

## **Assessment of Customer Satisfaction in Transportation Service Delivery: The Case of Three Terminals of *Anbassa* City Bus Service Enterprise.**

**By**

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### **Abstract**

This study is undertaken to assess the level of satisfaction of customers about the transport service provision of ACBSE.

The study indicates that buses are aged, there is high breakdown of buses, very limited supply of buses, and existing buses are not operating as per the schedule. Therefore, the service is found not reliable and safe. Excessive waiting time and long walking distance to reach the service make it inconvenient. Moreover, high overcrowding and pick pocketing make it uncomfortable and insecure. Correspondingly, the quality of the service is poor and customers are not satisfied about the transport service of ACBSE.

## Background of the study

Palmer and Cole (1995: 34), state that “Service is the production of essentially intangible benefits [...] which through some form of exchange satisfies an identified consumers’ need”. Consequently, there are service providers to satisfy customers’ needs.

Rosander (1985), Daniels (1993), and Zeithaml and Bitner (2004) have grouped transportation under the category of services. Transport provides a means of moving persons from one place to another, for instance to get to work place, school, shopping, social and entertainment places, etc. Thus, it would be possible to say that, people use transport to satisfy a particular need, i.e. the need to get to work or school, etc, and back to home (Bamford and Robinson, 1978; Wood and Johnson, 1989).

In Addis Ababa, which is the capital city of Ethiopia and the seat for African Union, transport service is being delivered to the public through publicly owned Anbessa City Bus Service Enterprise (ACBSE) and different privately owned vehicles, such as small buses and taxis. As a public enterprise, ACBSE has its own contribution to address the transport demands of the people (customers), particularly of the poor, who cannot afford other alternative modes of transportation. The demand for transport service, however, has been increasing from time to time. Demand and supply of transport services could not be reconciled. This can be evident from long line up of people along the roadsides of Addis Ababa.

Therefore, the researcher has attempted to assess whether ACBSE is delivering quality transport service to the public with adequate capacity that can meet and satisfy their requirements and reached at valuable conclusion and recommendations, following the findings of the research.

## Statement of the Problem

As World Bank (2002: 22) states, “[---] cities are the engines of economic growth in most developing countries, and that urban transport is the oil that prevents the engine from seizing up”. As cited in (<http://www.nctr.usf.edu>), Button noted that, improvement in transportation can make cities much more efficient and productive. The city of Addis Ababa is not an exception as far as it is the economic and political centre of Ethiopia, the diplomatic centre of Africa and the seat for many international organizations. Therefore, the role of transport in running economic, social and political activities smoothly could not be easily valued.

Most trips in Addis Ababa are carried out using public transport and on foot. Sixty percent (60%) of the population are walkers (SABA, 2005). The major modes of public transportation in Addis Ababa are buses and taxis. Transportation service is being delivered to the public through publicly owned ACBSE, and other privately owned vehicles, such as small buses and taxis. ACBSE gives transport services for 10.9 % of the total population (SABA, 2005).

The population of Addis Ababa is increasing significantly and the size of the city is expanding horizontally. As the number of population increases, the numbers of passengers using public transport also increases. To accommodate the increasing numbers of passengers, transport service is expected to expand. However, the supply of transport service is not proportional to the demand. Due to limited numbers of buses as well as routes, poor people who cannot afford for other modes of transport are exposed to walk long distances, and longer waiting and travel time (SABA, 2005).

During peak hours, the demand extremely exceeds the supply of service. At this time, many people are waiting for transport service for long time and there is hard struggle to get the service. Furthermore, buses are overcrowded and operate without closing their doors, which may expose passengers to accident, suffocation, pick pocketing and communicable diseases. It is also too difficult for the elderly, pregnant, patient and disabled people to get the service. Hence, this research has assessed the over all level of satisfaction of customers taking quality indicators of bus transportation service as parameters and forwarded recommendations for improvement.

### **Research Questions**

The major research questions addressed in this study are:

- 1 What is customer's opinion in terms of satisfaction about the quality of the transport service provided by ACBSE?
- 2 Why ACBSE could not be able to meet the demands of customers?

### **Research Objectives**

The major objective of this thesis is to examine the level of customer satisfaction in transport service delivery provided by ACBSE.

The specific objectives of the study are to:

1. Evaluate whether ACBSE meets the demands of customers,
2. Identify major challenges of ACBSE to meet the demands of customers,
3. Create awareness to those concerned bodies by portraying the intensity of the problems and
4. Provide hints as to how the problems can be resolved.

## **Scope of the Study**

ACBSE provides transport service across the centre of Addis Ababa, to the outer surroundings of Addis Ababa and the town of *Jimma*. Due to financial and time constraints, the scope of this study is limited only to ACBSE in Addis Ababa on the three main terminals in Addis Ababa-*Merkato*, *Legahar* and *Megenagna*.

## **Limitation of the Study**

ACBSE provides transport service across the center of Addis Ababa and to the outer surroundings of Addis Ababa by operating from four main terminals (*Megenagna*, *Legahar*, *Piassa* and *Merkato*). It also provides transport service to the town of *Jimma* and other services such as transport and contractual service, crane, advertising and technical services to external customers. Moreover, according to second quarter performance report of ACBSE (2001 E.C), the daily customers of ACBSE in Addis Ababa are about 294,995.22 passengers.

However, this study is limited only to public transport service delivery of ACBSE in three terminals (*Megenagna*, *Legahar* and *Merkato*) by taking 250 sample customers from these terminals. Therefore, even though the researcher believes that the thesis contains reliable data on the transport service delivery of ACBSE and customer satisfaction, it does not mean that the study is free from limitation and all the above shortcomings of the study may affect the outcome of the findings and the generalizations to be made.

## **Research Method**

### **Data Source and Techniques of Data Collection**

In this study, the researcher has used primary data to get relevant information about the study.

To collect data the researcher has used questionnaire (open and closed ended) that was distributed to customers. Semi structured interview was also addressed to the concerned officials of ACBSE to get further information about the status of the service.

### **Data Analysis**

The data collected from customers, officials of ACBSE, and field observation are analyzed using SPSS version 15 for data management with simple descriptive statistics. In the analysis, both qualitative and quantitative approaches are used to analyze the collected data.

