, the chief determinant of transport supply is the physical infrastructure of roads, cycle and footpaths, railways and water ways. The extent and state of the transport routes influence the operational options of the means of transport using them (cars, buses, pedestrians, bicycles, LRT, etc) (GTZ, 2002). Besides, different technologies and modes of operation used by the transport systems result in different frequencies, journey time, capacities and costs / tariffs (Ibid, 2002).

2.5.2. Transport Demand

The demand for personal movement is a function of personal place utility. Persons may wish to travel for various personal or business reasons, and the desire to use any particular mode or type of transport will be derived from the same source (Norton, 1971). Besides, as Lieb (1981) in a passenger context, people don't generally purchase passenger miles because they enjoy consuming them. Rather, there is some specific trip purpose, such as increasing individual place utility for either personal or business reason through travel.

Moreover, Hilling (1996) stated that the demand for transport will be influenced by the city structures and some socio- economic factors. Similarly, Norton (1971) noted economic growth, disposable personal income; geographic distribution of population, transport facilities and services available to the traveler will influence the demand for passenger movement.

However, rapid urban growth creates an almost insatiable demand for transport especially from these least able to afford it (Hilling, 1996). But in advanced economies increasing income usually leads to reduced demand for public transport, where as, in developing countries income growth is from a very low base, which means that it is low cost, public transport for which demand will be increasing most rapidly (Ibid, 1996).

2.6 Urban Public Transportation

Public transport plays a very important role in the less developed countries (Armstrong - Wright , 1993; World Bank , 2002).With low per capita income, typically only a small segment of the population can afford the luxury of a private vehicle, hence public transport is essential Anthony ,et.al.,2004). Public transport in Third world cities consists of a wide assortment of modern

ranging from traditional manpowered rickshaws and horse drawn carts to the conventional taxi, bus, and tram and rail system of the industrialized world (Armstrong – Wright, 1993; WB, 2002). Thus public transport is a collection of modes of transport which are available to the public irrespective of ownership. It includes road-based modes like conventional buses, Para-transit vehicles, human and animal powered vehicles, cycles and walking; rail based modes like heavy rail system, light rail transit, and rapid transit systems (Iles, 2005). But in cities of Third world countries conventional buses and small buses supplemented by a mass of Para transit vehicles such as shared taxis, taxis available for individual use and converted pickups are the common modes of public transport. Moreover , bus transport is the most common public transport mode in developing countries mainly due to its route flexibility, low-fares (transport cost) and permeability in to town and city centers (Hilling , 1996; Armstrong-Wright , 1993 ; World bank, 2002).

Demand for urban public transport services is growing at a rapid rate throughout the developing world due to growth in city area, population and small increases in wealth (Jacobs, et al., 1987). But urban public transport sector in developing countries is characterized by its high growth rate (in terms of passengers carried, vehicles in use and route kilometers operated). Besides , conventional buses play the dominant role in the movement of passengers but are often unable to meet the total demands of the traveling public (Ibid , 1987) . On top of that, public transport is widely viewed as one of the key elements of sustainable transportation. With sufficient load factors, public transport consumes less energy and emits fewer pollutants per passenger mile than private transport (Anthony, et.al. 2004).

2.6.1. Bus Transport Services

In most cities of developing countries public transport is provided by a very wide variety of buses and Minibuses, which accounts 50-70% of the modal split (Armstrong-Wright, 1993). Besides, as World Bank (2002) buses are the backbone of motorized transport in most cities. Because as Hilling (1996) stated bus is likely to be the appropriate urban public transport to satisfy a large low - income demand. Similarly, as Armstrong-Wright (1993) due to low income for the majority of inhabitants, bus provides the only mode of transport that they can afford. Besides modal choice clearly related to availability but critically to cost. And this cost factor will

be the main determinant of the number of trips that are made, with low income travelers either having to take the cheaper modes or walk (Hilling, 1996).

Bus services generally comprise a mixture of conventional medium to large buses; adapted trucks and minibuses. The design and carrying capacity of buses are vary considerably most are typically single deck two-axle vehicles and they generally have two doors and as much standing space as authorities or passengers will tolerate (Armstrong -Wright, 1993). Besides, as Simon (1996) capacity of buses is extremely important in context where a high proportion of the population lack access of private transport. Regarding to this, especially during peak periods buses frequently carry as many passengers as can squeeze in or hang on to them . For instance, over 240 passengers have been observed on individual articulated buses in Dar es salam (Armstrong – Wright, 1993).

Despite the vital role that buses are able to play, services are frequently insufficient to meet demand, and the services that are provided suffer from low output and are often inconvenient, uncomfortable and unsafe (Armstrong-Wright, 1993) . In addition, as Simon (1996) mentioned most public sector bus services have increasingly been plagued by some combination of rising costs, shortage of Spare parts and poor maintenance and thus low vehicle utilization, high level corruption, low staff morale, absenteeism and stagnant or falling revenues for various possible reasons. Reliance on subsidies has therefore increased.

Moreover, due to congested traffic, poorly paved roads, parking and stetting trading activities in the highest demand corridors and during peak periods, bus transport services are seriously disrupted (Armstrong-Wright, 1993). Besides, increased crowding, inadequate investment insufficient maintenance and in some cases poor management have combined to reduce efficiency and capacity (Hilling 1996).

2.7- Service Delivery of Public Transport

Most studies of the adequacy of urban transport make reference to a set of parameters that, for convenience, all start with the letter "A" (Robin, et. al, 2005). Any comprehensive approach to improving public transport from user's perspective should address all four of these parameters because these parameters would influence the demand for public transport in urban areas (Ibid, 2005).

⇨ Affordability

As Robin et al., (2005) it refers to the extent to which the financial cost of journeys put an individual or household in the position of having to make sacrifices to travel or the extent to which they can afford to travel when they want to. Affordability varies widely with income and the distance to be traveled. For most people, transportation is essential rather than discretionary, so the necessary funds need to be found in the household budget (Kumar and Barrett, 2008).

However, as Robin, et al., (2005) noted family on low income might be able to afford the necessary journeys to work for the income owners of the family, they might not be able to afford trips to school for their teenage children, or for their children to visit a grandparent in hospital and so on . For such a family, urban transport would, by most standards, be considered unaffordable. For instance, as Kumar and Barrett (2008) the share of household budgets spent on transport is just 3 percent in Addis Ababa, 14% in Lagos and a significant minority does not spend anything on transport, meaning that they meet all their transport needs by walking. Thus, affordability can be considered as the ability to make necessary journeys to work, school, health and other social services, and make visits to other family members or urgent other journeys without having to curtail other essential activities (Robin , et. al., 2005) .

⇨ Availability

Availability of transport is used to refer to route possibilities, timing and frequency (Robin, et.al., 2005) . They also noted that what ever the purposes of an individual's journey, be it education, work, leisure, personal services, or another, her/his activities are constructed by the route and the

time taken traveling. Thus, timings and frequency are included since if there is no service when a person wants to travel; there is no available transport (Ibid, 2005)

In addition, Demelash (2007) noted that availability of adequate public transport infrastructure is the first determining factor of quality and level of service. It refers to road and vehicle infrastructure and includes road surface, total road area, road width and symbols have direct effect on the speed of the service, quality of ride, reliability and accident rate.

Moreover, Iles (2005) mentioned that road, terminals and pedestrian facilities are the basic elements of transport facilities and infrastructure for road based public transport services .And inadequate and deteriorating transport infrastructure and poor facilities for NMT are major sources for poor public transport service (Armstrong – Wright, 1993;WB ,2002).Thus, pedestrian facilities at the side of main roads should be constructed adequately for safe and convenient pedestrian walking .

⇨ Accessibility

According to Robin, et al., (2005) it describes the ease with which all categories of passenger can use public transport. Unequal accessibility can prevent people from securing their most essential needs and rights: the right to enough food, adequate shelter, good health, a basic education, and so on. But in many developing cities, the vast majority of the population is poor who often have to face some kind of transport disadvantage (Barter, 1999).

Similarly, accessibility is also used to describe the ease of accessing the bus stop or station, and ease of finding out about travel possibilities, i.e. the information function (Robin, et al., 2005). But , public transport stations must be close to origin and destination of commuters , preferably within 500 meters of both home and work place (WB , 2002).

⇨ Acceptability

Acceptability is another important quality of public transport, whether because of the transport or the standards of the traveler. Hence, even if a bus has all the above mentioned qualities, potential travelers may be deterred by the state of the vehicles, lack of personal security on buses, operators' (drivers and conductors) attitudes and driving style, lack of waiting facilities and other attributes of public transport travel (Robin, et al., 2005). Regarding this, Kumar and

Barrett (2008) mentioned that poor quality of roads, overcrowding of buses, unpredictable and irregular service and inadequate terminal facilities are some of the frequent complaint of urban transport in some cities of Africa.

Moreover, in Transportation engineering profession, the concept of level-of-service is widely used to denote the quality of service derived from the operational characteristics of transportation facilities (Mfinanga, et. al., 2006). And on the part of transport consumers , the dimension of level of service considered are travel time , bus frequency , comfort , terminal standards , bus stop facilities , interchanges between routes and services among others . For a transit trip, travel time also includes walking in to the station or bus stop, waiting time for bus services, traveling time in the transit vehicle and walking time to the destination (Ali, 2010).

Moreover, as Mfinanga, et. al. (2006) stated quality of service measures reflect two important aspect of transit service ; i.e. the degree to which transit service is available to given locations and the comfort and convince the service provided to passengers . Therefore , the quality of service refers to the level of comfort the service offer during travel and average network speed , waiting time , walking distances to bus stops , reliability /arrival time , service information , safety and travel expenditure are mentioned the major quality indicators of services .

2.8 - Performance Indicators of Public Transport

As Demalesh (2007) cited from Costa et al., (1997) performance measure in public transport is important to monitor progress towards the objectives of the organization. The performance of an urban public transport can be viewed from two angles : the first one is providers attempt to minimize total operating costs of providing services ; while the other is how much the services provided are utilized efficiently in meeting its objectives and the need of the users . And for an ideal cases the services should be efficient and effective (Mfinanga, et.al., 2006).This is because efficiency and effectiveness are the most helpful indicators needed to monitor the important dimension of the organization .

According to Mfinanga , et.al.(2006) efficiency indicators relate to the processes by which the services are provided , particularly through the relation ships of inputs and outputs to the system; while the effectiveness indicates a comparison of services actually provided to the objectives that were intended and also measures the level of consumption for service output.

Moreover, performance measure criteria's served as an instrument to evaluate system condition, level of service and safety provided by the sector to users. Besides, it provides information for decision on how to allocate resources and help to prioritize improvements to the neediest areas (Demelash, 2007).

On top of that , fleet utilization, passenger volume, vehicle-km, break down in service, fuel consumption , number of staff , accidents and cost of bus services are considered as operation performance indicators of bus services in addition to quality indicators; such as waiting time, walking distances to bus stops, journey times and travel expenditures (Armstrong-Wright ,1993).

2.9 - Problems Arising from Urban Transportation System

Cities around the world are facing a number of critical environmental, social and economic problems. One of the major factors in a city that contributes to such situation is its urban transportation system (WB, 2002). Firstly, it causes environmental problems such as air and noise pollution, water pollution and health impacts. Secondly, a bad transport system also slows down economic development through congestion, accident, facility costs and depletion of non renewable resources. Thirdly, social equity and community livability can also be hampered by, for example, a transport system that only gives priority to cars and the wealthy (Ibid, 2002). Thus urban transport plays a great role in maximizing the movement of passengers but it has its own challenges which are being observed in most cities of developing countries. These challenges can be grouped in to three major categories: i.e - Traffic congestion, Air and noise problem and Environmental degradation (Dimitrious , 1990).

Congestion: reflects demand; the most congested places are those whose activities are in general greatest demand (Anthony, et.al. 2004). Traffic congestion in cities inundated with private vehicle is getting worse, especially for developing cities with low levels of road space but high levels of motorization. Specifically, continued urbanization, economic growth, and rising

car owner ship, together with limited resources to expand transport capacity suggest that congestion will only get worse in the future (Dimitrious, 1990). Traffic engineers distinguish between recurrent and non-recurrent congestion. Recurrent congestion is the congestion result from excess demand-the daily delays experienced during peak hours. Non-recurrent congestion is generated by unanticipated events-accidents, road closures, vehicle breakdowns (Anthony, et.al. 2004).

By slowing down the speed of people and goods, traffic congestion reduces overall economic efficiency. In other words, people and goods instead of working in the office or on the production line have to spend significant "dead time "on the road. The loss of worker productivity and the inefficiencies from late or least deliveries of goods and services can cause extensive losses to the whole society (Wright, 2005). Besides, traffic congestion leads to lose of work and leisure time, increased fuel consumption and emissions and high accident rates and it can be seen as the main factor that worsens other traffic – derived impacts on the urban environment such as air and noise pollution (Dimitrious, 1990).

Accidents : road traffic accidents is one of the leading causes of death by injury and the tenth – leading cause of all deaths world-wide , an estimated 1.2 million people are killed in road crashes each year , and as many as 50 million are injured , occupying 30 – 70 % of orthopedic beds in developing countries hospitals (WHO , 2003) . Developing countries bear a large share of the burden, accounting for 85 % of annual deaths and 90 % of the disability – adjusted life years lost because of road traffic injury (Ibid, 2003). Road accidents do not only cause injuries and fatalities but they also affect the household income since crash victims are often the main breadwinners. For instance a study in Bangladesh found that after a road fatality, 70 % of families experienced a decline in total income and food consumption (Robsenberg , 2005). Besides as Silcock (2003) injured victims frequently experience depression and travel – related anxiety for years after a crash. It is observed in Third world cities that a high level of vehicle use is often related to a very high rate of transport deaths and road traffic injuries affect mainly males (73 % of deaths) and those between 15 and 44 years old , this burden is creating enormous economic hardship due to the loss of family breadwinners (Worley , 2006).

2.10 - Empirical Reviews

This section attempts to review previous studies of various scholars, researchers and practitioners, which have been carried out in the area of transportation system particularly on urban transportation system in different countries and in Ethiopia.

2.10.1 – Research in Other countries

To begin with an empirical case studies carried out by Trans-Africa (2010) on public transport situation in some cities of Africa ; like Nairobi , Lagos , Dakar , and so on . The finding indicated that Africans use either non-motorized transport (walking and cycling) or informal transport for most of their trips, and informal collective transport is the main means of motorized transport across the whole of the African content and accounts for around 35-40 % of most urban transport trips. Non motorized transport (walking and cycling) is the second most important group with a modal share of 30-35% (with walking being the most dominant).

Kanyama , et al.,(2004) have also conducted nation wide survey on urban public transport in Dar es Selam, Tanzania . The finding of the study indicated that the presence of poor quality of public transport services and the way such services are being managed doesn't present the city as a ' living ' and ' participating' city . Besides, public transportation doesn't enhance quality of life, its operation is not based on people's participation and it impacts on the environment and health in a destructive manner through harmful exhaust emissions and frequent accidents. Moreover, they discovered that some of the inefficiencies that characterize the current transportation system of the city are caused by the non- existence of participatory planning practices among the various stakeholders. Besides, Ali (2010) conducted a study on the quality of services of urban transport in the city of Enugu, Nigeria. The finding showed that the level of services varied from one center to another , indicating variations in the quality of service of mass transit bus in different parts of the city (i.e. .central area was identified with the highest quality of bus services in the city).

Similarly , Kumar and Barrett (2008) conducted a study on the features of urban public transportation in cities of developing countries and the finding indicated the following points as

the major challenges for the sector : lack of a clear articulated of urban passenger transport policy , the need to coordinate land-use and transport planning is widely recognized but rarely achieved , lack of an effective coordinating institution capable of leading the implementation of urban transport reforms, to a greater or lesser extent in most cities , the networks of paved roads and associated traffic control facilities (such as signals , well designed intersections , dedicated bus lanes , and parking enforcement) are deficient , traffic behavior and vehicle condition are largely unregulated , commercial activities and vehicle parking force pedestrians off the sidewalks in to the road way, reducing the capacity of the road way and posing safety hazards .

Finally, Trans-Africa (2010) indicated that public transport has a significant impact on passenger mobility and traveling conditions, fuel consumption of collective transport vehicles, and on air pollution.

2.10.2- Empirical Studies in Ethiopia

This section attempts to review some of the empirical studies that have been carried out in Ethiopia concerning urban public transportation system in the city .To begin with Bitew (2002) on a study " Taxi Traffic Accidents in Addis Ababa " found that public transport plays a great role in satisfying demand of transport in the city . But road traffic accident is shown as the major problem of the city. Besides, the study found that poor traffic control system and regulation, overcrowded residential patterns, lack of good engineering systems and absence of modern road transport regulations were the major features of public transport in the city. Moreover driver behavior, driving experiences , level of education and age of taxi drivers have been found the major causes of traffic accidents in the city public transportation system.

A study on the "Impact of Public Transport on Urban Mobility in Addis Ababa "by Meron (2007) found that the existing public transport couldn't solve the need of transport in the city. Besides, the finding indicated that congestion is one of the main problems that affect the mobility of the people in the city. And specialization, continued growth of population and demand overlap are noted as the major causes of congestion in the city.

In addition, Mekete (1997) on a study "Some Thoughts on Intra-urban Transport Problems in Ethiopia "obtained that traffic congestion due to mix of the old and new means of transport and the nature of the roads, growth of population, physical size and number of vehicles, road traffic accidents and incommensurate population and physical growth of Addis Ababa are the major problem of urban transportation system in the city of Addis Ababa.

Demelash (2007) in empirical study on analyzing public transport performance using efficiency and spatial analysis found that efficiency of public transport particularly Anbessa bus is poor in the city. However, due to its lowest price the majority of urban poor select the service of Anbessa since it is affordable as compared to other modes of transport. Besides, Mintesnot and Tekano (2007) have conducted a study on "Diagnostic Evaluation of Public Transportation Mode Choice "in the city. Their finding indicated that socio-economic as well as public transport mode related parameters have a significant negative or positive influence on the mode choice and the users' perception of the bus service condition.

To sum up, most of the above studies recommended that the involvement of the public authorities in the management of public transport activity, investment in transport infrastructure, and public transport planning and integration with urban planning to enhance the mobility of people in the city.

From the above empirical review what can be noted is that the issue of urban transport is one of the major issues of researchers, academicians and others both locally and internationally. How ever, as it can be seen from the above studies most of them focus on the situation, trends, analysis of efficiency and problems of urban transport in general and its impact on mobility.

