

# Determinants of Passengers Satisfaction in the Public Transport Services: The Case of Dawuro Zone Bus Station, Southern Ethiopia

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## Abstract

Transport contributes greater share to the country's economic development. But the supply of transport services in Ethiopia in general and Dawuro in particular not satisfied the need of passengers. Therefore, the main objective of this study aimed to determinants that affecting passenger's satisfaction in public transport services the case of Dawuro bus station. Both quantitative and qualitative data types were used. The data were collected from 385 sample passengers through interview and group discussions by using questionnaires and checklists. This was supplemented by secondary data collected from different published and unpublished sources. Convenience sampling technique was employed. The data was analyzed by using descriptive statistics such as mean, percentages and standard deviation presented by using charts and tables. Correlation was also used to test the strength of the relationship between the two variables. From the econometrics analysis multiple linear regression and analysis of variance employed to test the hypothesis. Among the variables included in the model, services provided, fare system, accessibility, transport comfort, scheduled timings, availability facilities; terminal environment were significantly influence in public transport services. With respect to the problems that face passengers using public transport services steepness of the road, highest number of passengers or over load, attitudes of the drivers and bus owners were major problems in public transport service. Based on the research findings, recommendations are given to Dawuro Bus station in the last chapter

**Keywords:** Satisfaction, Public transport service and Passengers

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## 1. INTRODUCTION

### 1.1 BACKGROUND OF THE STUDY

Transport is one of the complex services which contributes greater share to the country's economic development everybody travels whether it be work, play, and shop or do business. All raw materials must be conveyed from the land to a place of manufacture or usage, and all goods must be moved from the factory to the market place and from the staff to the consumer. Transport is the means by which these activities occur; it is the cement that binds together communities and their activities. Meeting these needs has been and continues to be the Transport task (Bell, et al., 2006). Transportation is the movement of people with goods from one place to the other. It is a means by which goods like raw material, production equipment, operating inventories, semi-finished goods and finished goods as well as people are able to get to or be made available where they are needed for commercials or non-commercial purposes, as at when desired. To achieve the welfare of human being the mobility or transportation of people and materials is vital for social interaction, co-operation, production activities, economic and other types of development. This is the reason why road transport is popularly referred to as the engine and wheel of the society and it helps the world to go round and function actively (Olakunori, 2006).

Moreover, to achieve the welfare of human being the mobility or transportation of people and materials is vital for social interaction, co-operation, production activities, economic and other types of development. This is the reason why road transport is popularly referred to as the engine and wheel of the society and it helps the world to go round and function actively (Olakunori, 2006). Transport routes between places facilitates the movement of goods and people between nodes; they often become linier nodes themselves (Asnake, 2006). Transport provides a means of moving persons from one place to another. Thus, it would be possible to say that, people use transport to satisfy a particular need, i.e. the need to get to work and back to home (Bamford and Robinson, 1978; Wood and Johnson, 1989).

Public transport is a shared passenger transport service available for the use of general public for the purpose of travelling from an origin to a destination. Public transport modes may include buses, trains, rapid transits, trams, ferries and air carriers, depending on countries requirements (Ranawana and Hewage,

2015). It is important to improve the public transport services to satisfy customers. In many countries, major investments are being made in public transport systems to make them more competitive. However, an increase in supply will not automatically lead to a corresponding increase in demand and satisfaction (Fujii and Kitamura 2003). To make sure that investment really attracts both the existing and the potential customers envisaged, knowledge of satisfaction and service performance should provide policymakers and operational managers in public transport with valuable information. However, in order to keep and attract more passengers, public transport must to have high service quality to satisfy and fulfill more wide range of different customer's needs (Oliver 1980; Anable 2005). It is important to summarize knowledge about what drives customer satisfaction and dissatisfaction in public transport area to design an attractive and marketable public transport. An improvement of supplied service quality can attract additional users from other modes of transport such as private transport modes (Laura Eboli, Gabriella Mazzulla, 2007).