### **Sample Size and Sampling Techniques**

ACBSE operates from four main terminals, namely, *Megenagna*, *Legahar*, *Piassa* and *Merkato* across the centre of the city and to the outer surroundings of the city. Due to financial and time constraints and the large number of ACBSE's daily customers, which is estimated to be 294,955, the study is limited to *Legahar*, *Megenagna* and *Merkato* terminals. Within the available time and budget, it would be difficult and unmanageable to take 10% or 5% of them. As a result, only 250 customers are randomly selected from the selected terminals. To avoid personal bias and to get representative sample, every fourth route which operates from these terminals in Addis Ababa were selected using systematic sampling technique and on average 23 passengers are randomly selected from each of these routes. Finally, three representative officials from ACBSE were selected using purposive sampling technique to get some facts about the status of the service.

### **Structure of the paper**

This thesis is divided into four major chapters. The first chapter is introduction that includes background of the study, statement

of the problem, research questions, objectives of the study, scope of the study, and research method. The second chapter deals with the literature review. It includes theories and concepts related to transportation and service delivery. The third chapter deals with data presentation and analysis using tables, pie charts and bar graphs. The last chapter outlines the conclusion and recommendations of the study.

## **Review of Literature**

### **Introduction**

Reviewing the theoretical aspects of the study is essential to make proper assessment of any subject. Hence, this chapter deals with the theoretical aspects of the subject matter-assessment of customer satisfaction in transport service delivery.

### **Theoretical Concepts of Service Delivery**

#### **Definition of Service**

As quoted by Palmer and Cole (1995: 38), Kotler and Armstrong define services as “Any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything.” Other scholars Murdick et al (1990: 4) define service as “Economic activities that produce time, place, form or psychological utilities”. It is known that, transportation service users want to consume a comfortable service in agreed time and in a convenient place. Therefore, “Service producers have to be increasingly sure that they are producing the right services, in the right way, in the right places, for the right people, at the right time, for the right price.” (Palmer and Cole, 1995: XV).

## **Service Quality and Customer Satisfaction**

### **Service Quality**

Kotler (1999: 55) define quality as “The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied need”. According to Johnson and Clark (2005), service quality can be understood as the same thing with satisfaction, i.e. perceived service quality, as well as a match between a customer’s expectation of a service and perception of its delivery. Service quality is more appropriately termed perceived service quality that meets or exceeds customer expectations (Fisk, et al, 2004).

Palmer and Cole (1995: 44) state that “[...] quality can be defined only by customers and occurs when an organizations goods or services to a specification that satisfies their need.” Service quality is an antecedent of customer satisfaction and satisfaction in turn has greater effect on purchase intentions (Ibid, 1995).

### **Customer Satisfaction**

According to Jonson and Clark (2005: 134), “Customer satisfaction is the result of a customer’s assessment of a service, based on a comparison of their perceptions of service delivery with their prior expectations”. The level of satisfaction of customers depends on their perceptions and expectations of the service. Customer’s satisfaction occurred when the requirements of customers are exactly fulfilled by the service; i.e. to satisfy customers, service providers are required to deliver a service that can at least meet or exceed their expectations. If customers perception of the actual service is below their expectation, service gap is said happened and their satisfaction level is rated as poor (Baron and Harris, 2003).

Hence, in order for achieving customer satisfaction service providers are essentially demanded to know customer's expectations and periodically assess their level of satisfaction.

According to Denton (1989: 17), "Customer satisfaction is the backbone of service organization and the organization gets more than money". Gaining competitive advantage for a service organization is dependent up on the level of satisfaction of customer. To satisfy customers, accurate understanding of their expectation has invaluable importance for those engaged in the provision of service. A service organization that understood the expected service in the mind of the customer has better chance of satisfying that expectation and getting competitive advantage over other (Palmer and Cole, 1995).

In-depth understanding and fulfillment of customer's requirements and expectations enables service providers to retain their customer by improving their satisfaction (McDonald, et al, 2001).

## **Public Transportation Service Modes of Urban Transportation**

In developing countries, most trips are carried out using some form of public transport or on foot (Armstrong Wright, 1993). In most developing countries conventional buses and small buses supplemented by a mass of Paratransit vehicles such as taxis and converted pickups are very common modes of public transport (Armstrong-Wright, 1993). According to Johnson and Tengstron (2005), bus services are flexible, cost effective and equitable mode of transport that can satisfy the needs of middle income and low-income groups (Armstrong-Wright, 1993).

## Quality Indicators of Bus Transportation Service

The quality of transport service can be measured against reliability, convenience, safety, security and comfort (Iles, 2005; Height and Cresswell, 1979). Speed, accessibility in time, reliability, and frequency, are quality indicators of transport services (Wood and Johnson, 1989).

**Reliability:** is an important element of service quality, which determines the level of passengers' satisfaction. Provision of reliable service enables service providers to retain passengers for a long period. Passengers may be lost and may not be regained if the service is unreliable. Those passengers who use urban bus transportation services are increasingly sensitive to waiting time and they are more satisfied with scheduled service, which habitually operates exactly according to scheduled departure and arrival times by operating at the appropriate frequency (Iles, 2005).

The primary determinant of service reliability is the reliability of the vehicle itself (Ibid, 2005). Availability of sufficient numbers of buses will attract more passengers to use buses for their daily traveling needs (<http://www.nctr.usf.edu>). Poor reliability within an operation is the result of several breakdowns, which in turn has adverse effect on vehicle availability and affects the quality and quantity of the overall services (Ibid, 2005).

**Convenience:** it comprises accessibility, waiting time, interchangeability between services, travel expenditure, ease of payment, and availability and accuracy of information as an important element, which determines the quality of the service (Iles, 2005).

*Accessibility* can be expressed in terms of the distance passengers have to walk starting from their home to the initial bus stops and from the final bus stops to their final destination (Ibid, 2005).

Walking distance is an indicator of the coverage of the service. High walking distance indicates small coverage (World Bank, as cited in Armstrong-Wright, 1993). In dense urban areas the walking distance should range from 300-500 meters. In low densely urban areas, 500-1000 meter is the acceptable distance that passengers may walk to and from bus stops (World Bank, as cited in Armstrong-Wright, 1993; Iles, 2005).