In addition, all of them did not observe the opportunities and specific challenges of public transportation system in detail in the city by emphasizing on Anbessa .Therefore, this study aims at examining the opportunities and challenges of urban public transportation system and bridging the existing empirical gap in the area by taking Anbessa City bus service Enterprise as a case study.

2.11 – Conceptual Frame Work of the Study

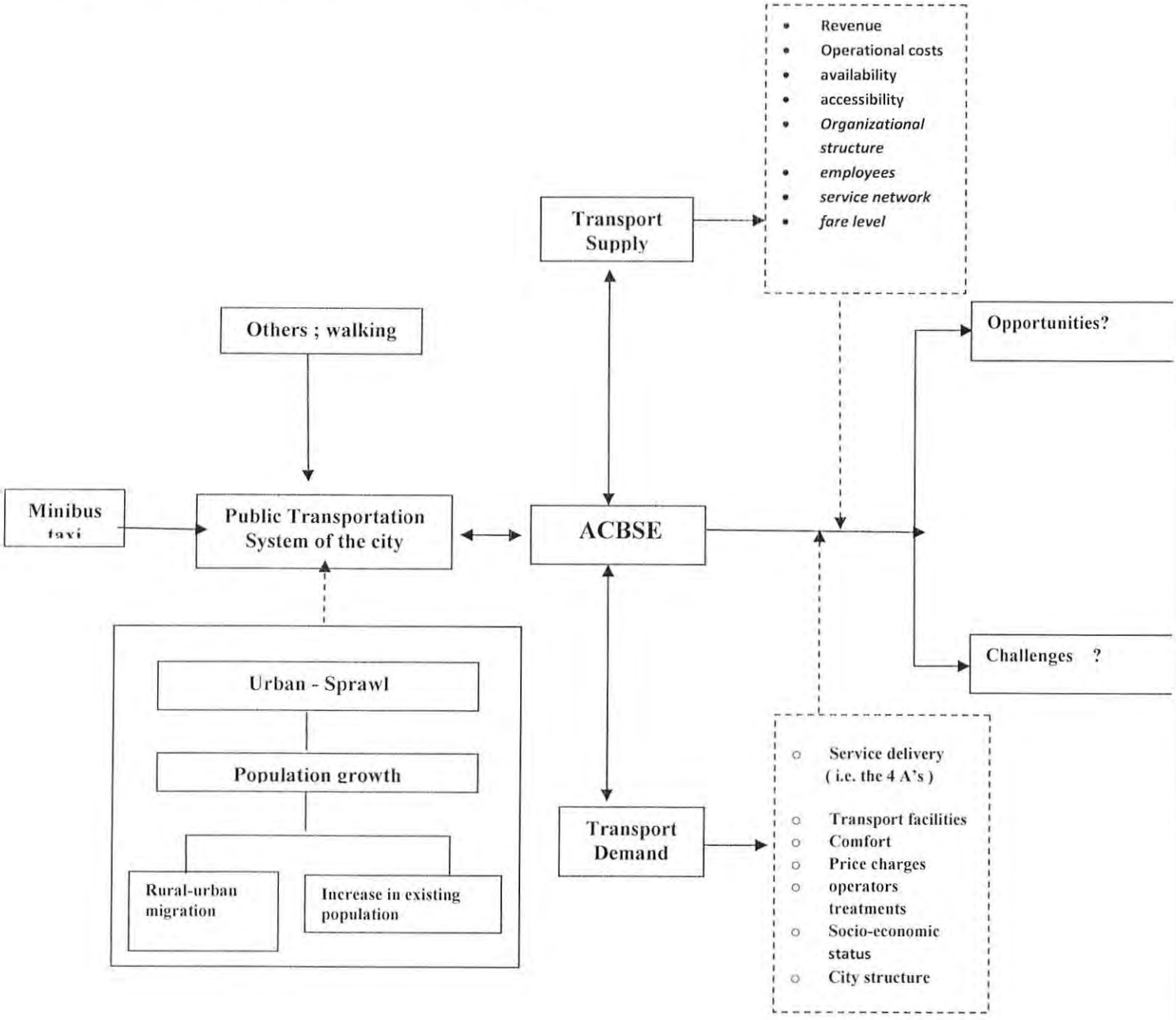
Urban transport plays a key role in harmonious development of cities by providing opportunities for regional economic growth and access to employment, markets, school, social centers, and health services and so on. So, it is essential to the daily lives of citizens (Ali, 2010; Hilling, 1996). Public transport is characterized in developing cities by wide variety of modes ranging from traditional man powered rickshaws and horse drawn carts to the conventional taxi ,bus ,tram and rail systems of the industrialized world (Jacobs ,et.al.,1987).

Demand for urban public transport services is growing at a rapid rate throughout the developing world due to largely expansion of the city and population growth (Trans-Africa, 2010). Besides, a number of factors influence transport demand and supply. The main factors likely to influence travel demand include city structure, socio-economic characteristics, transport facilities and level of services (Norton, 1971; Robin, et.al., 2005). Similarly , revenue , accessibility ,availability , financial situations , structure of the organization and service network are considered as indicators of the performance of transport services providers and affect the performance of the providers (Mfinanga ,et.al.,2006).

On top of that due to its significance in everyday life, public transport receives a good deal of attention from local or municipal government. This usually takes the form of strong regulatory controls, particularly in respect of fare levels and subsidies to public – sector operators. While some authorities have also invested vast sums on metro systems, few have introduced priority traffic measures for the main carrier, road – based public transport.

Similarly, public transportation system of Addis Ababa consists of Anbessa city buses, Mini bus taxi, Higher buses and sedan taxi (lada). Besides, Walking is the dominant mode of transport in the city. But due to fast growth of population and horizontal expansion of the city the existing public transport services providers could not solve the problem of transport in the city and still the problem of transport is a serious issue in the city. Therefore, identifying opportunities and challenges of Anbessa is important so as to enhance the performance of the sector because it gives services for the majority of the population in the city.

Figure- 2.1 Conceptual Framework of the study



Source : Author , 2011

CHAPTER THREE

DESCRIPTION OF THE STUDY AREA AND RESEARCH METHODOLOGY

This part of the study deals with two important issues, i.e. description of the study area and the methodology used for the study.

3.1 DESCRIPTION OF THE STUDY AREA

3.1.1 DESCRIPTION OF ADDIS ABABA

3.1.1.1 - Introduction

Addis Ababa is the capital city of Ethiopia. It is the diplomatic centre of Africa and the seat for many International Organizations. Being the centre of the country it has a wider role in economic, social, political and administrative perspectives. The topography of Addis Ababa is hilly to rolling with steep gradients and deep valleys. It is located at a height of 2000 to 2500 m above sea level. Addis Ababa city Administration extends over 540 sq.km. For Administrative purpose it is divides in to 10 sub-cities which are further subdivided in to 99 kebeles (CSA , 2007) .

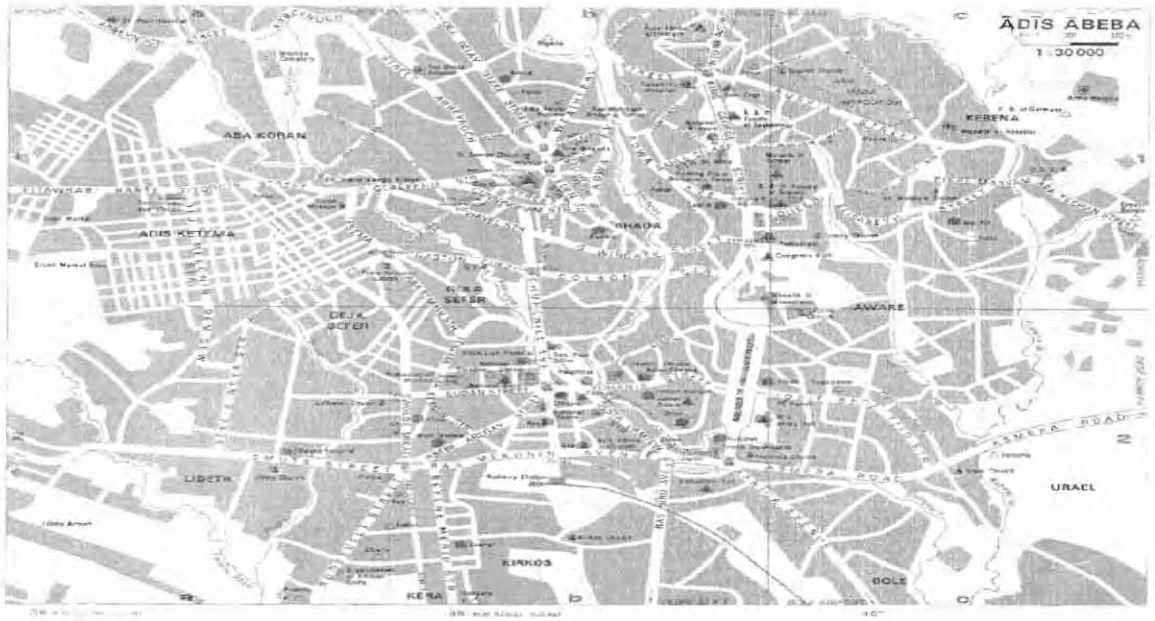


Figure 3.1– Map of the City

3.1.1.2 - Demography

Based on the 2007 census conducted by the Central Statistical Authority of Ethiopia, Addis Ababa has a total population of 2,739,551 of whom 1,305,387 are men and 1,434,164 women ; all of the population are urban inhabitants . For the capital city 662,728 households were counted living in 628,984 housing units, which results in an average of 4.1 persons to a household. Besides , 98.64% of the housing units of Addis Ababa had access to safe drinking water , while 14.9% had flush toilets , 70.7% pit toilets and 14.3% had no toilet facilities . Values for other reported common indicators of the standard of living for Addis Ababa as of 2005 include the following : 0.1 % of the inhabitants fall into the lowest wealth quintile ; adult literacy for men is 93.6% and for women 79.95% , the highest in the nation for both sexes ; and the civic infant mortality rate is 45 infant deaths per 1000 live births, which is less than the nationwide average of 77 ; at least half of theses deaths occurred in the infants' first month of life.

3.1.1.3 - Socio – economic Characteristics

The economic activities of Addis Ababa are diverse . According to official statistics from the Federal government , some 119,197 people in the city are engaged in trade and commerce ; 113,977 in manufacturing and industry ; 80,391 homemakers of different variety; 71,186 in civil administration ; 50,538 in transport and communication; 42,514 in education , health and social services ; 32,685 in hotel and catering services ; and 16,602 in agriculture. Specifically , 1, 479 , 768 people are economically active where as 851,836 people are economically inactive (CSA , 2007).

Table 3.1 - Economically Active persons Aged 10 years and Above by age group ,sex , employed , unemployed and unemployment rates.

Age	Sex	Total population	Economically active	Employed	Unemployed	Economically Inactive	Unemployment rate
10 +	M	1,102,897	792,682	672,444	120,239	310,215	15.2
	F	1,228,707	687,086	474,764	212,322	541,621	30.9
	Both sexes	2,331,604	1,479,768	1,147,208	332,561	851,836	22.5

Source : CSA , 2007

3.1.2 PROFILE OF ANBESSA CITY BUS SERVICE ENTERPRISE

3.1.2.1 History and Background

Anbassa City Bus Service Enterprise is the oldest and the only city bus enterprise in the country. Having been established in 1952 as a share company to conduct city and intercity activities, the enterprise was nationalized in 1975 and put under the Public Transport Corporation (P.T.C). When P.T.C was liquidated in 1994 and split up into three enterprises (Anbassa City Bus Service Enterprise, Walia Intercity Bus Service Enterprise and Abay Technical Enterprise). Anbassa City Bus Enterprise was re-established as a public enterprise by the Council of Ministers Regulation No 189/1994 effective form 18th July 1994 to render city bus transport service in accordance with the provisions of Public Enterprise proclamation No 25/1992.

3.1.2.2 Depots and their Locations

The depots are the activity centers where revenue is collected and major expenditure is incurred. Anbessa had nine functional departments and all the departments carry out their respective functions at depots. Where nearly 75% of staff are located. The remaining 25% of staff are at Head Office, with all Heads of Departments either monitoring the performance of the depots or

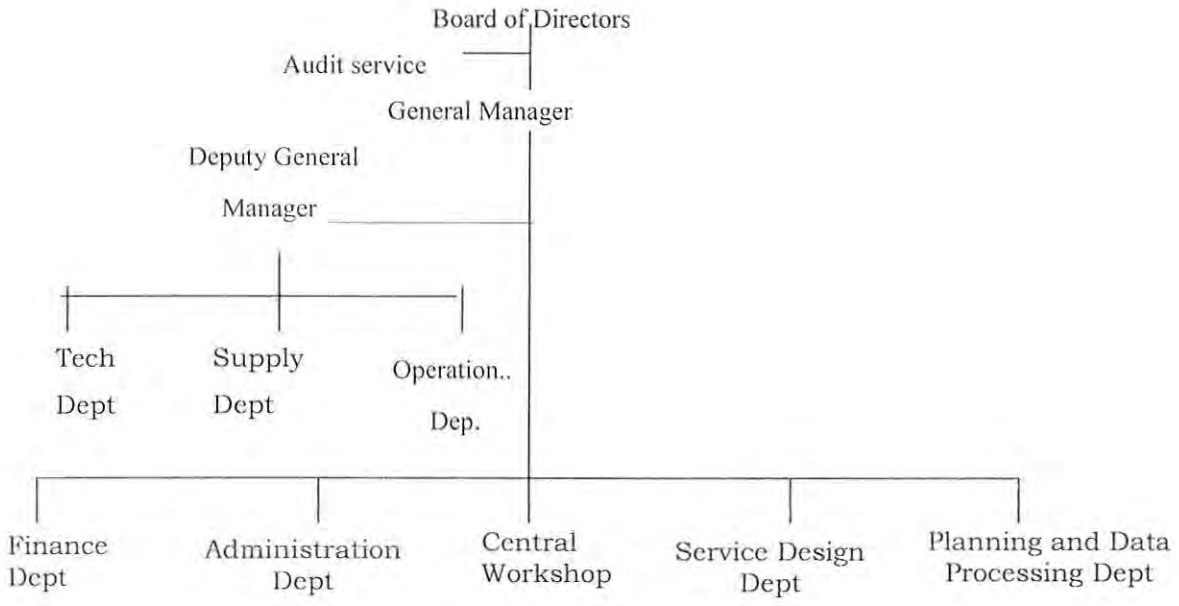
rendering service functions to the depots. Anbessa's head office/depots are at the following locations:

- Anbessa's head office is located at Yeka, in spacious premises of over 70.000 square km. With workshop facilities equipped with machines, garage equipment and special tools.
- Anbessa also owns the Shegole Depot, in the northwestern part of Addis Ababa, covering an area of 53,996 square km of land. This facility has a satellite spare parts store, satellite fuel station, greasing and washing bay in addition to light machines, garage equipment and special tools.
- Mekanissa Depot of Anbessa is in the southern part of Addis Ababa, covering an area of 72.861 square kms.

3.1.2.3 - Organizational Structure

For effective management of any enterprise, the organizational structure plays a vital role. The structure should clearly specify the responsibilities, span of control, delegation of authority, accountability and ensure proper inter relationships between various functionaries. The appropriate design of the organizational structure is a prerequisite for the successful operations of any business enterprise, more so in passenger transport.

Figure 3.2: Organization Structure of Anbessa city bus



Accordingly, as it is indicated in figure 3.3, the enterprise is headed by board of Directors with one General Manager and one Deputy General Manager. It has three departments which are directly responsible to the deputy general manager and five departments to the general manager. Each department is described here under.

3.1.2.4 Financial Status of the Enterprise

In any commercial organization, finance department occupies a pivotal role, more so in an organization where income is less than expenditure; for several years. In fact, the subsidy paid by Addis Ababa city Administration during the previous years reveal, that Anbessa depends to a great extent, on the financial support extended by City Government. As the financial statement for the previous five years indicates ACBSE found in loss. This is because on one side the fare level is controlled and on the other side the cost of operations increase from time to time, so the enterprise couldn't get profit for many years.

Table 3.2 – Profit and Loss statement of ACBSE from 1997 – 2002 e.c. (in '000 br)

Year	Revenue	Expense	Profit	Loss
1997	131,872	189,072	-	57,200
1998	124,149	178,404	-	54,255
1999	118,126	181,083	-	62,957
2000	123,296	175,819	-	52,523
2001	131,111	178,484	-	47,373
2002	170,686	217,639	-	46,953

Source: ACBSE

This data obtained from ACBSE's yearly report on 2006-2010 (1997e.c – 2002e.c) be evidence for financial status of the enterprise. So, the data indicated that the enterprise is operating with loss for the previous five years.

3.1.2.5 - Fare Structure

ACBSE has a flat fare system which varies with the length of the route. Depending on the route length the fare varies from 1.50 birr to 7.75 birr. The fare level is shown as follow:

Table 3.3– fare structure of Anbessa (April, 2011)

Route length (Km)	Routes	Numbers	Months							
			Aug.15/01 e.c	Oct . 16/02e.c	Jan.5/02e.c.	May 28/02e.c	Sep.27/03e.c	Oct. 27/03e.c	Jan.3/03e.c	April. 02/03 e.c
Up to 9	1,8,16,18,20,21,31,41,45,47,49,72	12	0.75	0.85	0.90	1.00	1.10	1.15	1.25	1.50
9,10-12	2,3,6,9,11,12,13,15,17,19,27,28,32,33,34,35,36,37,38,39,42,46,48,51,53,54,55,58,59,63,64,65,66,67,68,70,71,73,75,84,87,90,92	43	1.00	1.20	1.25	1.30	1.40	1.50	1.60	1.90
12-13	5,10,14,22,23,29,50,69,78,79,80,81	12	1.35	1.50	1.55	1.60	1.70	1.80	2.00	2.50
13-15	52,56,57,61,74,76,77,82,83,86,93	11	1.35	1.60	1.65	1.70	1.80	1.90	2.10	2.50
15-18	24,40	2	1.70	2.00	2.00	2.00	2.15	2.25	2.45	2.80
18-21	4 , 25	2	2.10	2.35	2.40	2.45	2.65	2.75	3.00	3.50
21-24	62	1	2.40	2.75	2.80	2.80	3.00	3.25	3.50	4.00
24 – 26	26 , (special 25 and 62)	1(2)	2.40	3.00	3.15	3.25	3.50	3.65	3.90	4.60
26-30	30 , 43 , 44	3	2.75	3.15	3.20	3.25	3.50	3.65	3.90	4.60
30-47	7, 60 , 85 , 88 , 89 ,91	6	4.35	5.00	5.10	5.15	5.60	6.00	6.50	7.75

Source: Addis Ababa City Bus Service Enterprise, 2003e.c

3.1.2.6 –Terminals

Terminals are the places, where customers get in touch with the city bus enterprise i.e Anbessa . The way the terminals are managed, indirectly reflects, the importance the organization pays for customer information, customer service and quality of bus operations. The terminal is the ideal place, where all information regarding bus operations could be made available to passengers. Thus, how the public transport organization manages, the evitable waiting time of passengers at terminals, contributes to the quality of services rendered. Every organization, tries to make the waiting period, as pleasant as possible as it contributes to the image of the organization.