Passenger's satisfaction is defined as a judgment that a product or service is provided at a pleasurable level of consumption-related fulfillment. Generally, people tend to be satisfied when their perceptions of the service they receive match their expectations, and these expectations could be subjective or objective. When service quality falls short of expectations they tend to be dissatisfied (Mintzesnot G. et al., 2011). The goal of public transport needs to include the development of practical tools that improve the quality of people's mobility and daily life (Maria Morfoulaki, et al., 2007). It is an undeniable fact that mobility is part of the daily round of activities and as such an essential component of the life of every human being (Albalate and Bel, 2010). In satisfying the need to move, public transport has in recent times become the most commonly used mode of transport. Therefore, the ways public transport services are delivered as well as their qualities are important because of their effect both on the attitude and behavior of travelers and the demand for services. Public transport services are mostly delivered either by private or public organizations. Regardless of the party that delivers them, public transport services require substantial investment and high operating costs.

Palmer and Cole (1995), state that "service is the production of essentially intangible benefits which through some form of exchange satisfies an identified consumer's 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.

## **1.2. STATEMENT OF THE PROBLEM**

Public transport is significant for economic growth and economic development since it facilitates the movement of labor, raw materials, finished commodities and creation of employment in the economy (Cavanna and Cornbelt, 2007) the public transport permits firms and people that do not own units of carriage to transport their commodities (Poleen 1993). The organizations and people that use public transport need to be assured that their goods will reach the desired destinations and in good time (Annabel 2005). Public transport should become part of a solution for sustainable transport in the future. However, in order to keep and attract more passengers, public transport must to have high service quality to satisfy and fulfill more wide range of different customer's needs (Anable 2005). It is important to summarize knowledge about what drives customer satisfaction in public transport area to design an attractive and marketable public transport

The Ethiopian Federal Transport Authority (2011) was shown that the sector is facing certain challenges because the entire people of the nation highly lie on road transport than other alternative modes. The demand for transport service, however, has been increasing from time to time in Ethiopia. There is also a prevalence of poor quality of services in the sector which makes the road transport passengers of the nation dissatisfied. Demand and supply of transport services could not be matched. Delivering quality transport service to the public with adequate capacity that can meet and satisfy their requirements. But, existing studies on transport carried out in the nation do not properly address the issue under customer satisfaction in public transport services. When service quality falls short of expectations they tend to be dissatisfied (Mintzesnot G. et al., 2011).

There are huge public transport services problems in local level. For example, the major modes of public transportation are in buses and vehicles. The population of Dawuro is increasing significantly, customer satisfaction in public transport services not attained. Moreover, the supply of transport service is not proportional to the demand. There was little investigation in areas of transport service quality and customers' satisfaction in public road transport sector of Dawuro zone. Therefore, this study was intended to assess factors affecting passengers' satisfaction in public transport services in Dawuro bus stations.

## **1.3 OBJECTIVES OF THE STUDY**

### **1.3.1. General Objective**

This research study mainly focuses on determinants which affecting passenger's satisfaction in public transport services.

### **1.3.2. Specific Objectives**

- To analyze the level of satisfaction of passengers using the public transport services.

- To identify the problems that face passengers using public transport services.

## 1.4 RESEARCH QUESTIONS

To address the above stated problems the researcher designed the following basic questions:

1. What are the determinants which affect passenger satisfaction using public transport service?
2. What are the problems travelers faces in the current transport system?

## 1.5. RESEARCH HYPOTHESIS

**H01:** A services provided has no significant effect on passengers satisfaction in the study area.

**H02:** Access to service has no significant effect on passenger's satisfaction in the study area

**H03:** Availability of facilities has no significant effect on passenger's satisfaction in the study area

**H04:** scheduled timings has no significant effect on passenger's satisfaction in the study area.

**H05:** Terminal environment has no significant effect on passenger's satisfaction in the study area.

**H06:** Transport comfort has no significant effect on passenger's satisfaction in the study area.

**H07:** Fare system has no significant effect on passenger's satisfaction in the study area.

## 2. Literature Review

### 2.1 FACTORS AFFECT PASSENGERS SATISFACTION

**1. Services provided:** means information, staff behavior, safe from accident, information in bus stop etc. Those passengers who use 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. The primary determinant of service reliability is the reliability of the vehicle itself (Ranawana and Hewage, 2015). Availability of passengers to use buses for their daily traveling needs. 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

**2. 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. Accurate and up-to-date information increases passengers satisfaction and it may also persuade additional passengers to use the service (Iles, 2005). Beirão (2007) conducted depth interviews in Porto to find out dissatisfying factors. The results showed that customers reported a lot of waste time in distance from home to terminal, too crowded, lack of comfort, time uncertainty, lack of control, unreliability, long waiting times, need to transfer, they cannot change route to avoid traffic congestion, lack of flexibility, and long walking time.  
study are

**3. Availability of facilities:** enables passengers to plan their journeys, especially for prospective passengers. Details of routes operated, points at which vehicles may load and unload passengers, places served along each routes, final destinations of routes, and service operation time-tables 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 (Ranawana and Hewage, (2015).