*Waiting time* is the time passengers have to wait at bus stops for buses (World Bank, as cited in Armstrong-Wright, 1993). Even though, their expectations may vary, most passengers are delighted with minimum waiting time. The shorter the waiting time is the greater the level of convenience (Iles, 2005). Longer waiting time indicates poor quality of service. To achieve a reasonable level of service, the average waiting time should be in the range of 5-10 minutes and the maximum waiting time should be in the range of 10-20 minutes (World Bank, as cited in Armstrong-Wright, 1993).

*Interchangeability between services* is the number of times a passenger has to change buses or other modes on a journey to or from work (World Bank, as cited in Armstrong-Wright, 1993). Passengers are more satisfied with a route network which enables them to complete their journey without having to transfer from one vehicle to another (Iles, 2005). The average interchanges between routes and services are determined to be in the range of zero to one and the maximum should not be more than two. At the same time, the number of passengers who interchange two times (i.e. the maximum interchange) should be less than 10% of passengers (World Bank, as cited in Armstrong-Wright, 1993).

*Ease of payment* is another important element, which influence service convenience.

A system which requires passengers to have the exact fare ready when boarding the bus and advance purchase of tickets from road side vending machines are common in most countries. What ever the system of payment, it should be easy and more user-friendly than others (Iles, 2005).

*Availability and accuracy of information* enables passengers to plan their journeys, especially for prospective passengers. Even if the service is very good, the convenience of the service is significantly reduced if passengers do not have information about the service. Details of routes operated, points at which vehicles may load and unload passengers, places served along each routes, final destinations of routes, the fares for the journeys to be made, and service operation timetables which include departure times from terminals, times at major intermediate stops and arrival times at the destination are important information that should be made available to passengers. Service providers should also keep information about the service up-to-date.

Accurate and up-to-date information increases passengers satisfaction and it may also persuade additional passengers to use the service (Ibid, 2005).

**Safety:** in most situations, high standards of safety are a desirable objective of most passengers. Road accidents are the main threat of passengers. Poor driving standards and poor vehicle conditions are considered as the primary causes of accidents. The tendency for drivers to drive at dangerously high speeds accompanied with overloading, poor maintenance, and poor vehicle lighting while driven at night, failure of drivers to regulate their speed in accordance with road conditions are the common sources for the death and injury of passengers. Hence, safety measures have to be put in practice so that the passengers will be guaranteed of safety (Iles, 2005; Height and Cresswell, 1979).

**Security:** in many transport system, passengers are not secured from pickpocket both on buses and at bus stops and terminals. In some cases it is common that passengers are violently robbed. The way in which transport is operated determines the level of insecurity. While the presence of inspectors or conductors on the vehicles, good lighting on buses and at bus stops have a beneficial effect in reducing the opportunities for the crime of pick pocketing, overcrowding of buses and poor discipline at bus stops and terminals increases passengers vulnerability to pickpockets (Iles, 2005). On public buses particularly, stealing is common and people loose their wallets due to pick pocketing. These acts often create a sense of insecurity among passengers and diminish their satisfaction with public transportation services (<http://www.nctr.usf.edu>).

**Comfort:** is an important element of service quality considered by passengers using public transportation services (<http://www.nctr.usf.edu>).

Good seats with available space to move easily, good heating and ventilation systems, high proportion of seated to standing passengers, low step heights (to facilitate access by disabled passengers), good maintenance standards so that the interiors of buses are in a good state of repair and good standards of cleanliness, low level of crowding, smoothly driven buses particularly where standing passengers are carried, good protection and resting facilities for waiting passengers at bus stops and stations, good discipline at bus stops and on boarding the vehicle so that passengers are being protected from jostling or losing their places in a queue are highly required by passengers and determine their level of comfort and satisfaction (Iles, 2005; Height and Cresswell, 1979).

## **Data Presentation and Analysis**

### **Introduction**

The foregoing chapter presents theoretical concepts related with the subject under study. In this chapter, the data collected from customers and concerned officials of ACBSE is presented and analyzed in connection with the theoretical concepts. In brief, different quality aspects of transport service and customer satisfaction with selected service aspects is assessed.

Based on the sample size determined in chapter one, 250 survey questionnaires were distributed to customers of ACBSE. However, from a total of 250 survey questionnaires, fourteen (14) were not fully and correctly answered and nine (9) were not turned back. As a result, the data presentation and analysis is made based on the response of 227 customers.

### **Assessment of Service Quality and Customer Satisfaction**

#### **Service Reliability**

Provision of reliable service enables service providers to retain passengers for a long period. Passengers are satisfied with scheduled service, which habitually operates according to scheduled departure and arrival times. Reliability of transportation service is mainly determined by availability of sufficient numbers of buses (Iles,2005; <http://www.nctr.usf.edu>). Customers were asked about the reliability of ACBSE's service and the following result is found.

Table 1: Customers Satisfaction about Reliability of the Service

Response	Availability of sufficient number of buses		On time arrival of buses	
	Respondents		Respondents	
	Frequency	Percent	Frequency	Percent
Very dissatisfied	78	34.4	120	52.9
Dissatisfied	84	37.0	70	30.8
Average	45	19.8	25	11.0
Satisfied	17	7.5	6	2.6
Very satisfied	3	1.3	6	2.6
Total	227	100.0	227	100.0

Source: Survey Data, 2009

Table1 denotes, that with respect to availability of sufficient number of buses, nearly 71% of the respondents are not satisfied (34.4% are very dissatisfied and 37% are dissatisfied). On the contrary, virtually 8.8% of the respondents are satisfied (1.3% are very satisfied and 7.5% are satisfied) about availability of sufficient number of buses.

Whereas, 19.8% of the respondents reacted that their level of satisfaction concerning availability of buses is average. Regarding on time arrival of buses, 52.9% of the respondents are very dissatisfied and 30.8% are dissatisfied. Conversely, 5.2% of the respondents are satisfied (i.e. 2.6% are satisfied and 2.6% are very satisfied). 11% of the respondents are neither satisfied nor dissatisfied about on time arrival of buses.