Addis Ababa City Bus Enterprise has three major terminals, for its city bus operations. Each of these terminals have representatives of Operations Department (Dispatch section),Service Design Department (Control section) and Technical department (Field maintenance section) covering Hours of operations. Besides, it has seven minor terminals. Administratively the overall control and supervision of terminals rests with the operations Department. Table 3.6 gives details about buses touching them and trips operated from these terminals.

Table 3.4–Details of operations from terminals

Name of Terminal		*No of routes Operated*	*No of buses Operated*	*No of trips operated*
Major	Addis ketema	33	115	1836
	Leghar	19	69	1183
	Menelik squ.	9	37	638
Minor	Megenagna	7	16	411
	Ledeta	5	16	292
	6 kilo	5	21	412
	4 kilo	4	13	240
	Ayere tena	3	10	187
	Mesalemiya	2	7	174
	Shero meda	2	6	102

Source: Addis Ababa City Bus Service Enterprise records

3.2 - RESEARCH METHODOLOGY

The study has followed a case study approach. A case study was employed to get detailed and diverse information that helps to the description of the context about the enterprise under study. The study has used two types of data sources to gather pertinent data that help to achieve objective of the study. These were primary and secondary data sources.

3.2.1 METHOD OF DATA COLLECTION

Both primary and secondary data were collected for the study. The primary data collection instruments for the study were Questionnaire, Semi-structured interview, Focus Group Discussion, and Personal observation. Each of these instruments is described below. Moreover, the data collection instruments were both qualitative and quantitative types. The importance of collecting and considering of primary and secondary as well as qualitative and quantitative data was to triangulate, complement and supplement the various data generated from different sources which inurn in used to make the data and the result of the study reliable.

3.2.1.1 PRIMARY DATA COLLECTION

➦ Questionnaire

It is a typical method to collect primary data from sample respondents. Similarly, to collect information on the level of services that delivered by Anbessa the researcher has prepared questionnaire and administered to 200 sample respondents (i.e – users of Anbessa). The questionnaire consists of both open and closed ended questions. Before entering in to actual data collection process, the developed questionnaire was translated in to Amharic and pre – tested and appropriate corrective measures were taken.

➦ Semi – Structured Interview

Besides, semi-structured interview was conducted with officials of Anbessa and AATA to explore some related issues in greater depth for the study. This instrument was used because it offers sufficient flexibility and allows exploration of complexity, ambiguity, contradictions and

process. As interview requires resourceful person, the study used purposive sampling technique to select key informants for interview. So, with this approach the Head of Operation Department (Transport service), Technical Department and Service Design and Quality Control Department from ACBSE and a Head of Public Transport Service section from AATA were interviewed. However, the study has also employed different considerable numbers of informal discussions with different people that were found pertinent to generate valuable information due to their exposure to the issue. These include drivers, conductors, and so on.

➞ Focus Group Discussion

FGD is one of the most important tools used to collect the view of several people within the given population subgroup. Similarly, in this study, FGD was conducted with two groups consisted of seven participants in each session for in depth understanding of the challenges and opportunities of the enterprise. Group members for each group were selected purposively. The criteria to select the members were their better understanding and experiences on the enterprise. In addition, efforts were made to keep the homogeneity of members in each group by including members who share something in common. Thus, the first group consisted employees from production section; the second group consisted of employees from supportive section.

➞ Personal Observation

Observation is one of the important methods of primary data collection. In this study, it was employed during field work to cross check some realities and issues and to obtain further information. The observation was done through watching, listening, taking notes and photographing on observed issues. This method also helped the researcher to get a good insight regarding the situation of the enterprise and the system of delivering of services such as qualities of terminals and bus stops, treatment of conductors and other qualities of public transport by taking notes and photos on different aspects to substantiate the data obtained through other techniques.

3.2.1.2 SECONDARY DATA COLLECTION

Secondary data that describe the nature and characteristics of urban public transport services in general and Anbessa city buses in particular was gathered from books, journals , articles , published and unpublished materials , and bulletin prepared by ACBSE , AATA , CSA and other concerned bodies and various research papers by Transport Authority of the country . Internet was also used as a main source of data.

3.2.2 SAMPLING PROCEDURE AND TECHNIQUE

As mentioned above, ACBSE is selected as it is the only state owned transportation service provider in the city. ACBSE has three major terminals and seven minor terminals, for its operations. Table 3.1, here under, shows detail information about Anbessa city buses trips and terminals.

Table-3.5: Details of operations from major Terminals.

Name of Terminal	Number of Routes Operated	Number of Buses Operated	Number of Trip Operated
Addis Ketema	*33*	*115*	*1836*
Legehar	*19*	*69*	*1183*
Menilik square	*9*	*37*	*638*
Total from major Terminals	***61***	***221***	***3657***
Out of major terminals	*32*	*100*	*1806*
Total of Anbessa	**93**	**321**	**5463**

Source: Anbessa City Bus Service Enterprise.

As shown in Table 3.1, the major terminals account for substantial share in terms of number of routes, number of buses and number of trips operated as 65.6%, 68.8% and 66.9%, respectively. Based on these facts, the study used only the three major terminals i.e., Addis ketema, Leghar and Minilik square so as to collected data from users of Anbessa city buses.

To avoid personal biases and get representative sample, the researcher has used multi-stage sampling method (i.e. systematic and simple random).To begin with, the researcher used systematic sampling to select the number of routes operated in each terminal. So, first arranged the number of routes that operated in each terminal in ascending order and then every third routes that operated in each terminal selected as a sample. Lastly ten passengers were randomly selected from each selected sample routes of the three terminals and questionnaire was distributed. Thus, a total of 200 questionnaires were distributed randomly to Anbessa bus users at the mentioned terminals for a week at different times of a day. Furthermore, believing that officials and employees of ACBSE have real information regarding the enterprise's operation, participants were purposefully selected for interview and FGD.

Table 3.6: summary for selection of sample respondents

Major Terminals	*Sample respondents*	*Sampling method used to select number of route*	*Sampling method used to select sample respondents*
Menilik square	30	systematic sampling : 3 routes	Simple random sampling
Leghar	60	systematic sampling : 6 routes	Simple random sampling
Addis ketema	110	systematic sampling : 11 routes	Simple random sampling
Total	***200***	***Systematic sampling : 20 routes***	***Simple random sampling***

3.2.3 METHOD OF DATA ANALYSIS

Both qualitative and quantitative methods of data analysis were used for the study. Quantitative data generated from the survey through questionnaire were analyzed using simple descriptive statistics like frequencies and percentages in mentioning and explaining the results. Qualitative data obtained through semi-structured interview, FGD, and personal observation were analyzed by coded using predetermined templates and grouped in to codes, themes and categories then describing and interpreting the situation in detail so that the real image of Anbessa can be understood vividly.

CHAPTER FOUR
PRESENTATION AND ANALYSIS OF DATA

This section analyses and discusses the major findings based on the collected data. It attempts to give answers to the research questions by assessing opportunities and challenges of urban public transport system in the case of Anbessa city bus. The analysis and discussion would help to reach at major conclusions and give possible recommendations.

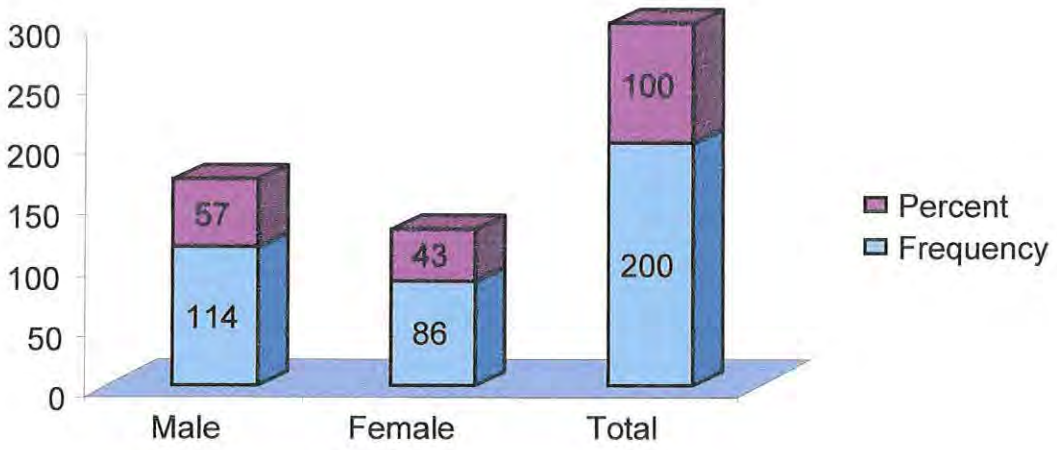
4.1. ANALYSIS OF CUSTOMERS RESPONSE

4.1.1 BACKGROUND INFORMATION OF RESPONDENTS

4.1.1.1 - Sex

As figure 4.1 shows 57% of the respondents are Male and 43% are Females. Thus, this data shows that both sexes use Anbessa city bus almost proportionally.

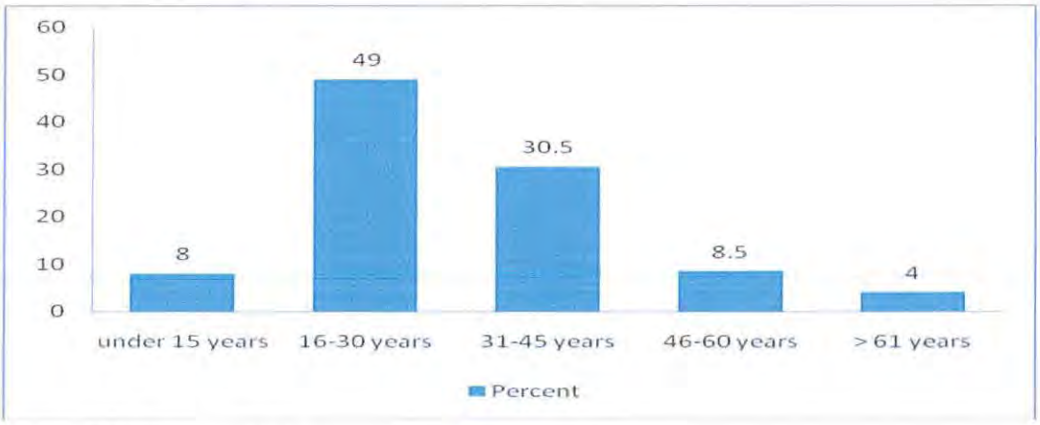
Figure 4.1 – Sex of Respondents



Source: Own survey, 2011

4.1.1.2 - Age

Figure 4. 2 – Age categories of Respondents

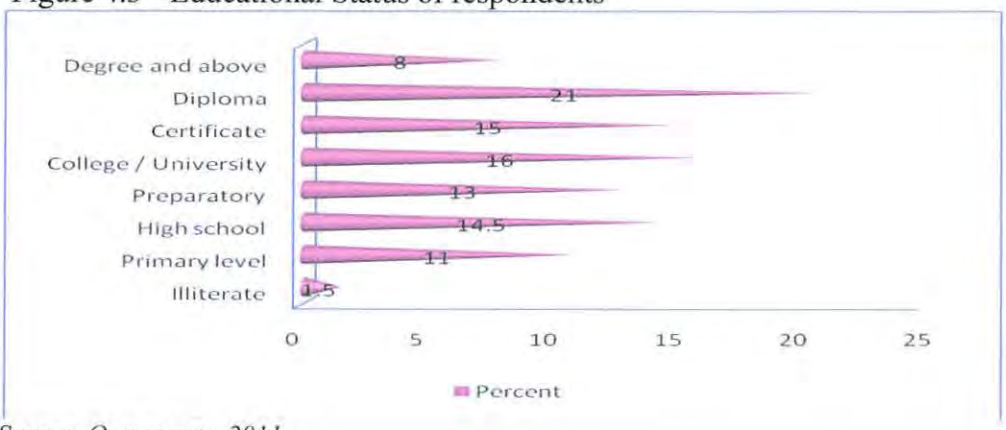


Source: Own survey, 2011

As shown on figure 4.2, 49 % of the respondents are found in the age group of 16-30 years old, next 30.5% of the respondents are under the age group of 31-45 years old. Hence, this shows that the majority of Anbessa city bus users are found in the age group of 16-45 years old (i.e-79.5%). On the other hand, 8%, 8.5%, and 4% of the respondents are found in age group of less than 15 years, 46-60 years and more than 61 years old, respectively. This shows that the majority of users of Anbessa are found in economically active age group mainly youth and early adults.

4.1.1.3 Educational level

Figure 4.3 - Educational Status of respondents

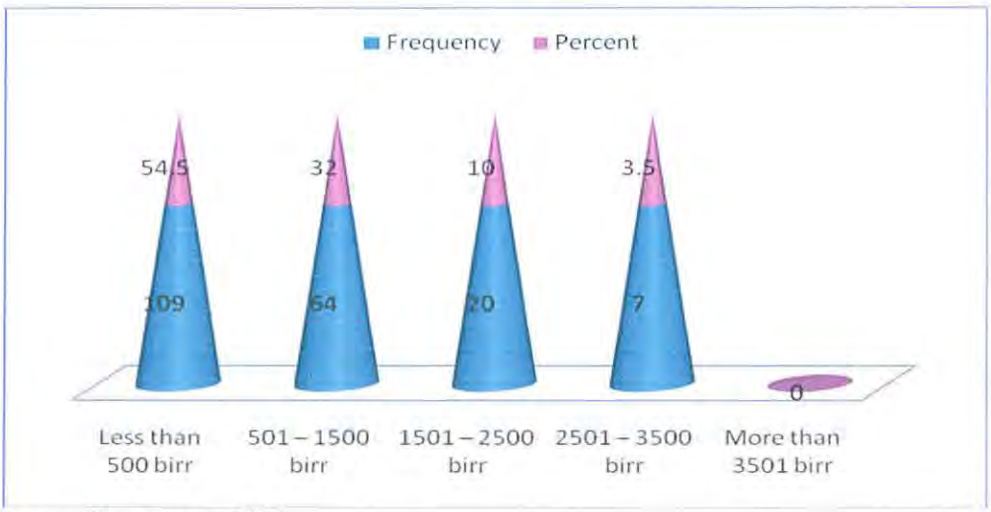


Source: Own survey, 2011

As shown in the above figure, 14.5% and 13 % of the respondents attended high school and preparatory level, respectively. Besides, 16% of them are at college / university level and 11% are also at primary level. Furthermore, 21 % and 8% of the respondents are diploma and degree holders, respectively. How ever, 1.5% of the respondents are illiterate. These data shows that most users of Anbessa are at college / university level and diploma holders but as the level education increase the number of users of Anbessa are declined because they can use other modes of transport easily as compared to others.

4.1.1.4- Monthly Income

Figure 4.4. Monthly Income of respondents

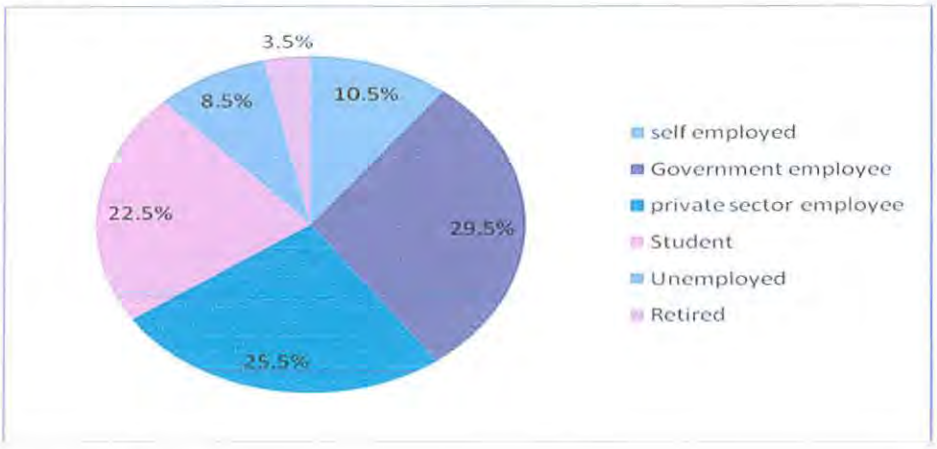


Source : Own survey , 2011

As Armstrong – Wright (1993) ; Hilling (1996) ; WB (2002) indicated buses are the most affordable mode of transport in most cities of developing countries . Similarly, Figure 4.4 shows that the majority of respondents 54.5% are found in income categories of less than 500 birr. Besides, 32 % of the respondents have monthly income between 501 and 1500 birr. Moreover, 10% and 3.5% of the respondents are found at the income categories of 1501 – 2500 birr, 2501-3500, respectively. Therefore, based on the outcomes of these data most users of Anbessa city buses have low monthly income and Anbessa provides services for the majority of urban poor.

4.1.1.5 . Employment Characteristics

Figure 4.5 – Employment Characteristics of respondents



Source: own survey, 2011

As the above Figure shows, the total working people account for more than half of the respondents (i.e 65.5%) while students account 22.5%. Further more, 8.5% are unemployed and 3.5% are retired. Hence, these data indicated that most users of Anbessa are working people at government and private sectors and also students at various levels. Therefore, journey to school and work are the main reasons that enforce people to use Anbessa city buses.