Most of the respondents justified that long waiting time is one of the major discouraging factors. 80% explained that buses do not arrive on time and they have to wait long time to access the service and they have recommended ACBSE to improve the length of waiting time. 58% of respondents said that there is no clear timetable and as a result they are not sure of about the exact arrival time of buses. The result obtained from the survey as indicated in Figure 3.5 (refer page 14) can be evidence that passengers have to wait long time to use the service (for example, 35.68% of the respondents reacted that they wait a minimum of 20-40 minutes, 18.06% wait for from 40-60 minutes and more than 15% wait for buses more than 60 minutes). According to the officials of ACBSE, the service life time of most buses has expired and there is high mechanical breakdown of buses. As a result, most of the time buses are in the garage to be maintained and the frequency of the service in every route is declining and consequently waiting time is increasing.

Currently, out of the total 522 buses, 107 buses are under maintenance and 73 buses are totally out of service due to heavy mechanical breakdown. Only 282 buses are operable. This implies that daily operable buses are only 54% of the total buses. Based on the population census of 2007, the ratio of operable buses to residents is 1:9,710.

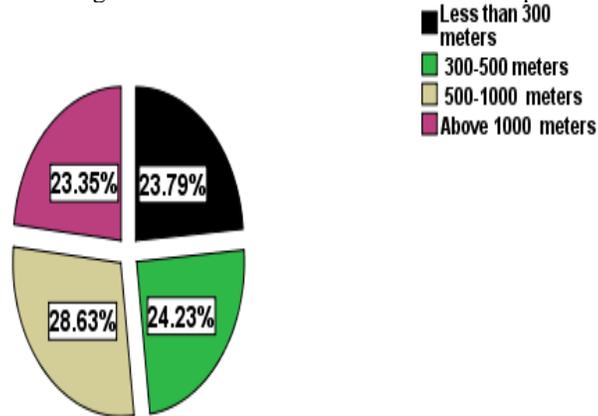
This result gives an idea that there is no adequate numbers of buses that can accommodate the demand and the service lacks scheduled operation. Consequently, passengers are waiting for buses for long time. From this one can infer that the service is not reliable and relentless endeavor is required to improve its reliability.

## **Convenience of the Service Service Accessibility**

Accessibility is described in terms of the distance passengers have to walk from their home to the initial bus stop and from the final bus stop to their final destination (Iles, 2005). In dense urban areas the recommended walking distance ranges from 300-500 meters while it is 500-1000 meters in low densely urban areas (Iles, 2005; World Bank, as cited in Armstrong-Wright, 1993). Questions were posed to customers about the reliability of ACBSE's transport service.

## Average Walking Distance from Home to Initial Bus Stop

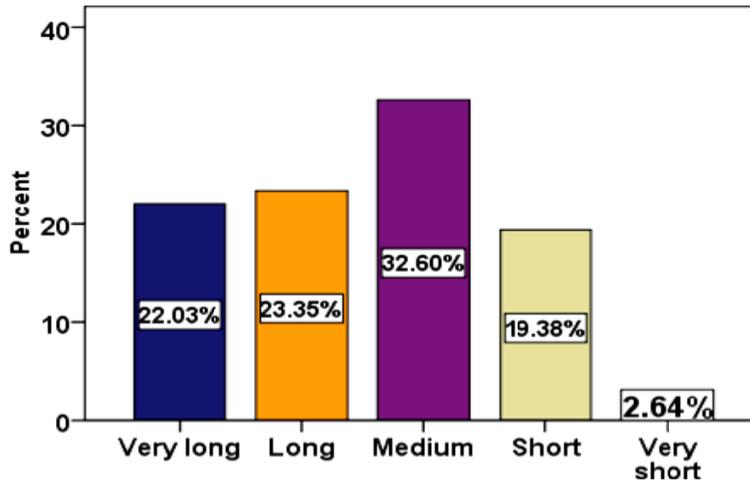
Figure 1: Average Walking Distance from Home to Initial Bus Stop



Source: Survey Data, 2009

As indicated in Figure 1 above, 23.79% of the respondents replied that the average walking distance from their home to initial bus stop is less than 300 meters. 24.23% and 28.63% reacted that the walking distance to initial bus stop is between 300-500 and 500-1000 meters respectively. The rest 23.35% responded that they walk above 1000 meters to reach to initial bus stop.

Figure 2: Evaluation of Walking Distance from Home to Initial Bus Stop



Source: Survey Data, 2009

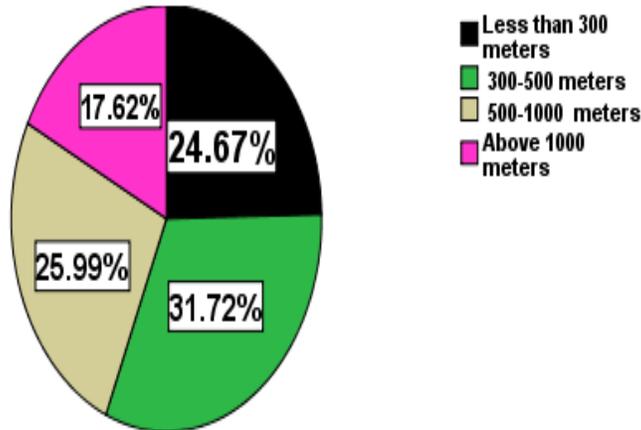
Figure 2 confirmed that large numbers of respondents reacted that walking distance to bus stop is long. 22.03% and 23.35% of respondents replied that walking distance from home to initial bus stop is very long and long correspondingly. On the other hand, 2.64% and 19.38% said that it is very short and short respectively. Those who said that walking distance to bus stop is medium are 32.60% of the respondents.

This result verifies that more than 51% of the respondents walk from home to initial bus stop beyond the recommended standard for densely urban areas (i.e. from 300-500 meters) as far as the data is collected from routes operating in Addis Ababa ( i.e. densely populated). Moreover, 45.38% of the respondents evaluated that walking distance is long.

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## Average Walking Distance from Final Bus Stop to Final Destination

Figure 3: Average Walking Distance from Final Bus Stop to Final Destination



Source: Survey Data, 2009

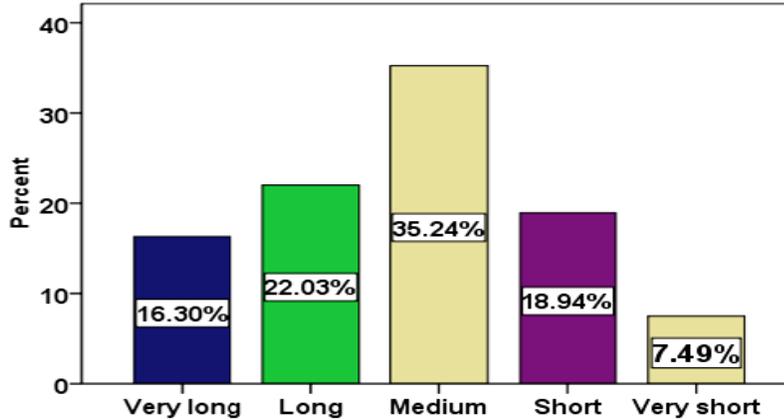
The above pie chart signifies that 24.67% of the respondents replied that walking distance from final bus stop to final destination is less than 300 meters. 31.72 % reacted that it is between 300-500 meters. 25.99% and 17.62% act in response that they walk 500-1000 and above 1000 meters correspondingly.

As Figure 4 (refer the next page) indicates, 16.30% of the respondents responded that walking distance from final bus stops to their final destination is very long. 22.03% answered that it is long. 35.24% said that it is medium. The remaining 18.94% and 7.49% reacted that it is short and very short respectively.

From this data one can infer that there are significant numbers of passengers (43.61%) who walk to and from bus stops ahead of the recommended walking distance for densely urban areas and

38.33% of the respondents evaluated that walking distance from final bus stop to final destination is long. Thus, it is safe to say that the service coverage of ACBSE is poor.

Figure 4: Evaluation of Walking Distance from Final Bus Stop to Final Destination

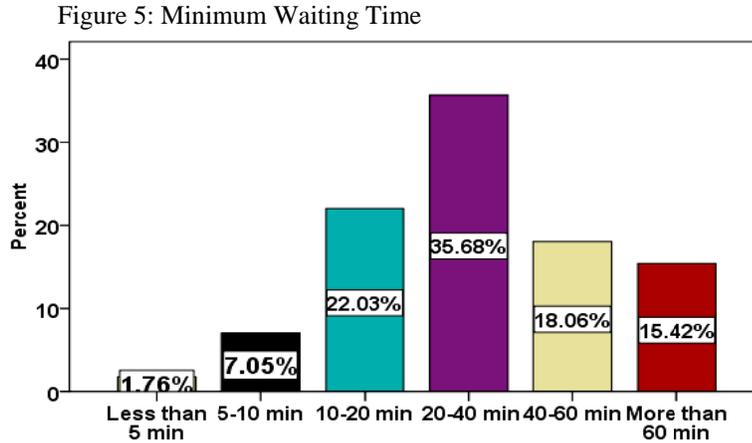


Source: Survey Data, 2009

## Waiting Time

To achieve a reasonable level of service, the average waiting time should be in the range of 5-10 minutes and the maximum should not exceed 20 minutes (World Bank, as cited in Armstrong-Wright, 1993). Based on this, three questions were addressed to customers of ACBSE and the response is analyzed as follows.

### Minimum Waiting Time



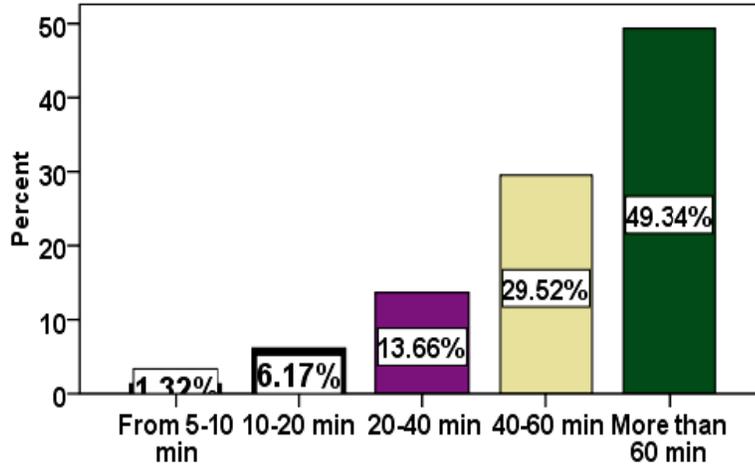
Source: Survey Data, 2009

Figure 5 above signifies that 35.68% of the respondents wait for buses a minimum of 20-40 minutes. 22.03% wait for buses between 10-20 minutes. 18.06% and 15.42% wait between 40-60 and more than 60 minutes respectively. Moreover, 7.05% and 1.76% wait between 5-10 and less than 10 minutes correspondingly.

This result indicates that only 8.81% of the respondents can access the service as per the standard (5-10 minutes) whereas the rest 91.19% wait for buses beyond the standard which extends up to more than 60 minutes.

### Maximum Waiting Time

Figure 6: Maximum Waiting Time



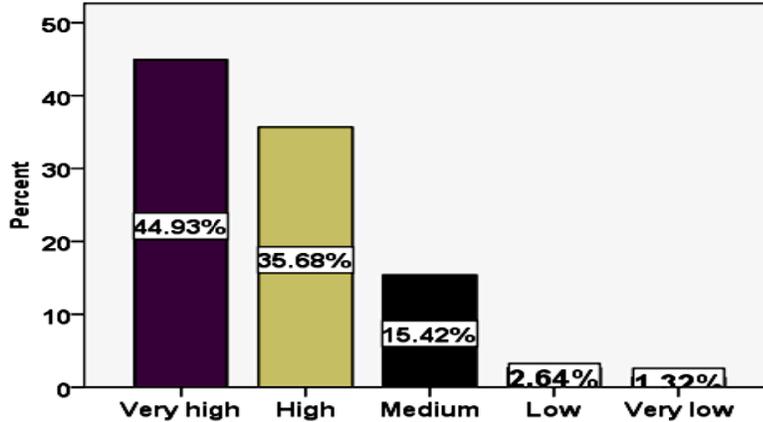
Source: Survey Data, 2009

The above bar chart illustrates that more than 49% and 29% of the respondents responded that the maximum waiting time is more than 60 minutes and 40-60 minutes in that order. 13.66% wait between 20-40 minutes, 6.17% wait between 10-20 minutes and the rest 1.32% wait between 5-10 minutes.