4.1.2. RESPONSES ON PUBLIC TRANSPORT (ANBESSA CITY BUS SERVICE)

4.1.2.1 – Mode preference

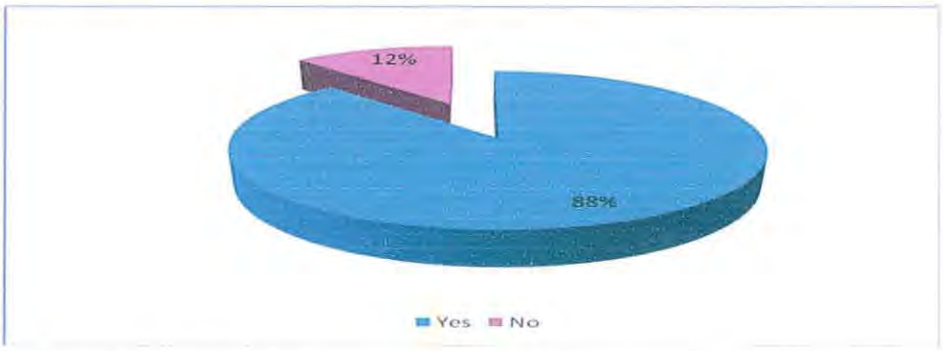
In accordance with the literate reviewed, regarding to mode of transport , Motorized and Non - motorized transport are the major mode of urban transportation system in most cities of the world and walking is the major mode of transport and its modal share is very high on most cities of developing countries (World Bank , 2002) . How ever , as cities increase in size walking can no longer satisfy the major trip requirements of the citizens , so buses become the most dominant mode of transport for the poor (Hilling , 1996) . Accordingly, 59.5% of the respondents replied that they use Anbessa city bus usually, 22.5% and 18% of respondents use taxi and walking, respectively; and none of the respondents used bicycle and private car (Figure 4.6).

Figure 4.6 – Mode preference of respondents

Source: Own Survey, 2011

Thus, as indicated above, Anbessa city bus is the preferable and most frequently used mode of transport for the majority of the respondents. But, as shown in the next pie chart, 88% of the respondents explained that they used more than one mode in their day to day activities while 12% of the respondents stated that they didn't use more than one mode.

Figure 4.7 Inter - modal consumption



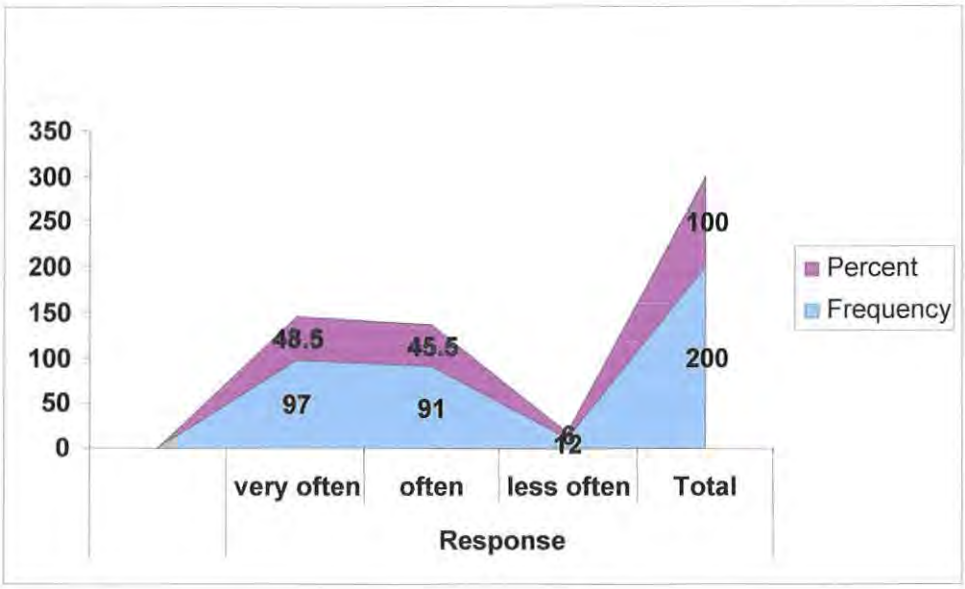
Source: Own Survey, 2011

Depending on the result of the above question, passengers were also asked to mention the type of mode that they use as a second option and the reasons that enforce them to use the second mode of transport. As a result, the majority of respondents stated that walking, higher buses and Mini-buses are the other alternative modes of transport used by respondents. More over, long waiting

time to get Anbessa buses, lack of facilities at bus stops and terminals, crowding of buses are some of the major reasons that enforce users to use the other mode of transport.

4.1.2.2 Connection with Anbessa City Bus

Figure 4.8 – Service consumption of Respondents



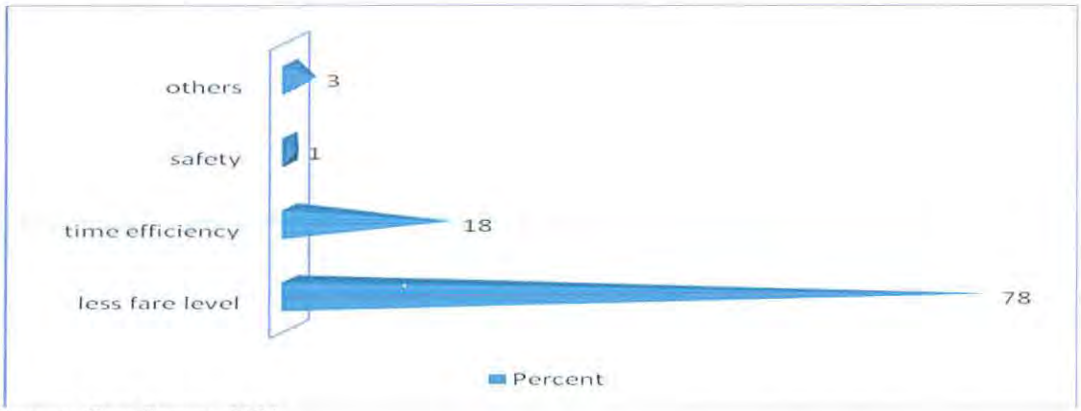
Source: Own survey, 2011

As Figure 4.8 shows, 48.5% of the respondents responded that they use the service of Anbessa city bus very often, 45.5% use the service often and 6 % of them use the services less often. There fore, this data shows the majority of respondents are regular consumers of Anbessa city bus service.

Accordingly, users of Anbessa were also asked to mention the reason why they prefer this mode of transport (Anbessa). Owing to that as shown in figure 4.9, 78% of the respondents replied that they choose Anbessa city bus due to its low fare level as compared to other modes of transport; such as Taxi, Minibus etc. Besides, 18% and 1 % of the respondents prefer Anbessa city bus due to its time efficiency and its safety, respectively. Further more, 3% of respondents stated that they prefer Anbessa bus due to other reasons like visiting areas and personal business.

Thus these data indicated that most customers' interest is mainly depending on the price charges rather than safety, time efficiency etc. because the majority of users are urban poor .

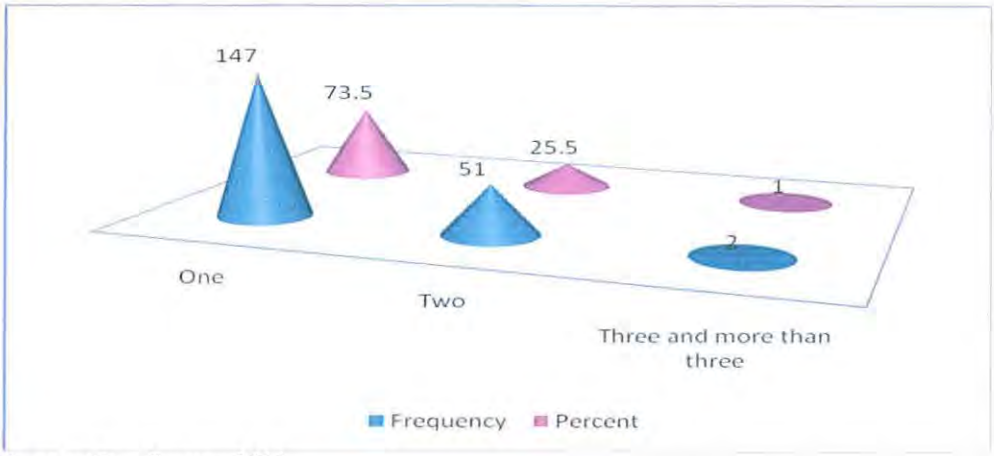
Figure 4.9 – Reason for selection Anbessa buses



Source: Own Survey, 2011

In addition, 73.5% of respondents have one connection with Anbessa city bus before reaching their destination, while 25.5% and 1% of respondents make two and more than two connection, respectively, before reaching their destination (Figure 4.10). However, as most respondents reasoned, long distance between their home and work place and expansion of the city (e.g Gemo, Ayer tena , etc.) are some of the reasons that force them to use more than one Anbessa city bus in their journey . Hence, this data depict that Anbessa city bus delivers a long distance services for users and it is one of the main opportunities for users of Anbessa .

Figure – 4. 10 – Number of connection with Anbessa city bus



Source: Own Survey, 2011

4.1.2.3. Purposes to use Anbessa city bus

Table 4.1 – purpose of trips

Ranks of trip purpose			Purpose to use Anbessa City Bus							Total
			Education	Work	Shopping	Family Visit	Leisure	Other	Missing	
First	Respondents	F	74	112	5	8	1	0	0	200
		%	37	56	2.5	4	0.5	0	0	100.0
Second	Respondents	F	36	29	38	24	5	3	65	200
		%	18	14.5	19	12	2.5	1.5	32.5	100.0
Third	Respondents	F	4	7	13	11	4	2	159	200
		%	2	3.5	6.5	5.5	2	1	79.5	100.0
Fourth	Respondents	F	2	3	9	8	3	3	172	200
		%	1	1.5	4.5	4	1.5	1.5	86	100.0

Source, own survey, 2011

As stated in literature review, education and work are the two major purposes of trip in public transport. Similarly, the indicated outcome in table 4.1shows the first purpose of the trip for most respondents were work and education, which accounts 56% and 37% , respectively. Besides, shopping, family visit and leisure accounts 2.5%, 4% and 0.5% respectively.

In the second purpose the highest frequent trip is made to shopping (19%) and education (18%). Besides , 14.5% , 12% , 2.5% and 1.5% of the respondents replied that they use Anbessa city bus for work, family visit, leisure and others (e.g. church) , respectively. However, 32.5% of the respondents didn't give answer.

In the third and fourth purpose of trip, shopping accounts the highest; because 6.5% and 4.5% respondents replied that they use Anbessa city bus for shopping, respectively. Following to shopping, family visit is the other major trip purpose in third and fourth purpose of trip.

Hence, these data depict that education and work trips are made at working days as a first purpose and shopping ,family visit, leisure and other trips are also made at week end and various holidays as second, third and fourth purpose of trips.

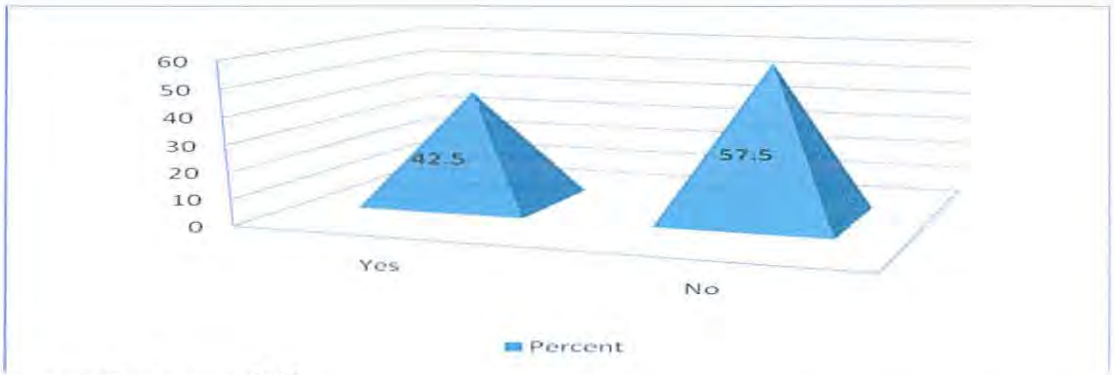
4.1.2.4. Service Delivery of Anbessa city bus

As Robin, et.al, (2005) stated any comprehensive approach to improving public transport from user's perspective should address these parameters (i.e. affordability, availability, accessibility and acceptability). This is because these parameters could influence the demand for public transport in urban areas.

⇨ Affordability

Regarding the price charges for Anbessa city bus service, 42.5% of the respondents replied that the price is affordable while 57.5% of the respondents responded that the price is not affordable (Figure 4.11). This indicates that the majority of the respondents didn't agree with the price charges for the service of Anbessa city bus. This in turn reveals that affordability is a basic issue for most users of Anbessa city buses as it delivers services for the majority of urban poor in the city. Besides, during observation, it was observed that most users complain the price which has got rapid increment for its service (Anbessa).

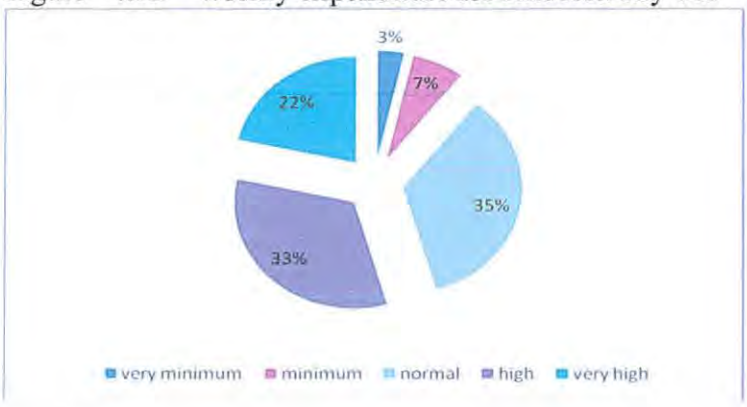
Figure 4. 11- Price charges for Anbessa services



Source : Own survey , 2011

Similarly, Figure 4.12 shows, 35% of the respondents responded that their weekly expenditure on public transport (Anbessa city bus) is normal. Besides, 33% and 21.5% of respondents responded as their weekly expenditure on public transport is high and very high, respectively. Thus more than half of the respondents (54.5 %) replied that their weekly expenditure for Anbessa city bus is high.

Figure 4.12 – weekly expenditure for Anbessa city bus

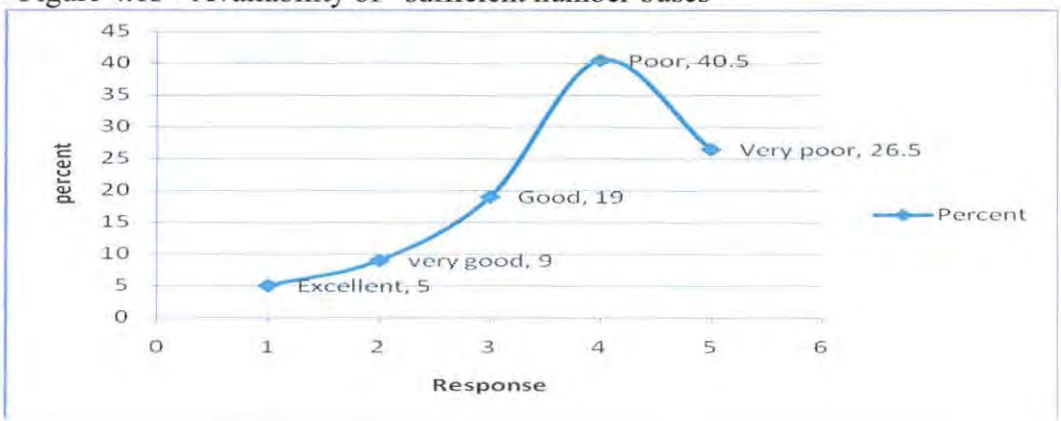


Source : Own Survey , 2011

On top of that, the majority of respondents replied that they spent for public transport especially for the services of Anbessa bus 15- 25 birr per a week. And some respondents also mentioned they spent more than 25 birr per week.

⇨ Availability

Figure 4.13 - Availability of sufficient number buses



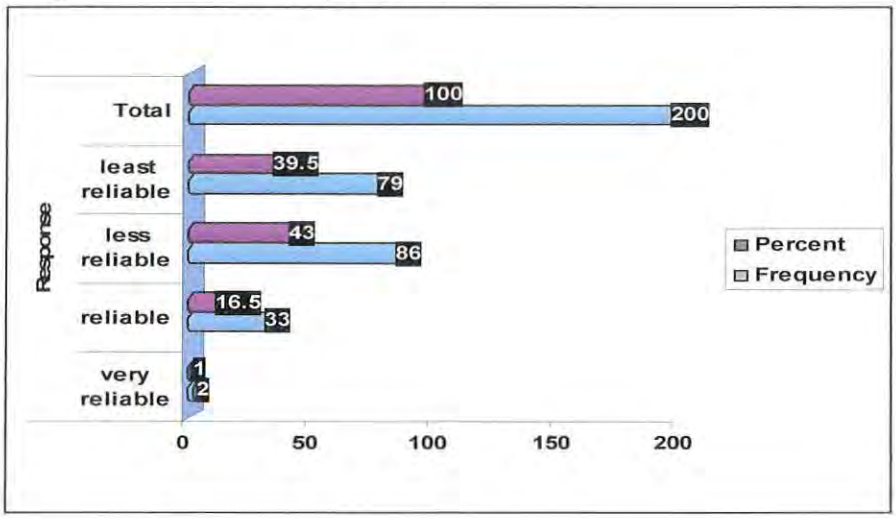
Source: Own survey, 2011

As the above Figure shows, 40.5% of the respondents responded that availability of sufficient number of bus is poor and 26.5% of them also responded it was very poor. However, 19%, 9% and 5 % of the respondents responded it was good, very good and excellent, respectively.

Therefore, as the data show availability of sufficient number of buses is a great problem in the city of Addis Ababa. This is because the majority of respondents (67%) responded that availability of Anbessa bus was poor. Besides, officials of ACBSE mentioned during the discussion that it was the major problem of the enterprise in delivering services for customers.

Similarly, respondents were asked to respond regarding to the reliability Anbessa city bus when ever they need to travel. Accordingly, as shown in Figure 4.14, 43% and 39.5% of the respondents responded that Anbessa city bus is less reliable and least reliable, respectively. On other hand, 16.5% of the respondents stated that Anbessa city bus is reliable. Hence, as these result show reliability of Anbessa city bus service is a major challenge in the city from demand perspective. Similarly, officials of ACBSE mentioned during the discussion that due to various factors reliability of Anbessa city buses is low at the moment.

Figure 4.14 – Reliability of buses



Source: Own survey, 2011

⇨ **Accessibility**

According to Robin, et. al., (2005) accessibility describes the ease with which all categories of passenger can use public transport. This is because unequal accessibility can prevent people from securing their most essential needs and rights.