This data shows that how extremely long the waiting time is as compared to the standard devised by World Bank. More than 92% of the respondents (49.34%, 29.52% and 13.66%) wait for buses away from the standard. When we take the average of the minimum and maximum waiting time, more than 80% of the respondents wait for buses more than 20 minutes, i.e. less than 20% of the respondents can access the service as per the standard.

It is pointed out by 80% of the respondents that long waiting time is the primary problem for their discouraging from consuming the service and dissatisfaction. As can be seen from annex-A, the minimum waiting time that the Enterprise use as a standard for waiting time is 7.5 minutes (route number 31, i.e. from *Legahar-Shiro Meda*) which itself is greater than the standard (5 minutes). The maximum waiting time for buses which operate in the center of the city is 61 minutes (route number 50 which runs from *Total No. 3 round about-Megenagna*), which is more than triple of the recommended standard.

Figure 7: Evaluation of Length of Waiting Time



Source: Survey Data, 2009

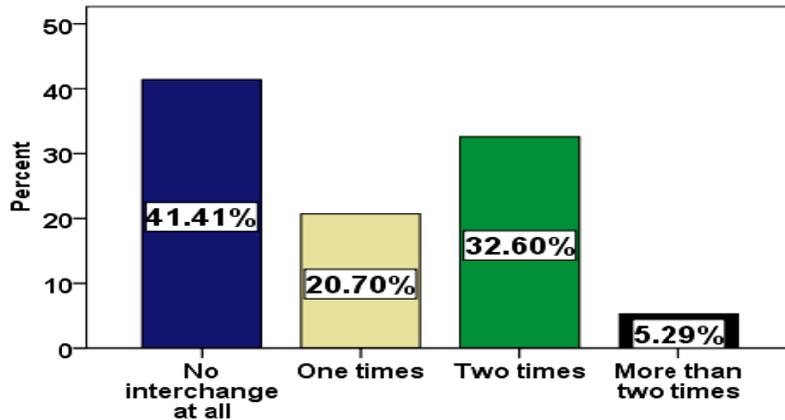
As can be seen from the above bar chart, 44.93% of the respondents said that the waiting time is very high and 35.68% replied that it is high. On the contrary, less than 4% (2.64% responded that the waiting time is low and 1.32% said it is very low) act in response that waiting time is short. 15.42% of the respondents reacted that the waiting time is medium.

The officials of ACBSE also asserted that due to mechanical breakdown of buses, lack of spare parts and high capacity limitation to maintain buses, the number of buses in most routes is reducing and customers are waiting more than two hours. They have affirmed that the Enterprise is on the way to purchase about 200 additional buses with the help of donors and AACG to accommodate the transport demand.

### Interchangeability between Services

The average interchanges are determined to be one and the maximum should not be more than two. At the same time, the numbers of passengers who interchange two times should be less than 10% of passengers (World Bank, as cited in Armstrong-Wright, 1993). To evaluate whether ACBSE's service meets this standard a question was addressed to customers.

Figure 8: Number of Times Passengers Have to Interchange Buses in a Journey



Source: Survey Data, 2009

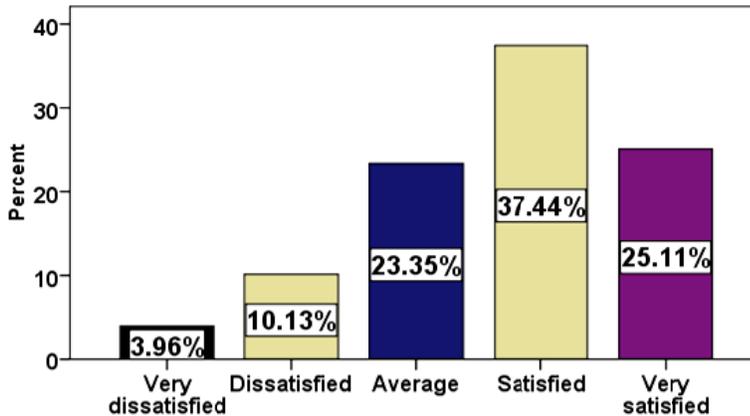
Figure 8 displays that 41.41% of the respondents complete their journey without having to transfer from one bus to another. 20.70% change buses one times. 32.60% change buses two times and 5.29% change buses more than two times. The percentages of respondents who interchange the maximum one and beyond are 37.89% (32.06% + 5.29%) of the respondents.

This result shows that the number of interchange that 5.29% of the respondents made exceed the maximum interchange (i.e. two interchange) and those who do interchange the maximum interchange are greater than 10%.

## Travel Expenditure

Customers were asked about their level of satisfaction concerning the fare of the service and the following result is found.

Figure 9: Customer Satisfaction with the Fare of the Service



Source: Survey Data, 2009

The above Figure depicts that more than 62% of respondents are satisfied (25.11% are very satisfied and 37.44% are satisfied) regarding the fare of the service. On the other hand, 14.1% of the respondents are dissatisfied (3.97% are very dissatisfied and 10.13% were dissatisfied) about the fare of the service. The remaining 23.35% of the respondents have rated their level of satisfaction as average.

From this data it could be possible to infer that the fare is affordable. But, some respondents (17.7%) indicated that uniformity of the fare is one of the discouraging and dissatisfying factors. Moreover, according to the officials of ACBSE, due to very minimum service fare, aged buses which have oil, fuel and lubricant consumption, and high maintenance costs, the Enterprise is making a loss. The performance of buses and revenue is declining. Average daily passengers are declining to 250,000. Financial performance of the Enterprise indicates that the actual performance of revenue is less than the planned and the actual expenditure is greater than the planned. Consequently, the Enterprise is operating under loss year to year.

## Ease of Payment

Regarding the ease of payment in purchasing ticket a question was posed to customers to measure their level of satisfaction.

Table 2: Customer Satisfaction about Ease of Payment to Purchase Ticket

Response	Respondents	
	Frequency	Percent
Very dissatisfied	45	19.8
Dissatisfied	77	33.9
Average	51	22.5
Satisfied	41	18.1
Very satisfied	13	5.7
Total	227	100.0

Source: Survey Data, 2009

The above Table depicts that regarding the ease of payment to purchase ticket, 19.8% and 33.9% of the respondents are very dissatisfied and dissatisfied respectively. Conversely, 5.7% are very satisfied and 18.1% are satisfied concerning ease of payment to purchase ticket. 22.5% of the respondents were neither satisfied nor dissatisfied about ease of payment to purchase ticket.

41% of the respondents indicated that the place of conductors is a little bit higher and stretching to get the ticket makes it difficult, particularly for those elderly, pregnant, disabled and for the shortest too.

The officials of ACBSE have also affirmed that the step height of buses is some what high and it is difficult to conclude that it is easily accessible to all parts of the people. It may be difficult to some people. However, even if it is influenced by drivers and conductors willingness, there is a trend to serve the elderly, mothers with child and pregnant by front door and priority is also given to those kinds of people.

## Availability of Information

Availability of information enables passengers to identify the vehicle on a particular service to a particular direction. Accurate and up-to-date information increases passengers' satisfaction and it may also persuade additional passengers to use the service (Iles, 2005).

Table 3: Customers Satisfaction about Availability of Indicator Information

Response	Respondents	
	Frequency	Percent
Very dissatisfied	64	28.2
Dissatisfied	67	29.5
Average	42	18.5
Satisfied	40	17.6
Very satisfied	14	6.2
Total	227	100.0

Source: Survey Data, 2009

Regarding availability of accurate indicator information at bus stops and terminals as shown in the Table above, 28.2% and 29.5% of the respondents are very dissatisfied and dissatisfied correspondingly. On the contrary, 6.2% and 17.6% of the respondents are very satisfied and satisfied respectively. 18.5% of the respondents have rated their level of satisfaction as average.

The researcher has also observed that there is no precise indicator information at most bus stops except some terminals (*Merkato* and *Piassa*). It is observed that at some bus stops there is information indicating what route numbers can load and unload in that particular bus stop without further information.

The higher expert of planning and data processing of ACBSE said that before some years back there was a trend of standing information at some bus stops and terminals about the fare to each route, the direction of routes run and timetable. But, because of capacity limitation, lack of materials and lack of attention, it could not be continued and currently there is no adequate indicator information at most bus stops and some terminals. From these it can be generalized that there is no adequate indicator information at bus stops and terminals.

### **Safety of the Service Delivery**

Poor driving standards and poor vehicle conditions are considered as the primary causes of accidents (Iles, 2005). To measure customers' level of satisfaction with reference to safety, questions were addressed to them.

Table 4: Customers Satisfaction Regarding Technical Condition of Buses

Response	Respondents	
	Frequency	Percent
Very dissatisfied	47	20.7
Dissatisfied	40	17.6
Average	55	24.2
Satisfied	53	23.3
Very satisfied	32	14.1
Total	227	100.0

Source: Survey Data, 2009

Table 4 depicts that 14.1% and 23.3% of the respondents are very satisfied and satisfied with technical condition of buses correspondingly. Conversely, 20.7% are very dissatisfied and 17.6% are dissatisfied. The rest 24.2 % of the respondents have rated their level of satisfaction as average.

Respondents (27.4%) mentioned poor bus interior maintenance as a discouraging factor to use Anbessa bus. Some said that there is hollow space in the floor of buses and dusts can easily enter in to the inside of buses and as a result they do not feel safe. The officials of ACBSE also asserted that some buses are poorly maintained and technically not in a good condition due to long period operation (i.e. beyond their life time). However, service quality design and control branch chief has affirmed that to keep passengers safe, buses are decided to operate after detailed mechanical inspection even if their body is not well maintained. According to his saying, for proper maintenance of buses, other buses should be supplied to accommodate the demand. Other wise, the service may decline and some routes may be totally closed.

### **Security of Customers in the Process of Service Delivery**

Due to overcrowding of buses and poor discipline at bus stops and terminals, passengers are most of the time vulnerable to pick pocketing and they loose their wallets and properties (Iles, 2005; <http://www.nctr.usf.edu>). Questions were forwarded to customers to measure their level of satisfaction about their level of security.

Table 5: Customer Satisfaction about Security from Robbery and Pick Pocketing At Bus Stops and Terminals, and on Buses

Response	Security from robbery at bus stops and terminals		Security from pick pocketing on buses	
	Respondents		Respondents	
	Frequency	Percent	Frequency	Percent
Very dissatisfied	127	55.9	138	60.8
Dissatisfied	50	22.0	48	21.1
Average	23	10.1	18	7.9
Satisfied	16	7.0	16	7.0
Very satisfied	11	4.8	7	3.1
Total	227	100.0	227	100.0

Source: Survey Data, 2009

As Table 5 exhibits, 55.9% and 22% of the respondents are very dissatisfied and dissatisfied with regard to security from being robbed at bus stops and terminals correspondingly. But 4.8% and 7% of the respondents are very satisfied and satisfied in that order. The remaining 10.1% of them responded that their level of satisfaction is average.

Regarding security from pick pocketing on buses, 60.8% and 21.1% of the total 227 respondents are very dissatisfied and dissatisfied respectively. In contrast, 3.1% of the respondents are very satisfied while 7% of the respondents are satisfied about security from pick pocketing on buses. The remaining 7.9% of the respondents are neither dissatisfied nor satisfied with security from pick pocketing on buses.

It is also indicated by 66.1% of the respondents that pick pocketing following high overcrowding is the major discouraging problem and source of dissatisfaction. Some (34.3%) also state that the passengers themselves are not disciplined and most of the time queues at bus stops and terminals are not respected, particularly when there is large numbers of waiting passengers. Some conductors also see loosely while queues are disturbed by some dishonest people and as a result there is an element of risk of pick pocketing.

From this one can infer that passengers are not secured from pick pocketing both at bus stops and terminals, and on buses.

### **Comfort of the Service**

Good seats with available space to move easily, good bus interior, good standards of cleanliness, low level of crowding, smooth operation of buses, shelters at bus stops and terminals are some of the factors that contribute for high comfort of passengers (Iles, 2005). To measure customer's satisfaction with reference to comfort of the service, questions were addressed to customers.