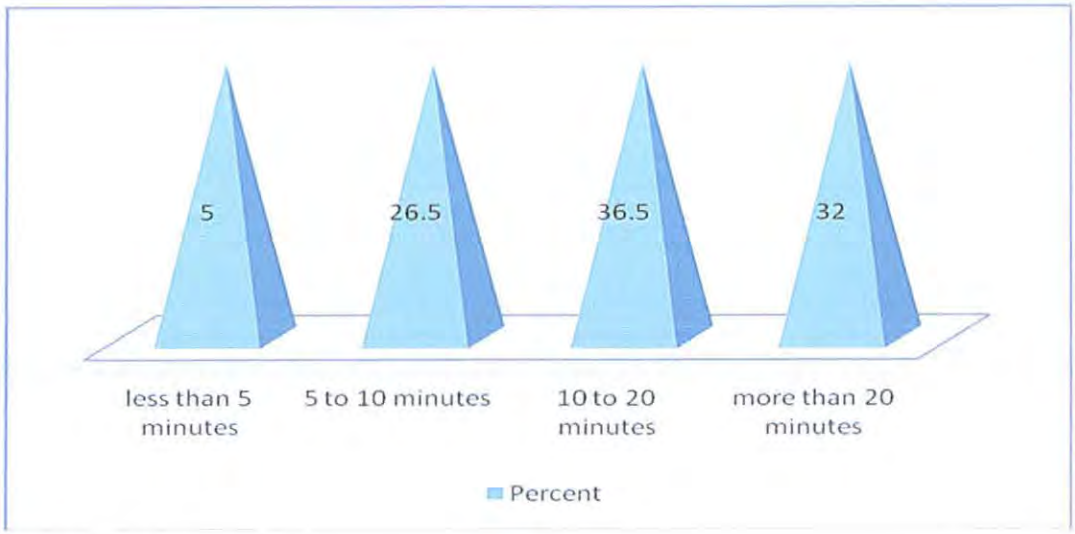
Figure 4 .15- Accessibility of Anbessa buses

Source : Own Survey , 2011

As the above figure shows, the majority of respondents (i.e 74 %) replied that Anbessa city bus service is not easily accessible to all parts of the public (such as disabled, elderly, etc). And most of them mentioned that lack of sufficient number of buses, less concern given to the above mentioned categories of people by concerned bodies, unsuitable situation of doors especially for disabled people, overloading of buses are stated as a reason to less accessibility of Anbessa city buses. How ever, 26 % of respondents replied that Anbessa city bus service is easily accessible to all parts of the people. Moreover, as the researcher observed the situation while conducting observation it is not accessible to some parts of the people especially during peak hours most elderly, disabled and pregnant women were suffering to obtain the service of Anbessa .

In addition, accessibility described as ease of accessing the bus stop or station, and ease of finding out about travel possibilities (i.e. information function). Besides, waiting time on and walking distance to bus stop and terminals are the major indicator of accessibility of the service of public transport.

Figure 4. 16 - Waiting time



Source : Own Survey ,2011

Thus as shown in the above figure , 36.5% and 32% of the respondents responded that they were waiting at the bus stop and terminals from 10 to 20 minutes and more than 20 minutes, respectively, to get the service of Anbessa city bus. Besides, 26.5% of respondents replied they were waiting from 5 to 10 minutes to get Anbessa city buses and 5% less than five minutes.

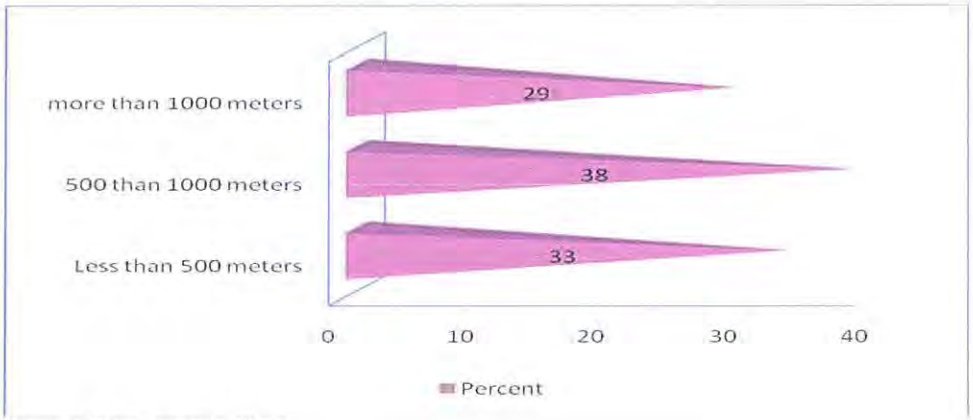
However, as World Bank (2002) average and maximum passenger waiting time at bus stops and/or terminals are 5-10 minutes and 10-20 minutes, respectively. But, as the above figure shows about 68.5% of respondent enforced to wait at bus stop and terminals for more than 10 minutes to get the service of Anbessa. Thus, due to long waiting time most customers complain the services ACBSE. This is also observed by the researcher during observation period.

Source–own photo, 2011

Figure 4.17- waiting for Anbessa city buses

In addition, as shown in the next figure, 38% of the respondents replied that they walk 500-1000 meters to reach the bus stop or terminals, while 33% and 29% of respondents responded that they walk less than 500 meters and more than 1000 meters to reach bus stop or terminals, respectively. However, as World Bank (2002) walking distance to bus stops in dense urban areas is 300-500 meters. Thus, as the above data shows there is a long walking distance in the city to obtain Anbessa city bus service.

Figure – 4.18 - walking distance



Source: Own survey, 2011

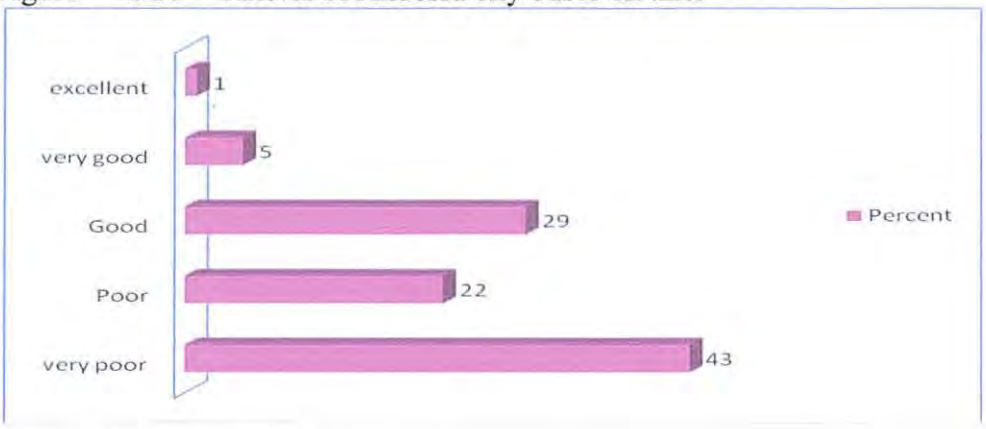
Regarding to availability of accurate indicator information at bus stops and/or terminals, 35% of respondents replied that ACBSE is very poor and 41.5% also responded as poor. But 15%, 8% and 0.5% of respondents responded as good, very good and excellent, respectively .Hence, as shown in Figure 4.19; the majority of respondents replied the existence of shortage of information indicators in terminals and bus stops.

Figure 4.19- Indicators of information

Source: Own Survey, 2011

Furthermore, as the researcher observed during observation period there was shortage of centers that deliver information accurately for users of Anbessa but the enterprise has a few information centers in some bus stops and terminals of the city. Similarly, respondents were asked about the arrival of buses. Thus, as Figure 4.20 shows, the majority of respondents (i.e-43%) replied that arrival of buses on time was very poor and 22% also replied as poor. On the other way, 29% and 5% of the respondents' responded arrival of buses on time was good and very good, respectively. So these data indicated that time efficiency is a great problem of Anbessa buses.

Figure – 4. 20 - Arrival of Anbessa city buses on time



Source : Own survey , 2001

However, as the above data show the majority of respondents replied that there is a problem in arrival of buses on time due to that customer are enforced to wait for long time. Besides, as the researcher observed and discussed with officials of ACBSE the waiting time is long in the city and as officials explained some of the reasons were congestion of roads, poor road conditions, and inadequate number of buses in the enterprises, congestion of most terminals / bus stops and also trading activities on the road and at terminals hinders the movement of buses.

Source: own photp, 2011

Figure 4.21 – partial conditions that hinder the movement of Anbessa city buses

⇨ Acceptability

As Robin, et. al., (2005) acceptability is one of the main parameter in public transport and even if a bus has all the above mentioned qualities the state of vehicles, lack of personal security on buses, operators' attitude and driving skill , lack of waiting facilities are some of the factors that affect the demand of customers . Hence, respondents were also asked about these points and Table 4.2 shows responses of them on the following facilities.

Table 4.2 – Some qualities of Anbessa city buses

Some indicators			Responses					Total
			Very poor	*Poor*	*Good*	*Very good*	*Excellent*	
Physical Conditions	Respondents	*F*	22	63	73	30	12	200
		%	11.0	31.5	36.5	15.0	6.0	100.0
Engine noises	Respondents	*F*	20	46	73	46	15	200
		%	10.0	23.0	36.5	23.0	7.5	100.0
Comfort inside the buses	Respondents	*F*	45	74	57	20	4	200
		%	22.5	37.0	28.5	10.0	2.0	100.0
Cleanliness of buses	Respondents	*F*	57	60	58	17	8	200
		%	28.5	30.0	29.0	8.5	4.0	100.0

Source – own survey, 2011

*** Physical condition of buses and engine (noise) condition**

As shown in Table 4.2, the majority of respondents (i.e. 36.5%) replied that the physical condition of buses is good; while 31.5% of them responded the physical condition of buses is poor. Besides, 11%, 15% and 6% of respondents responded that the physical condition of buses as very poor, very good and excellent, respectively. Similarly ,during the discussion with ACBSE officials some participants stated that nearly half of the buses were old (served more than ten years) due to that they were in poor physical condition and characterized by lack of protective and safety devices such as tattered seats and so on. Furthermore, frequent mechanical failures are a common phenomenon for some buses.

In addition, regarding engine condition the majority of respondents (36.5%) responded that the engine condition of buses was not noisy; it was good. However, 23% and 10% of the respondents responded as it was noisy and very noisy, respectively (Table 4.2).On the other hand; 23% and

7.5% of the respondents replied that engine condition of buses was very good and excellent, respectively. Of course, one can argue that it requires technical competence to determine whether or not engines are noisy or polluting. Nonetheless, assessment by the respondents indicated that some of Anbessa buses were old, dilapidated and noisy is an indication that the buses may be unsafe for passenger transport.

Moreover, most buses have been in use for more than ten years and their inherent poor quality was emphasized by officials during Focus Group Discussion. And as the researcher observed during observation period the physical and engine condition of most buses were in good condition.

Figure 4.22 – partial photos of Anbessa city buses

Source – own photo, 2011

*** Comfort conditions inside the buses**

Concerning the sitting and standing condition in Anbessa city buses, more than half of the respondents (59.5%) responded that sitting and standing conditions in Anbessa buses was poor and very poor, respectively. On the other hand, 28.5%, 10% and 2% of respondent replied that comfort conditions in Anbessa buses as good, very good and excellent, respectively (Table, 4.2). Confirming this, it is also observed by the researcher while collecting data during field work that especially during peak hours that tight sitting and standing conditions become extreme and aggravating discomfort and problems during traveling.

*** Cleanliness conditions of Anbessa buses**

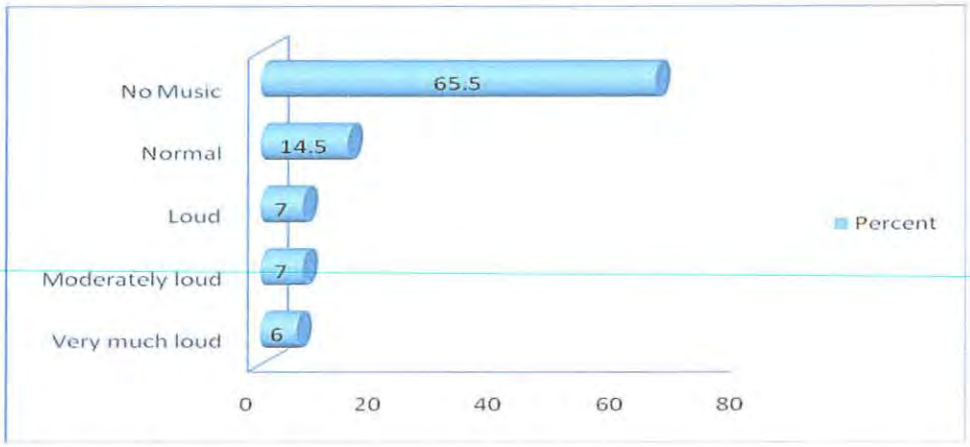
It was also tried to see the cleanliness of the bus, which have its own impact on service delivery. Accordingly, most respondents responded that the cleanliness of Anbessa buses was inadequate. 30% and 28.5% of the respondents replied that the cleanliness of Anbessa city buses was poor and very poor, respectively. Besides, the proportion of respondents who replied that the buses were not hygienic (unclean) rather it was good was 29%. Furthermore, 8.5% and 4% of the respondents replied that cleanliness condition of Anbessa bus was very good and excellent, respectively (Table 4.2) .However, as observed by the researcher over loading of buses, and lack of adequate ventilation are some causes for the above mentioned problems in side the buses but the enterprise control physical cleanliness of Anbessa buses as shown in the next photo.

Source: own photo, 2011

Figure 4.23: ACBSE keeps cleanliness of buses on this way

*Noise from Music

Figure 4.24– Noise from music in Anbessa city buses

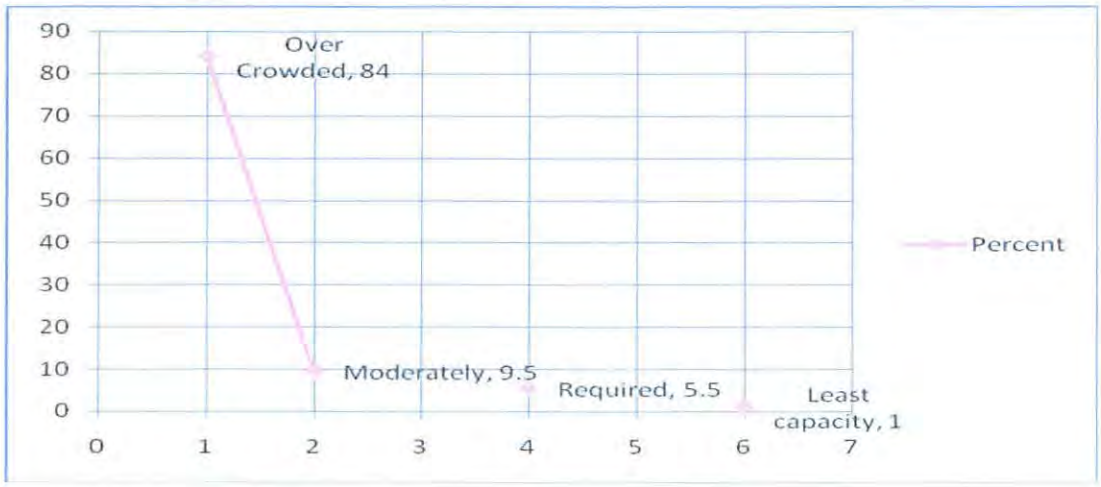


Source : Own Survey , 2011

Tuning of radio and music players to a normal volume was a common practice in most public transport modes, mainly to entertain the passengers. However, as the above figure shows 65.5% of the respondents replied that there was no music in Anbessa city bus. Besides, 14.5% of them replied that the loud of music was normal. However, the majority of respondents replied that Anbessa city bus did not entertain passengers using music /radio during traveling.

*** Over loading of buses (crowding conditions)**

Figure 4.25 – Overloading of Anbessa buses



Source : Own Survey , 2011

Despite the vital role that buses are able to play, services are frequently insufficient to meet demand, and the services that are provided suffer from low output and are often inconvenient, uncomfortable and unsafe. Similarly , regarding to crowding conditions of Anbessa buses , the majority of respondents (84%) responded that Anbessa city buses were overcrowded and 9.5% of them replied that buses were moderately crowded (figure 4.25) . Besides , as shown by the researcher while conducting observation, overcrowding condition of Anbessa city bus was a serious problem for passengers as it often led to incidents of pick pocketing, suffocation , and bad smells due to warm weather and sweat. Besides, over crowding and squeezing in the buses led to incidents of women being sexually abused by men.

On the other way, as the researcher observed some users of Anbessa city buses were also worried that overcrowding of buses could lead to the spread of communicable diseases such as Tuberculosis (TB). And it also creates hard traveling conditions for parents with children, disabled people, pregnant and elderly. However, officials of the enterprise mentioned that the main reason for crowding of Anbessa city buses was declining of the number of operable buses time to time due to long age of services. But at the moment there is an attempt to improve this condition in delivering services.

Source: own photo, 2011

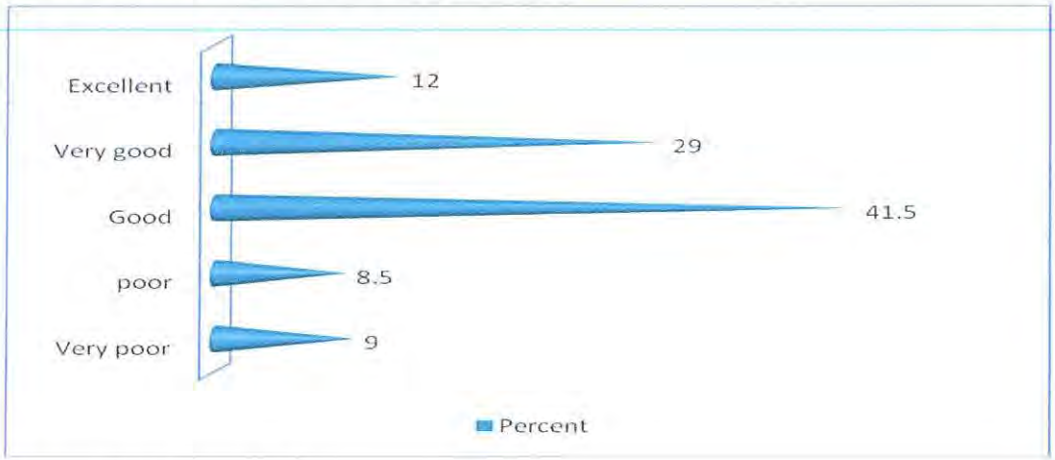
Figure 4.26: partial photo to show crowding situations in Anbessa city buses

4.1.2.5. Bus operators of Anbessa city buses

Operators' (drivers and conductors) attitude and driving styles are some of the factors that affect the demand for public transport services .Owing to that user of Anbessa city bus also asked question about operators of Anbessa in delivering services.

*** Ability of drivers in operating buses smoothly and safely**

Figure 4.27 – Anbessa bus driver's ability



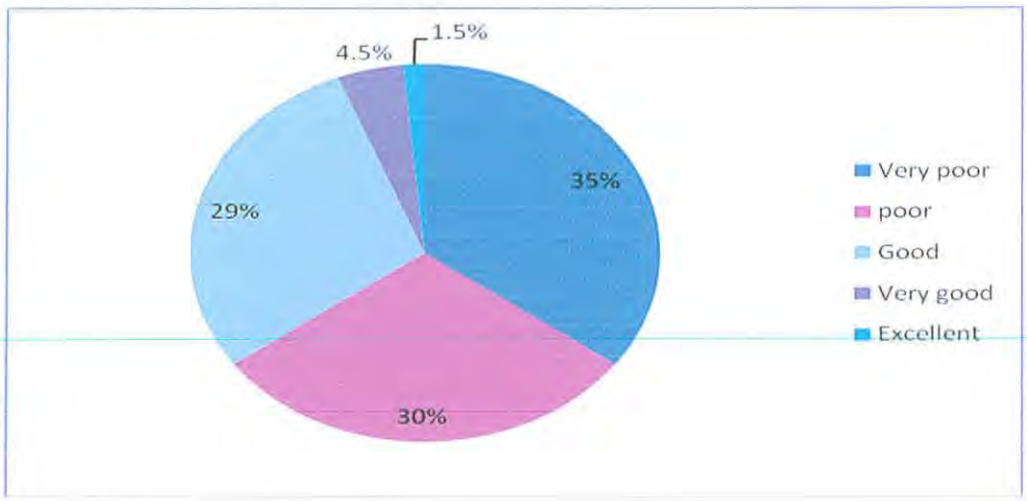
Source : Own Survey , 2011

As shown in the above Figure, the majority of respondents (41.5%) responded that ability of drivers in operating buses smoothly and safely was good. Furthermore, 29% and 12% of them responded very good and excellent, respectively .On the contrary, 8.5% and 9% of respondents replied that drivers were poor and very poor in operating buses smoothly and safely, respectively. But, as the result shows the majority of respondents have confidence in ability of drivers in operating buses safely.

Regarding this , during the discussion officials of ACBSE mentioned that the enterprise has well experienced employees in most departments and so as to improve their skills the enterprise also provide various short and long term training to various employees in collaboration with other sectors .

* **Willingness of operators to exchange information**

Figure 4.28 – Willingness of operators



Source : Own Survey , 2011

As shown in the above pie chart, 35% and 30% of respondents responded that willingness of operators to exchange information with passengers was very poor and poor, respectively. While 29% of them responded as good, and 4.5%, 1.5% of respondents also responded that they were very good and excellent in exchanging information about the service with customers, respectively.

However, as this result shows the majority of respondents didn't satisfied with operators of Anbessa city buses. Besides, as the researcher observed the situation during field work, especially conductors' verbal expressions to the passengers were unacceptable. Often, incidents that lead to expressions of indecent language include when conductors were collecting fares and ordering passengers to squeeze tightly in order to add more people into already over crowded buses. In such situations, mainly conductors use abusive language to passengers who protect against over loading.

4.1.2.6- Transport Facilities and infrastructure

Table 4.3 - Transport facilities and infrastructure

Facilities	Response	Responses					Total
		Very poor	*poor*	*Good*	*Very good*	*Excellent*	
Quality of bus stop and terminals	F	62	61	50	16	11	200
	%	31.0	30.5	25.0	8.0	5.5	100.0
Security at bus stop and terminals	F	127	58	15	0	0	200
	%	63.5	29.0	7.5	0	0	100.0
Road conditions	F	11	51	69	52	17	200
	%	5.5	25.5	34.5	26.0	8.5	100.0

Source: own survey, 2011

To begin, Robin, et.al. (2005) stated that lack of personal security and lack of waiting facilities are some of the other factors that influence the demand for bus transport services. In addition, condition of roads, bus stops and terminals situations and pedestrian facilities are the main elements of transport facilities and infrastructure for public transport services (Iles, 2005).

Based on these points, respondents were asked to give their answers for the questions related with transport facilities and infrastructure of Anbessa bus transport services.

*** Condition of bus stops and terminals**

As shown in Table 4.3, 31% and 30.5% of the respondents replied that the quality of bus stops and terminals for Anbessa city bus was very poor and poor, respectively. Besides, 25%, 8% and 5.5% of the respondents responded that the condition of bus stops and terminals as good, very good and excellent, respectively. Hence, the majority of the respondents stated that the conditions of bus stops and terminals were not good. Furthermore, as the researcher observed during field work, most bus stops and terminals were characterized by poorly built and

maintained facilities, shortage of bus bays, shelter, benches, destination signboards and time tables.

Source: own photo, 2011

Figure 4.29: partial photo for bus stops/terminals of Anbessa

In addition, as officials of ACBSE discussed, most bus stops / terminals have no space for buses to turn around and overcrowding by buses and congestion is a big problem in such areas. Although these terminals were intended to be major transfer points for many routes, they tend to be chaotic, dirty and unsafe. Furthermore, trading activities also contributed greatly to the problem of congestion at terminals and bus stations. Moreover, as the researcher observed, lack of toilet facilities at bus terminals and bus station is being seen as a major problem of public transport services and most customers complain on it. But passengers need to be provided with toilet facilities at the terminals due to the presence of long waiting time for buses at bus stops and terminals.

In addition, due to overcrowding of buses and congestion problem at bus stops and terminals, most passengers are exposed to pick pocketing and they loose their properties especially during peak hours. Regarding to this, as indicated in Table 4.3, the majority of the respondents, i.e 63.5% and 29% responded that security from being robbed at terminals and on buses was very poor and poor, respectively. Besides, 7.5% of the respondents stated that it was good. How ever, as this data shows and as the researcher observed during field work, due to overcrowding of buses and congestion at most terminals, pick pocketing is the serious problem and it creates a sense of insecurity among users of Anbessa city bus.

* **Road Conditions**

The condition of road has a great impact on the operation of transport. A well maintained road can permit vehicles to operate at high speed with relatively little wear and tear while those roads which are badly maintained with potholes and broken edges prevent vehicles from operating with speed and results in mechanical failure of vehicles. Hence, to provide quality transport service and make the service provides profitable, adequate roads that is well maintained and surface, is the major requirement. Based on these facts respondents also asked to assess the condition of roads that Anbessa city buses uses to deliver its service. Thus, 25 % and 5 % of them responded that the conditions of road are poor and very poor, respectively. Besides, 35 % of the respondents responded that the condition of roads is good. 26% and 9 % of the respondents replied that the condition of road is very good and excellent, respectively. (Table 4.3). However, during the discussion some officials of ACBSE stated that the prevailing condition of most roads are poor to some extent except the newly constructed ones and the capacity of the roads are very limited and can not properly accommodate all the traffic demand. So, road congestion is a great factor that affects the movement of buses in the city particularly at peak hours.

4.1.2.7- Challenges that discourage Anbessa City bus users

In addition to the above discussed points, respondents were also asked to mention major challenges (factors) that discourage them from using the service of Anbessa city bus .Due to that various respondents mentioned ,different factors but so as to make simple the researcher summarized the major challenges as follow :

- Overloading of buses (overcrowding)
- Shortage of number of Anbessa city buses
- Fear of pick-pocketing problem especially at peak hours
- Long waiting time for Anbessa buses at bus stops and terminals
- Rising of the price charges for service of Anbessa bus
- Lack of adequate information indicator at bus stops and terminals to use time efficiently
- Lack of comfort inside the buses
- Running of buses together in one direction
- Unacceptable treatment of operators especially conductors
- Inaccessibility of buses for some categories of people
- Lack of scheduled service operation
- Poor facilities at bus stops and terminals
- Poor physical condition of some buses was mentioned as the major factors that discourage most respondents from using Anbessa city buses.

4.1.2.8 - Users Recommendations for ACBSE Service

Passengers were also asked for their suggestions as how the enterprise should improve the service it delivered. And comments given by most respondents were summarized as follow:

- Increase the number of buses to avoid the problem of over loading and other related problems
- Improve efficient use of time (give services on scheduled time).
- Information indicators should be put at bus stops and terminals clearly
- Consider the fare level because it becomes unaffordable for the majority of urban poor.
- Conductors should treat customers positively
- Improve facilities at terminals and bus stops (especially toilet)

- Create awareness on the importance of opening windows while traveling in buses to protect the spread of communicable diseases.
- Give priority for some categories of people like elderly, disabled and so on.
- Increase the number of routes especially in the new expansion areas of the city.
- Control internal and external qualities of buses regularly.
- Should motivate employees so as to work their job with interest
- Limit maximum number of passengers that each bus to carry.

4.2. RESULTS OF INTERVIEW AND FGD

4.2.1. Interview and FGD with ACBSE Officials

⇨ Vision, Mission and Values of ACBSE

According to officials of ACBSE the vision, mission and values of the enterprise are the following:

i. Vision: to be the leading and commendable African Urban Transport provider and to see that the daily activities of the community are done in a sustainable and satisfactory level.

ii. Mission: providing modern, suitable, sustainable, and speedy urban transport service with an affordable price to the beneficiary community.

Besides , as the officials explained to realize its mission ACBSE performs the following activities ; undertaking re-engineering of works which can grow up its institutional capacity in light of its procedure , organization , and human resources , establishing service improvement system for handling customers complaints and suggestions and working in close collaboration with stakeholders and collaborators .

⇨ Opportunities of Anbessa

Officials of ACBSE mentioned during FGD and interview, the following points as opportunities of the Anbessa in delivering transport services for the society:

- large number of Passengers transported
- Fuel consumption is less to transport large number of people at a time

- Transport cost for the service of Anbessa is lowest
- Reduce the problem of congestion in the city
- The impact on Environmental pollution is less
- Bus network (having a known and a regular trip schedule)
- Deliver various services (e.g- technical service, advertisement , etc)
- Employment access for large number of people

⇨ Vehicles operation

According to the officials of ACBSE, most of the existing buses are DAF buses complemented by some from Holland and Belgium. The buses are a single deck with 30 seats and 70 standing capacities, so the total capacity of each bus is 100. They operate 15 hours per day. Besides, as they stated at the moment the fleet size of the enterprise is more than 500, but above 60% of the buses served more than eight years due to that they need maintenance regularly, however, on average 300 – 320Anbessa buses give service regularly per day. And 80 buses are under maintenance to give services. However , officials stated recently four buses (i.e- two harmonica or articulated and two standard) were entered and started to give the services and the remaining 496 buses are expected to join the enterprise until the end of this Ethiopian year, and Anbessa will have more than 800 buses in operation.

Moreover, as officials mentioned in FGD, so as to keep the internal and external condition of buses, Anbessa operates a complex preventive maintenance program, combining both time and distance related interventions. Buses are inspected both weekly and monthly and oils are changed at 7,500km and 21,000 km. And as observed by the researcher while conducting observation the enterprise has well organized workshop center for maintenance of buses and it also give services for external customers .

⇨ Staff of ACBSE

As officials of ACBSE, currently the enterprise has 2618 employees, out of these 884(33.8%) are women while 1734 (66.2%) are men. In addition, 81% of them are productive while 19% being supportive workers. In regards to the educational composition , officials of the enterprise

mentioned that 24 workers (0.9 %) are Degree Graduates , 153 workers (5.8%) college diploma graduates , 651 workers (24.9%) Technical and Vocational from 10+1 – 10+3 diploma graduates , 1245 workers (47.6%) secondary education and the remaining 545 (20.85) have primary education .

⇨ Employees' satisfaction

As officials stated during the discussion, the enterprise doesn't assess satisfaction of employees in their job regularly. How ever, the enterprise facilitates different training to employees so as to enhance their performance and skill to deliver quality service to the society. Besides, the enterprise gives various benefits such as education opportunities, free transport service, health services to encourage employees. However, as some officials stated during FGD staff turn over is high in the enterprise due to low scale of salaries as compared to other sectors and it has a reverse impact in the process of delivering quality transport services in the city .

⇨ Connection with Customers

According to ACBSE's officials the enterprise didn't study satisfaction of customers towards the level of services that delivered by Anbessa regularly due to mainly shortage of finance. However, the enterprise receive comments and suggestion about the service in a 'Customers day ', which is a special day that the enterprise celebrate together with some customers. Besides, as officials stated the enterprise receive comments from customers in various ways and the enterprise knows that most customers complain and didn't satisfy on the services of Anbessa . However, the enterprise is still struggle to reduce the problems and has a plan to improve the quality of the service and to satisfy all customers of Anbessa .

Regarding to the trend of the demand, they stated that due to fast growth of population in the city the demand is increasing from time to time. But due to various internal and external factors the enterprise couldn't satisfy all need of public transport services in the city.

⇨ Routes characteristics

According to the officials of ACBSE, the routes of Anbessa in the city are mostly radial routes; because it operates from the major and minor terminals to outer suburbs or towns beyond the city boundary. Anbassa currently operates on average 300-320 buses on 93 routes that not only encompasses the capital, but also the surrounding cities such s Akaki, Gelan, Dukem, Debrezeit, Burayu, Sebeta, Sululta and Legedadi . And the longest route is route number 60 which runs from Legehare to Debrezit (i.e 47.2km). The shortest is route number 49, which runs from Megengna to Meri CMC.

As officials of the enterprise stated during the discussion, Anbessa city buses provide services for 15 hours and serving over 650,000 passengers daily, making it one of the biggest provider of mass transportation in the country. A high proportion of routes are operated from the three major terminals of Anbessa. These are: Addis ketma (33 routes); Legehar (19 routes) and Menilik (9 routes). Others are out of the major terminals covering 32 routes.

⇨Accessibility

Similar to sample respondents (users), officials of ACBSE stated during the discussion that the services of Anbessa city bus is not easily accessible to some parts of the public , particularly to elderly, children , disabled people etc. This is because as they discussed , especially during peak hours due to the presence of excess demand the existing buses couldn't accommodate all passengers and the above mentioned people could suffer to obtain the service of Anbessa easily , but most of the time some drivers and conductors as well as passengers help them to get the service easily.

Furthermore, regarding the height of buses they mentioned that it is difficult to some extent especially for disabled and elderly people but the new articulated buses would reduce this problem. This is because as they explained the new articulated buses have some features ramps to ease embarking and disembarking for elderly, and physically challenged persons.

Moreover, regarding the waiting time the FGD participants pointed out that at the moment due to insufficient number of Anbessa buses and break down of large number of buses the enterprise

couldn't give the standard service .However, as they stated ACBSE believe that short waiting time and short walking distance play a significant role in persuading people to use public transport. Due to that at the moment there is a plan to minimize waiting time for Anbessa service by increasing the number of buses.

⇨ Information indicators

During the discussion , ACBSE's officials explained that there is a need and an attempt to give services for customers on scheduled time and the enterprise believed that Anbessa buses are operated on scheduled time tables, but due to a number of factors sometimes customers couldn't obtain services on scheduled time . Furthermore, as they stated information indicators are not found in all bus stops and terminals in adequate manner.

⇨ Availability of facilities and technical condition of Buses

As officials of the enterprise mentioned during the discussion, out of the total number of Buses that exist in the enterprise, more than 60% have finished 8 years of service. Due to that most buses doesn't have adequate internal facilities like tape/radio, ventilator etc. But some buses are technically at good conditions relatively as compared with the former ones, and recently four new Anbessa buses started to give service for the society with good facilities. Therefore, as participants of the discussion stated due to long age of buses it would be difficult to conclude Anbessa Buses have good facilities. Furthermore, during sessions of personal observation, it has been observed that most Anbessa buses lacks facilities like tape/radio, ventilator and so on.

⇨ Facilities to deliver comfortable and convenient service

As officials of ACBSE stated during the discussion regarding to facilities , the enterprise is delivering the city transport service in three bigger depots, three major and seven minor terminals, 16 posts and 1400 prepared bus stations .However , as they justified due to financial constraints the enterprise couldn't full fill all vital facilities in all terminals and bus stops . But at the moment more than 50 bus stops have shelters though they couldn't accommodate large number of people at a time.

⇨ Challenges of the Enterprise

During FGD and Interview, participants mentioned various factors that are considered as challenges for the enterprise in delivering public transport service to users. The challenges that mentioned by officials are listed as follows:

- Insufficient number of Buses
- Long duration for buses to stay at garage for maintenance
- Long process of purchasing in the enterprise
- Shortage of finance
- Inadequate and poorly managed terminals
- High employee turn over
- Damage of buses by accidents , congestion and inadequate infrastructure and facilities
- Low fleet reliability
- Tariff controls
- Insufficient accessibility of service
- Low affordability
- Disposal of scrap vehicles and obsolete spare parts
- Traffic congestion especially at peak hours causes problems to give adequate services to the society
- Reduction of subsidies which do not consider the enterprise expense
- A huge amount of income tax imposed by the government that doesn't consider the enterprise's relatively small revenue.

⇨ Measures designed by ACBSE

As officials of ACBSE mentioned during the discussion the following measures have been designed by the enterprise to improve the transport services that delivered by Anbessa city buses and satisfy the demand:

- The enterprise is on the process to purchase 500 new buses (450 regular and 50 articulated buses). But recently four buses (i.e. two standards and two articulated) were joined to the enterprise and started to give service.
- 80 Anbessa city buses are on immediate maintenance process to give service.
- Facilitate conditions for generating extra revenue in addition to related works (e.g advertisement)
- Establishing a structure that allows flexibility variation of the tariff system according to the factual situations.
- Improving organizational structure and procedure, which can enable beneficiaries, centered and completed by skilled work force.
- Implementation of BPR is on the way.
- The enterprise also plans to improve the quality of service it provides with Anbessa buses.
- Designing efficient and effective purchasing system to alleviate long process in purchasing of materials.
- Designing to improve various facilities and infrastructure at bus stops and terminals.
- Controlling the quality of the service and monitoring complains of the users of Anbessa buses.