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Table 3.6: Customer Satisfaction about the Comfort of the Service

Response	Availability of seats on buses		Comfort of bus's seats		Cleanliness of bus's interiors		Facilities inside buses	
	Response		Respondents		Respondents		Respondents	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Very dissatisfied	74	32.6	95	41.9	108	47.6	100	44.1
Dissatisfied	59	26.0	53	23.3	56	24.7	64	28.2
Average	43	18.9	38	16.7	30	13.2	28	12.3
Satisfied	39	17.2	31	13.7	24	10.6	25	11.0
Very satisfied	11	4.8	10	4.4	9	4.0	10	4.4
Total	226	99.6	227	100.0	227	100.0	227	100.0
Missing*	1	.4	0	0	0	0	0	0
Total	227	100.0	227	100	227	100	227	100

Source: Survey Data, 2009

NB: \* one respondent does not specify his/her level of satisfaction about availability of seats on buses.

As Table 3.6 indicates, concerning availability of seats in the bus, 32.6% and 26% of the respondents are very dissatisfied and dissatisfied respectively. On the other hand, 4.8% and 17.2% of the respondents are very satisfied and satisfied correspondingly. The rest 18.9% have rated their level of satisfaction as average. ACBSE's officials have indicated that the rated capacity of a bus is 100 (30 seating and 70 standing) and during peak period a bus carries up to 200 passengers. This shows that at peak period the seating to standing ratio is about 1:6.

As can be seen from the Table, among 227 respondents more than half of them are dissatisfied (41.9% are very dissatisfied and 23.3% are dissatisfied) with regard to comfort of bus's seats. In contrast to this, 4.4% are very satisfied and 13.7% are satisfied about the comfort of bus's seats. Moreover, 16.7% replied that their degree of satisfaction regarding comfort of bus's seats is average. Concerning cleanliness of the interiors of buses, considerable numbers of respondents (47.6%) are very dissatisfied. 24.7% of the respondents are dissatisfied while 4% and 10.6% are very satisfied and satisfied respectively. The rest of the respondents, i.e. 13.2% have rated their degree of satisfaction with cleanliness of buses as an average.

Moreover, 44.1% of the respondents are very dissatisfied and 28.2% are dissatisfied about the interior facilities of buses. In opposition, 4.4% are very satisfied and 11% are satisfied concerning the facilities of buses. In addition, 12.3% are neither satisfied nor dissatisfied regarding the facilities of buses.

About 79.4% of the respondents pointed out that buses load without limit and as a result very high overcrowding is one of the major factors discouraging them from using *Anbessa* bus and most of them have recommended ACBSE to limit the numbers of passengers. 53.5% of the respondents also indicated that lack of seat is one of the discouraging factors. 34.7% of the respondents replied that the step height is high and difficult to in and out for those elderly, pregnant and disabled people. According to the discussion with ACBSE's officials, out of the total 1400 bus stops, those which have shelters are only 85 bus stops.

The researcher has also observed that there is high overcrowding at pick hours (from 7:00AM-9:00AM and from 4:30PM-7:30PM). Bus windows do not have sunshade to protect passengers from sun heat and reflection. It is also observed that the existing shelters are not adequate enough to accommodate all waiting passengers in that particular bus stops or terminals. However, shelter with good standard has constructed at *Merkato* terminal by MOHA. All these results indicate that seats on buses are not sufficient and comfortable, bus interiors are not clean and buses do not have interior facilities. Moreover, most bus stops (more than 93%) do not have shelters. Therefore, it is safe to say that the service is not comfortable to passengers.

### **Measures Designed to be implemented by ACBSE in the Future**

According to the officials of ACBSE, Implementing BPR, importing 200 additional buses, designing better routes and increasing the service coverage, improving maintenance standards of buses, controlling the quality of the service and monitoring customer satisfaction, providing other alternative mass public transport service

and increasing the supply by encouraging private sectors and improving the existing transport infrastructure are measures designed to be implemented in the future.

## **Conclusion**

The researcher has assessed the quality of the service and customer satisfaction using quality indicators of bus transport service as parameters. In the analysis it is found that the existing transport service of ACBSE is constrained by capacity limitation. Consequently, the quality of the service is poor and the basic quality of service indicators devised by World Bank was not meet and the majority of customers are not satisfied about the selected service attributes. Most of the respondents do not have positive feeling about the transport service of ACBSE. Therefore, ACBSE is not meeting the requirements of customers.

## **Recommendations**

Based on the findings of the study the following recommendations are forwarded to improve the service and meet the requirements of customers.

- To make the service more reliable and convenient by increasing the frequency of the service and by reducing waiting time as well as overcrowding, increasing the number of buses is indispensable. Buses can be increased through encouraging private sectors via tax incentives and other facilities to invest on similar conventional bus public transport. Government in general and all stakeholders in particular should also give emphasis to improve the capacity of the Enterprise by assigning adequate financial resources which enable to purchase many more buses that can accommodate the transport demand of the public. By supplying additional buses the existing buses should be well maintained so that passengers can reach their destination safely and on time. While buses are purchased, comfort and number of seating, internal facilities, step heights and types of users should be taken in to consideration to improve comfort and ease of accessibility.

- To improve satisfaction of customers through minimizing walking distance to and from bus stops and interchangeability between services, it would be better to provide direct service through proper routing and by putting additional buses into operation so that the coverage of the service is improved and expanded.
- To make the service more affordable and satisfy the requirements of customers as well as to be competent and profitable for the Enterprise, flexible rate should be encouraged and implemented for all routes at different distances.
- To keep customers secured, buses should have good lighting, the level of overcrowding should be considered while buses are operated and conductors should made customers aware to keep themselves from thief and ACBSE should also work in cooperation with the police especially at high demand routes and terminals. It could also be better to collect fare (ticket price) before passengers board buses (while passengers are queuing) to avoid queue disturbance and to reduce theft particularly at high demand routes and terminals. It will also make the payment system more easy and convenient.
- Shelters with adequate seating capacity should be built at each bus stops and terminals particularly at high demand routes and in the line of many routes to protect passengers from sun, rain, dust and others, so that they can wait for buses patiently and their comfort can be improved. Shelters can be built by inviting companies and allowing places for them to advertise their products. Moreover, adequate indicator information which include the direction of bus run, timetable and route fare should be posted at terminals and bus stops. Indicator information can also be posted on the side of buses.

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