4.2.2- Interview with AATA's Representative

➥ Roles and responsibilities of AATA

According to the representative of AATA the roles and responsibilities of AATA in managing public transport in the city are mentioned as follow:

- Promote the expansion of the transport service , cause the construction and administer bus and taxi stops and terminals
- Register vehicles , undertake annual technical inspection and follow up
- Organize individuals and enterprises engaged in transport services, design and implements mechanisms on the effectiveness of traffic management provide capacity building support
- Issue certificate of competence to individuals and enterprises engaged in transport and garage services

- Issue license to driving lesson institutions and trainers ,issue driving license
- Follow up and suspend the operation of vehicles that could affect the safety of the public
- Carry out other activities related to the cities transport services

➦ Public transport service providers in Addis Ababa

According to the representative of AATA, public transport in the city is delivered by a mixture of ownership structure, of which public and private operators are predominantly contenders for business. And the modes of urban transport system in the city are categorized in to motorized and non-motorized modes of transport. The modes of transport include buses, Mini-bus taxi, sedan taxi and the non – motorized transport include walking and animal carts dominant at the periphery.

In addition, as the representative specified, currently public transport system of the city comprises the following:

- The only public agency owned Anbessa city bus with current fleet size of 310 buses on 93 routes and with the capacity of 100 passengers.
- 8,750 Privately owned Mini –bus taxi with 12 seat capacity on 259 routes
- 500 Midi –bus (Higher) with a carrying capacity of 25 passengers
- 4000 sedan taxi with 5 seat capacity
- Non- motorized transport (walking)

➦ Contribution of Anbessa city buses

As stated by representative of AATA , Anbessa city buses play a great role in delivering public transport services for the majority of urban poor at lower price relatively as compared to others mode of transport . And it is the second cheapest mode of transport in the city next to walking.

However, as the official stated, AATA didn't believe that the enterprise totally satisfied the demand of public transport in the city. This is due to reduction of the number of operable Anbessa city buses and the imbalance between demand and supply of Anbessa buses the enterprise couldn't provide quality public transport service for all users and most qualities of the services are poor .

➦Challenges in public transport system of the city

According to the representative of AATA, there are a lot of challenges that affect public transport system in the city. Some of the major challenges are mentioned as follow:

- Fast growth of population and horizontal expansion of the city
- High growth rate of motorized vehicles
- Overlap of travel demand
- Increasing fuel costs
- Lack of skilled man power in the areas of traffic management, transport planning, traffic engineering, and operational management.
- Rising the price of inputs
- Increased demand of parking
- Shortage and low quality of transport services and facilities
- Poor quality of roads , pedestrian walkways
- Low affordability level of most urban citizens
- Absence of adequate data base and information system
- Imbalance between demand and supply of public transport service
- Large number of Mini-buses and Anbessa city buses are completing their economic life with no replacement investment
- High rate of congestion at peak hours , and hence high rate of traffic accident
- Non - motorized mode of transport is neglected in the design of urban transport infrastructure.

➦ Plans to improve public transport service in the city

According to official of AATA, the office designed various plans to improve the current situation of public transport service in the city. Some of the plans are stated as follow: to improve the existing transport situation of the city transport Authorities has developed a short, medium and long term transport plan.

☛ In short term plan the taxi zonal service would commence to enhance accessibility and to utilize this fleet efficiently and it was started recently. In addition, the purchase of 500 Buses

from these 50 articulated buses with 250 capacity and 450 standard buses with capacity of 100 passengers until July 2011is the other short term transport plan.

- In the medium term plan mass transport (i.e .the BRT, including the Light Rail Transit will commence.

- In the long term plan the under ground metro is going to be introduced.

More over, as the representative of AATA stated detail design of pilot project of selected corridor for Bus Rapid Transit is under preparation.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 – SUMMARY OF MAJOR FINDINGS

The research has assessed opportunities and challenges of urban public transportation system in the case of Anbessa city bus. Thus major findings of the study has presented in detail as follow.

5.1.1 – Opportunities

➞ **Passengers transported**: it refers that Anbessa carries about 8.3 times more passengers per km than a Mini – bus. It means that Anbessa city buses able to accommodate 30 passengers seated and a further 70 standing and operates with an average commercial speed of 18 km/hr. Besides, it carries most of the low income group and working population of the city , especially during peak hours .

➞ **Fuel consumption**: more fuel is needed to carry the same number of passengers by other Modes (e.g. Mini – bus) compared to Anbessa city bus. Thus, Anbessa deliver an opportunity to carry large number of people with less fuel .

➞ **Transport cost:** public transportation fares are regulated by the government. The transportation fare that Anbessa is charging is one of the lowest as compared to other motorized transport modes for similar trips, and this has made it the first and most preferred means of urban transportation for the majority of the population. Moreover, ACBSE has a flat fare system which varies with the length of the route. Depending on the route length, currently the fare level varies from 1.50 birr to 7.75 birr.And recently the enterprise establishing a structure that allows flexibility variation of the tariff system based on the factual situations.

➞ **Congestion**: loading capacity per Anbessa is about eight times that of Mini-buses and 20 times that of private taxis.This means that a single Anbessa bus can transport the same number of people as eight mini-buses and 20 private taxis .Thus , each trip made by bus reduced congestion and the total number of vehicles in the street . Besides, the cost of wasted fuel due to congestion in relation to the number of passengers is lower for Anbessa city bus, while for minibuses and

private cars the cost per individual is much higher especially during peak hours. So, due to its higher carrying capacity the cost of wasted fuel per passenger is lowest for Anbessa city buses.

➢Road Safety

Data from Addis Ababa traffic police office shows that the total number of accidents that occurred in 2009 was as follow.

Table 5.1 road accidents (2009)

Types of accidents	***Total***	*Private car*	*Commercial station wagon and pick up*	*Heavy trucks*	*Private taxi*	*minibus*	***Anbessa bus***	*Collective taxi*	*Other*
No. of total accidents	**7,523**	2,010	1,740	719	1,174	329	**141**	639	771
No. of fatalities	**371**	45	46	53	83	24	**9**	39	72
No. of injuries, serious	**731**	150	148	51	158	32	7	49	136
No. of injuries, light	**576**	159	123	27	133	35	**5**	29	65
No. of properties damaged	**5,845**	1,656	1,423	588	800	238	**93**	522	525

Based on the above data, Anbessa city buses are in best position in terms of road safety. Anbessa buses have unique features in delivering services as compared to other mode of transport and it has a known and regular trip program. Thus it guides the operations with a predetermined travelling speed. More over, the enterprise provides different training for drivers so as to improve their skills and minimize the risk of accidents.

➞**Environmental pollution :** Though it is difficult to present data on the magnitude of air pollutants corresponding to each mode of transport in the city , it is clearly understood that a mass transportation system has a far better impact on air pollution than any other less collective mode of transportation system. Similarly, Anbessa's vehicles have a large capacity and transport large number of passengers at a time than eight minibuses or 20 private taxis. So, using buses reduce local pollution.

➞**Bus Network**: ACBSE has a known and regular trip program. Besides, it has three large depots, three major and seven minor terminals located in the center of the city from which services are generated and 1400 bus stops through out the city .(The list of routes and route length are given at Annex section)

Finally, ACBSE provide the following major services to the society and these can be considered as good opportunities for the society as well as the enterprise. The services are contract transport service, advertisement, mobile crane service, school bus service and technical services.

5.1.2. Challenges of Anbessa

➞ **Role conflict**

There is a basic conflict; in the perspective of role of the enterprise i.e. is Anbessa a commercial organization or a service organization? The Federal Government views road transport as commercial activity in general, while the City Administration sees Anbessa, as a service organization for the urban growth and provides substantial subsidies for its survival. But there is a need to resolve the role conflict. If it is considered as commercial organization, the control on tariff need be withdrawn and Anbessa allowed charging economic fares. If it is considered as service organization, the subsides have to continue and enhance in some form or the other and the government shouldn't delay in delivering the subsides to the enterprise.

➞**Disposal of scrap vehicles and obsolete spare parts**

There are large number of scrap vehicles and huge obsolete stores waiting for disposal. These are waiting for over a decade. Some of the basic reasons are, the 260 buses and service vehicles

transferred to Anbessa from P.T.C. are still registered under the name of P.T.C. There are no records for many vehicles. A significant amount of spare part stocks received from former P.T.C. is obsolete and is not being used. The value of these stores need be written off.

➞Uncertain capital grants

Anbessa does not have assured source of finance, for capital expenditure like purchase of buses, construction of depots, purchase of machinery, tools and plant etc though public transport demand is growing by leaps and bounds. Even for meeting revenue expenditure Anbessa heavily depends on subsidy granted by the city Government. As the fare level is controlled by city Government the scope for increasing the revenue is limited, while cost of inputs like fuel, tyres, spare parts, etc are having prices hikes year after year. As a result, the accumulated losses of Anbessa are mounting up and even the survival is questionable. Furthermore, the enterprise has relied on grants from Netherlands Government and the state for capital expenditure financing. There are also civil engineering capital works pending in Depots.

➞High staff turnover

There is high turnover of drivers, technicians and some professional staff in the enterprise. This is mainly because Salaries are not competitive for these positions in Anbessa .

➞ Low fleet reliability

The fleet reliability is low due to some technical problems and ineffective maintenance system. Besides, the poor vehicle condition has become a major constraint, to realize the revenue forecasted for the fleet size.

➞ Lack of Infrastructure

One of the major challenges of Anbessa is lack of proper and adequate infrastructure. The bus stops about 1400 in number don't have shelters, the terminals also lacks proper passenger amenities. The transfer of passengers takes place at the terminals, and there is need to make the transfer more convenient to passengers by creation of proper infrastructure. Similarly, the yards of shegole depot and Mekanissa depot are not paved. This affects quality of maintenance.

Similarly, the bus bays, on the important roads improve speed of buses and cause less inconvenience to other traffic on the carriageway. All these infrastructure facilities costs money, which Anbessa doesn't have and consequently the enterprise is put to loss and customers get poor service.

⇀Terminals

The infrastructure for all terminals is bare minimum. The terminals are over congested and don't have any modern civilized facilities, such as ladies toilets, information centers, and so on.

⇀Lack of Public Transport policy

There is no coherent policy framework supporting public transport expansion. There is need to give priority for buses at traffic junctions, and to provide bus lanes on high corridors to improve the productivity of bus system.

⇀Lack of appropriate regulation and enforcement: bus priority measures, bus only by pass, etc.

⇀Over loading of Anbessa buses beyond its capacity

⇀ There is weak coordination among departments within the enterprise due to organizational structure of the enterprise and also with external institutions like transport authority, traffic police etc.

⇀Most of controlling mechanisms for the operation of public transport service is manual. It might have a diverse impact on efficiency.

⇀Poor transport infrastructure and facilities: e.g – narrowness of roads

⇀Inadequate number of buses in the enterprise and less availability of the existing buses.

5.2 CONCLUSION

The main objective of this study is to assess the opportunities and challenges of public transportation system by emphasizing on Anbessa City Bus Service Enterprise. The study tried to observe the existing public transport system in the city, identifying the major challenges that hinder the smooth functioning of Anbessa city buses, observe opportunities of the Anbessa buses in public transportation system of the city, and assess the level of services provided by ACBSE.

Hence, based on the result of this study, public transport system of the city comprises state owned Anbessa city buses with current fleet size of 300-320 buses on average with 93 routes, privately owned mini buses taxis around 8,750 with 259 routes, higher buses, sedan taxi, and private cars. Besides, walking is one of the dominant non motorized modes of transport in the city. Anbessa city buses and Mini-bus taxi are the dominant public transport modes in the city. However, the existing public transport system in the city is critically inadequate to deliver services for the existing travel demand and characterized by congestion and delay, increasing road accidents, inadequate transport facilities and infrastructure, poor vehicles conditions, and uncomfortable traveling conditions.

As findings of the study indicate the overall performance of Anbessa city bus is hampered due to a number of problems. The most challenges that hinder the smooth functioning of the enterprise were low number and technical fitness of most vehicles , over loading of buses , long duration of buses at the garage due to shortage of spare parts, high staff turn over , lack of facilities and infrastructure , low fleet reliability , tariff control , conflict in the role of the enterprise , disposal of scrap vehicles and obsolete spare parts , longevity of purchasing process , traffic congestion , Anbessa as a limb of government, lack of public transport policy, and lack of appropriate regulation and enforcement .In addition, the enterprise is facing serious challenges in running its operation. The increasing cost of the operation (especially the cost of fuel and lubricant, spare parts, tires and inner tubes) has caused the enterprise to operate with financial constraints. Besides, this study shows the enterprise is not profitable and mainly depends on subsidy granted by the city administration.

Although the above mentioned problems were influencing the performance of Anbessa , it has also some opportunities in public transportation system of the city. Thus as the finding of the study indicates, it has some opportunities on transport cost, fuel consumption, road safety, carrying capacity, congestion, environmental pollution, bus network, and services like advertisement , mobile crane services , etc.

The study results indicate that most of the respondents are not satisfied with availability of sufficient number of buses, reliability of buses, treatment of conductors, qualities of bus stops and terminals, and other qualities of public transport service. Besides, most of the respondents walk to and from bus stop / terminals above the standard of World Bank to get the service of Anbessa and the waiting time to get the service is also long. Moreover, the study revealed that the majority of respondents complain on lacks of information indicators at bus stops and terminals; pick pocketing problems, lack of comfort inside the buses, and inadequate number of buses and overloading of buses .

To sum up, regarding the level of services of Anbessa, the finding of this study shows that most respondents replied negatively to most indicators of qualities of public transport. This indicated that most customers didn't satisfied on the qualities of services that delivered by Anbessa city buses. Moreover, this study indicated that overloading, long waiting time, lack of information indicators at bus stops and terminals, inadequate facilities and infrastructure were some of the major problems that affect their decision to use Anbessa city buses.

5.3 - RECOMMENDATIONS

Based on the discussion and analysis of the findings and conclusion the following recommendations have been forwarded:

➥Identifying the role of the enterprise is a critical issue that should be solved because the enterprise is found in confusion of its role (i.e. commercial organization or service organization).Therefore, so as to enhance its performance and to give quality services for customers the government should give the right for the enterprise to run its business as a commercial organization. Moreover, the enterprise should be regulated based on competition.

➥ The enterprise should formulate a policy in collaboration with the government and other concerned bodies for replacement of vehicles and scrap them. And the policy could be based on either time (service years) or Kms operated. Because these scrap vehicles can bring substantial money to the enterprise, if they are sold at appropriate time and it contributes to profitability of the enterprise.

➥Financial constraint is one of the main challenges that affect the general performance of the enterprise for many years. Therefore, ACBSE should take the following action to reduce the problem of finance in the enterprise:

- Create a strong linkage with foreign donors, stakeholders, government and private sectors to get financial and material aids.
- Enhances conditions for generating extra revenue through advertisement, technical services, and mobile crane services and so on. Besides arrange situations for the avoidance of deteriorated and old materials in systematized and in a condition that generates additional revenue.
- Improve the quality of services that delivered by the enterprise to attract customers; e.g – reducing waiting time, operators should treat customers positively, put information indicators at important places and so on.

➞Inadequate number of Anbessa city buses is also one of the major problems of the ACBSE in delivering its service for the society. Hence, the enterprise should enhance the number of buses in collaboration with the government and other stake holders, donors and so on. It has a positive effect on the demand and supply side:

- On supply side, it would be vital to enhance profitability through delivering services by increasing the number of routes and its frequency. On the other way, the enterprise would get more subsidies from city administration by enhancing the number of passengers per day.
- On the demand side, it would reduce the problem of overloading, reducing waiting time, and in general the service becomes reliable and convenient. So it encourages people to use the service of Anbessa .

➞So as to alleviate the problem of high staff turnover, ACBSE should improve scale of salaries, and facilitate situations to give additional benefits to employees like education opportunities, training and others with out any discrimination and in a better way to handle experienced workers .This is because with out satisfied employees it would be difficult to give quality services for customers. Furthermore, the city government should enhance the amount of subsidy for the enterprise so as to reduce the problem of finance.

➞Lack of infrastructure and facilities is the other major issue that needs a great concern by the enterprise. There fore, to give quality services for users and to reduce complain of users the enterprise should improve the following facilities in collaboration with private sectors and other concerned bodies:

- Major terminals should be enlarged to avoid the problem of congestion and basic facilities (e.g. toilets) should be constructed.
- Adequate shelter and space should be built for passengers at bus stops and terminals
- Adequate information indicators should be put at bus stops and terminals clearly so as help users to use their time efficiently.

➞At the moment ACBSE treats all passengers as one segment, though their incomes vary, their occupations vary, and their needs vary from segment to segment. Therefore, it is better to identify the number of buses or routes that gives services for some categories of people in special cases. such as students, women, etc. if there is adequate load. The segmentation helps to identify the needs of different groups of people and design bus services to meet such needs. On the other way, it also helps to reduce the problem of inaccessibility for some categories of people especially during peak hours.

➞ACBSE should implement flexibility variation of tariff system for all routes at different distances so as to enhance profitability of the enterprise.

➞The enterprise should improve the organizational structure of the enterprise and create strong linkage among departments of the enterprise and also with external institutions.

➞ The enterprise should create a strong linkage with security forces (police) especially at major terminals and crowded bus stops so as to keep safety of passengers or minimize the problem of pick-pocketing (thief).

➞More over, the government and other concerned bodies should design and implement public transport policy so as to improve service delivery of public transport in the city.

In addition, emphasis should be given to;

- Route specific subsidy so as to improve profitability of the enterprise
- Develop mass public transport such as LRT, BRT, etc.
- improve non –motorized transport facilities and infrastructure
- Implementation of off – street parking
- Encourage and facilitate the involvement of private sectors in urban public transportation system.

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Appendix 1 – Questionnaire for Anbessa City Bus Users

Addis Ababa University

College of Development Studies

Department of Urban Development and Management

Questionnaire for Anbessa City Buses – Users

The purpose of this questionnaire is to collect data that will be used as an input to conduct educational research entitled with "Opportunities and challenges of Urban Public Transportation System in the case of Anbessa city buses in Addis Ababa "Therefore, your cooperation and willingness in giving genuine answer for the questions is highly important to achieve the overall objective of the study successfully.

Thanks in advance for your cooperation!

Part – One : General Information of Respondents

Instruction : please indicate your answer by putting ' X ' mar*k* in the given spaces.

1.1- Sex:

1- Male ..... ☐ 2- Female ..... ☐

1.2- Age:

1- Under 15 years ..... ☐ 4. 45 – 60years ....☐

2- 16- 30 years ..... ☐ 5. ≥ 61 years .....☐

3. 31- 45 years ..... . ☐

1.3 - Educational level

1. Illiterate ..... ☐

2. Primary (grade 1- 8) .....☐ 6. Certificate .....☐

3. High school (grade 9-10)..... ☐ 7. Diploma .....☐

4. Preparatory (grade 11-12) .....☐ 8. Degree and above .....☐.

5. College / university .....☐

1.4- Monthly Income:

1. Less than 500 birr ..... ☐
2. 501 – 1500 birr .....☐
3. 1501 – 2500 birr ..... ☐
4. 2501 – 3500 .....☐
5. More than 3501 ..... ☐

1.5- Employment Characteristics

1. Self employed .....☐
2. Government employee .....☐
3 . Private sector employee..... ☐
4. Student ..... ☐
5. Unemployed .....☐
6. Retired ..... ☐
7. If other specify _____

Part Two - Respondents Response on Public Transport (Anbessa city bus)

2.1- Which transport mode do you usually use?

1- Walking ..... ☐
2- Bicycle ..... ☐
3- Taxi ..... ☐
4- Anbessa city bus.....☐
5- Private car .....☐
6- Others .....☐

2.2- Do you use more than one mode?

1- Yes .....☐
2- No ..... ☐

2.3- If your answer for question number 2.2 is 'yes 'explain the type of mode and why?

_____

_____

2.4 – How often do use Anbessa city bus?

1- Very often ..... ☐
2- Often..... ☐
3 - Less often ..... ☐

2.5- Why do you prefer Anbessa buses than other modes?

1- Due to its less fare.....☐
2- Due to its comfort .....☐
3- Due to time efficiency .....☐
4- Due it its safety .....☐
5- If other, specify _____

2.6- How many connection do you make with Anbessa city bus before reaching your destination?

1- One ..... ☐ 3- Three ..... ☐

2- Two ..... ☐ 4- More than three ..... ☐

2.7 – If it is more than one connection, why? _____

_____

2.8- For what purpose do you use Anbessa city bus transport service? (Rank them)

1. Education.....☐
2. Work .....☐
3. Shopping .....☐
4. Family visit .....☐
5. Leisure .....☐
6 .other _____

2.9- Is the price charges for Anbessa city bus service is affordable for you ?

1. Yes ..... ☐
2. No ..... ☐

2.10- How much do you spent in Birr for public transport (Anbessa bus service) in a week? _____

2.11- How do you assess the weekly expenditure on public transport?

1- Very minimum ..... ☐ 4- High ..... ☐

2- Minimum ..... ☐ 5- Very high .....☐

3- Normal ..... ☐

2.12 -How do you explain availability of sufficient number of buses?

1. Excellent .....☐ 4. Poor .....☐
2. Very good .....☐ 5. Very poor .....☐
3. Good.....☐

2.13- .How long do you wait at the bus stops or terminals?

1- Less than 5 minutes .....☐
2- 5 to 10 minutes.....☐
3- 10 to 20 minutes .....☐
4- More the 20 minutes ..... ☐

2.14- On average, how long do you walk to reach the bus stop or terminals?

1- Less than 500 meters ..... ☐

2- 500 to 1000 meters ..... ☐

3- More than 1000 meters ..... ☐

2.15- How do explain arrival of buses on time (i.e . on scheduled time)

1- Very poor .....☐ 4- very good .....☐

2- Poor .....☐ 5- excellent .....☐

3- Good.....☐

2.16- How do you assess the reliability of Anbessa buses when ever you need to travel?

1- Very reliable ..... ☐ 3- less reliable ..... ☐

2- Reliable ..... ☐ 4- least reliable ..... ☐

2.17- Do you think that Anbessa service is easily accessible to all parts of the public (i.e elderly, pregnant, disabled , etc)

1- Yes ..... ☐ 2- No ..... ☐

2.18- If your answer for # 2.17 is No, what makes it less accessible? _____

_____

_____

2.19- Explain availability of accurate indicator information at bus stops and terminals?

1- Very poor .....☐ 4- very good .....☐

2- Poor .....☐ 5- excellent .....☐

3- Good.....☐

2.20- As a user of Anbessa city buses, how do you evaluate the following points ?

A. The physical condition of vehicles

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

B. Comfort conditions inside the buses (e.g. Seating and standing) :

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

C. Cleanliness conditions of Anbessa buses :

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

D . Engine noises

1- very noisy ..... ☐ 4- good .....☐

2- noisy ..... ☐ 5- excellent .....☐

3-normal .....☐

E- Road conditions

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

F. security from being robbed at bus stops and terminals and on buses

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

G. ability of drivers in operating buses smoothly and safely

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

H. willingness of operators to exchanging information with passengers

1- very poor .....☐ 4- very good .....☐

2- poor .....☐ 5- excellent .....☐

3- good.....☐

I. Crowding

1- Over crowded ..... ☐ 3- Required capacity ..... ☐

2- Moderately over crowded.....☐ 4- least capacity .....☐

J .Music

1- very much loud ..... ☐ 4- normal ..... ☐

2- moderately loud..... ☐ 5- no music .....☐

3- loud ..... ☐

21- How do you assess the quality of bus stops for Anbessa in terms of protection from rain and the sun ?

1- excellent .....☐
2- very good .....☐
3- good.....☐
4- poor .....☐
5- very poor .....☐

22- Would you mention some challenges that discourage you from using Anbessa city bus?

_____

_____

_____

23- What do you suggest for ACBSE to improve the service and solve the problem of public transport in the city ?

_____

_____

_____

Thank you Once again for devoting your Precious time!!!!!!!!

Appendix 2: Interview questions used with ACBSE officials

⇨ General

1.1. What are the plans of your enterprise? (Vision, mission and goal)

1.2. How Anbessa public bus get supports form AATA or other organization?

1.3. What opportunities are here in Anbessa city buses in delivering public transport service to the society?

⇨ Vehicles

2.1. What is the fleet size/ total number of buses and their type?

2.2. Are they operational? (Yes/no)

2.3. If No, how many buses are operational at the moment?

2.4 .What are the reasons for those in operations?

2.5. How many are under maintenance?

2.6. How many are totally out of service?

2.7. What is the capacity of each vehicle?

⇨ About Employees

3.1. How many staff do you have? .....

Sex: Male: ..... Female: .....

Productive employees _____

Supportive employees _____

Educational level of employees?

3.2. Does ACBSE undertake assessment of employee's satisfaction? If yes, are employees satisfied with the things (e.g. salaries, benefits, rewards) that provide by ACBSE?

3.3. Does ACBSE provide training to its employees? Yes / No? If yes how?

⇨ Service delivery of the enterprise

4.1.Is the service easily accessible to all parts of the society ?

4.2. How does the enterprise evaluate the frequency and coverage of the service in the city?

4.3. How many routes do you serve?

4.4. What is the frequency of service?

4.5. What are the average waiting time, and walking distance?

4.6. Do you provide service on time according to the schedule?

4.7. Is the trend of demand for Anbessa increasing/ or deceasing? Why?

4.8 Does you service follow the demand pattern or not?

4.9. Is the service reaching the demand? If No, how does your service address spatial equity?

4.10. How does ACBSE see availability of facilities in buses and technical condition of buses?

4.11. How does ACBSE observe the availability of facilities (such as waiting facilities, toilet, information, etc at bus stops and terminals, road and pedestrian facilities) to deliver comfortable and convenient service?

4.12. What are the major challenges of ACBSE in giving services to the society and to achieve its objectives?

4.13. What measures have been designed by ACBSE to be implemented to improve the service?

Appendix 3 - Interview questions for AATA officials

1. What is the role and responsibility of the Authority in managing public transport service in the city?
2. Who are the providers of public transport? Private / public/ mixed?
3. How Anbessa buses get support from the authority?
4. Is Anbessa transport coverage in time and space the same in the city? yes/No
5. What is the contribution of ACBSE in achieving the objectives of AATA?
6. How does the authority evaluate the service delivery of ACBSE in terms of customer satisfaction? Are customers satisfied with the service?
7. How could AATA see the affordability of the service of ACBSE?
8. What strategies are set to improve the Public Transport service in the city?
9. What are the challenges faced in providing better public transport service in the city?
10. What are the causes for ineffective public transport system the city?

Appendix 4 - Guiding questions for Focus Group Discussion / FGD /

1- How do you explain the current situation of ACBSE?
   - transport suuply : on services delivery
   - transport demand

2- Is there any support by from Federal Government or AATA or other stakeholders to enhance the performance of your enterprise ?

3- What are the major opportunities that delivered to the public by Anbessa?

4- Do you think that ACBSE provide sustainable service to the society? If not why? If yes how?

5- What do you say about the quality of service delivered by Anbessa city bus?

6- Do you think the income or revenue you are generating from Anbessa city bus is sustainable? Is it profitable?

7- What are the most important challenges that you are facing currently in running the enterprise?

Appendix 5: Buses Network for Anbessa city buses

Table 4.5 –Origin, destination point and distance

Line No	Start	Destinations	Distance / Km
1	Kazanchis	Addis Ketema	8.1
2	Kore Mekanisa	Addisketema	11.1
3	Ayer tena	Minilik Adebabay	10.8
4	Kaliti	Addis Ketema	19.4
5	Korie Mekanisa	Minilik square	12.7
6	Kera	Semien Addisu gebeya	9.9
7	Megenagna	legetafo	15.5
8	Semien Gebeya	Addisketema	9.4
9	Bole School	Piassa	9.4
10	Kotebe Teachers college	piassa	12.7
11	Messalimia	Minilik Hospital	10
12	Ferensai film Center	Addisketema	9.9
13	Bela	Addisketema	8.9
14	Saris abo	Piasa	12.3
15	kazanchis	Addis ketema	8.3
16	Kidane Mihret	Addisketema	7.9
17	Kuskuam	Addisketema	9.1
18	Keranio	Addisketema	7.3
19	Asko	Piassa	9.7
20	Dil ber	Addisketema	6.3
21	Fetino Derash	Addisketema	5.5
22	Samit legehar	Addis ketema	12.3
23	lamberet	Addisketema	12.4
24	Burayu	Degol square	17.7
25	legehar	Akaki	19
26	Addisketema	Sebeta	23.5
27	legehar	saris abo	8.5
28	Asko sansuzi	Addisketema	11.1
29	Addisu sefer	Addisketema	12.7
30	Sululita	Addisketema	28.8
31	legehar	Shiro meda	7.4
32	Hana Mariam	legehar	10.6
33	Kotebe Gabriel	Arat Kilo	11.4
34	Gofa camp	Addisketema	9.8
35	Cherkos	Addisketema- Mesalemia	6.7
36	Kara Kore	Legehar	11.7
37	Keranio	Minillik square	12
38	Gofa Camp	6 kilo	11
39	Bole School	Addis ketema	9.6
40	Kara alo	Addis ketema	17.9

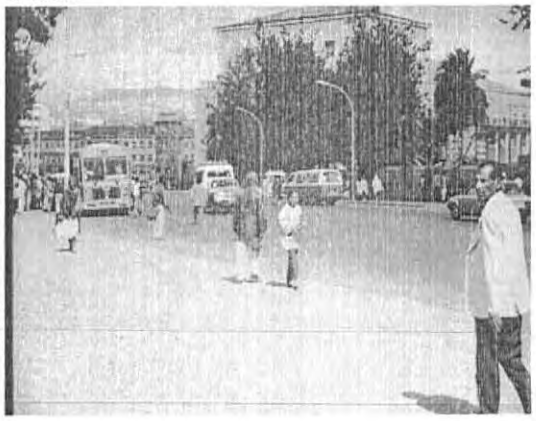
41	Eyessus	merkato	8.5
42	Megenagna	bole - leghar	9.8
43	Menagesha	Mercato	30.2
44	legedadi	Merkato	30.4
45	legehar	Dil bir	8.6
46	Gergi	Arat kilo	11.2
47	Yenegew fire school	Mercato	8.3
48	Bole Michael square	Minilik	10.9
49	Meri CMC	Megenagna	6.8
50	Total No 3 mazoria	Megenangna	12.1
51	Behere Tsege	legehar balcha	8.1
52	Gergi	Mercato	14.1
53	Bole	Shiro meda	11.5
54	Lafto	legehar	9.5
55	Legehar	Ferenci kela	7.9
56	Saris Abo	Shiro Meda	14.2
57	Kara	legehar	14.4
58	legehar	World bank	12
59	Betel hospital	Minilik square	11.5
60	Debre zeit	Legehar	47.2
61	Meri CMC	via kazanchis-legehar	13.8
62	Sebeta	Legehar	23.8
63	Bole michael	wello sefer	9.1
64	Sidist kilo	via Megenagna Gorf Aswgai	9.5
65	Mercato	World bank	11
66	Addisketema	Kara kore	10.5
67	Mekannisa square via. ring road	legehar	10.2
68	Minilik hospital	Torehailoch	10.6
69	Kasanchis	Merkato	12.4
70	Kazanchiss	Ayertena	11
71	Bole gumruk	balcha hospital	10.6
72	Adisu sefer saris	legehar	13.3
73	legehar	Winget school	9.6
74	michael cmc	via ghion-mercato	13.3
75	Sidist kilo	Kera	10.4
76	Megenagna zerihun building	saris abo	12.1
77		saris Abo	13
78	Ayer tena	Gofa kamp	12.4
79	megenagna	Balcha hospital	11.4
80	megenagna	meganegna	12.4
81	Semien Gebeya	yenegew fire school	10.7
82	Arat kilo	Balcha Hospital	14.6
	Yerer ber		

83	CMC	Sidist Kilo	14.8
84	Kolfe	Legehar	9.5
85	Addis Ketema	holeta	36
86*	Ayertena ring road	Saris abo (Training center)	13
87	Kolfe square via ring road	Ayer Tena	10.5
88	Addis Ketema	Chancho	40
89	Addis ketema	Sendafa	44
90	Betel Hospital	Legehar	10
92	Hana mariam dildiy	Balcha Hospital	9.6
93	Bole bulubula	Megenagna	12.1

Source: Addis Ababa city bus service enterprise

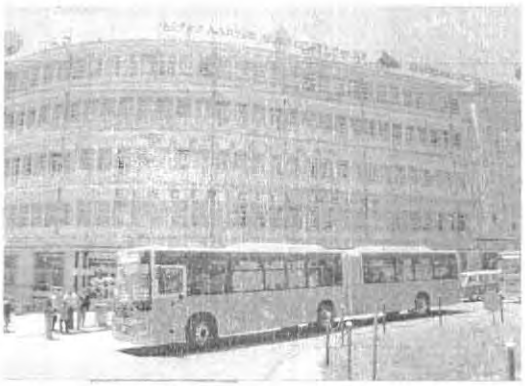
Appendix 6 – partial pictures for Anbessa city buses

Partial photo for some Anbessa city bus service

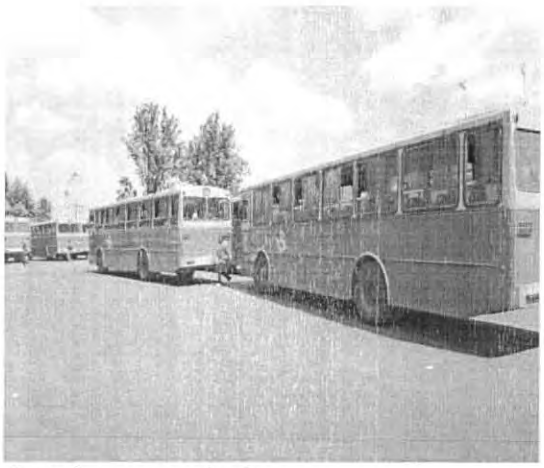


Ticketing system

Some bus stops



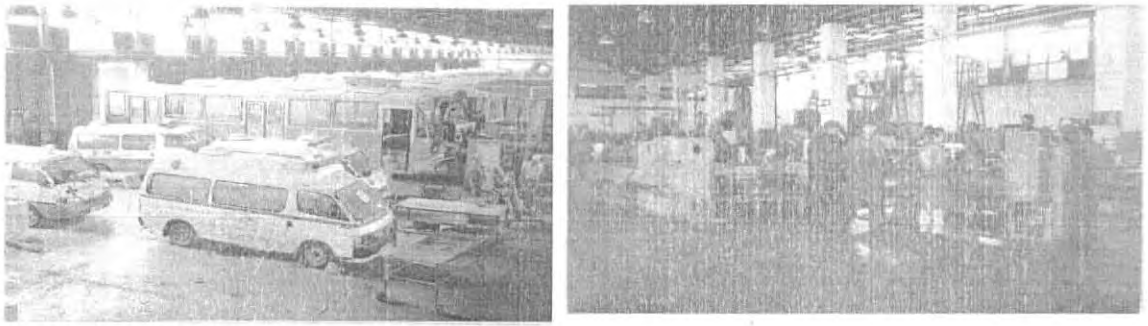
The new arrived Anbessa city buses



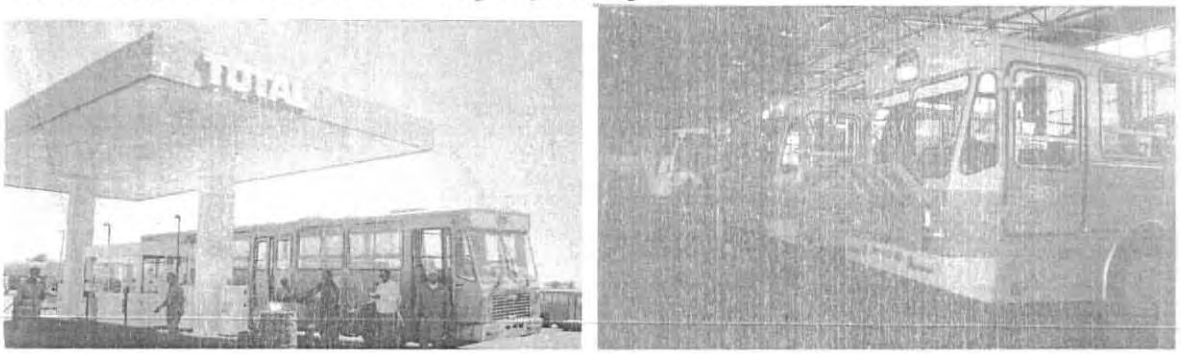
Legehare terminal

Megenjna terminal

some feature of congestion at terminals



Partial features of centeral work shop at yeka depot



DECLARATION

I, the undersigned, declare that this study is my original work and has not been presented for a degree in any other university, and that all sources of materials used for the study have been duly acknowledged.

Declared by:

Name Mujeeb Girma

Sign

Date 11-11-03 E.C.

Confirmed by Advisor

Name

Sign

Date