**4. Scheduled timings:** which consist of public bus transport departure frequency, travel time, punctuality etc. 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).

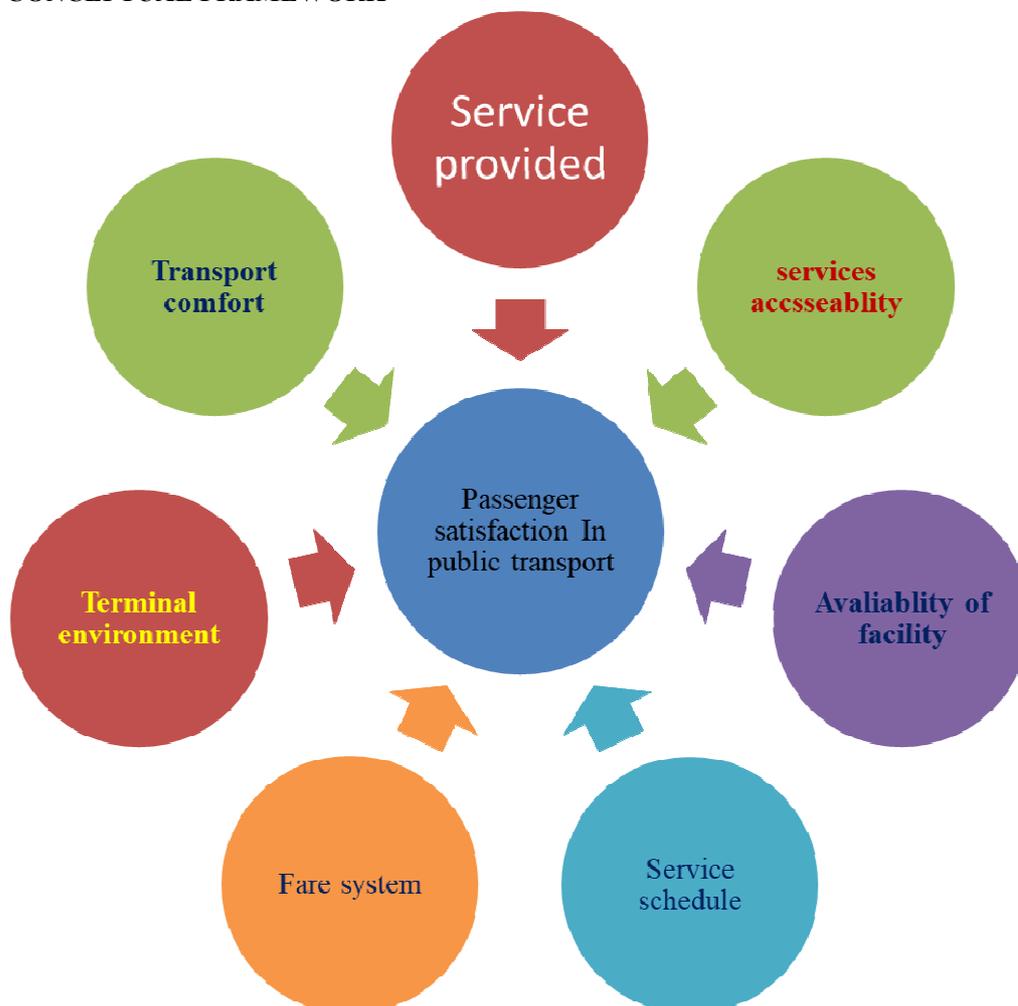
**5. Terminal environment:** which means cleanliness, bus stop security, on board security, bus stop condition etc.. While the presence of inspectors or conductors on the vehicles, good lighting on buses and at bus stops have a beneficial effect in reducing the opportunities for the crime of pick pocketing, 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 lose their wallets due to pick pocketing.

**6. Transport comfort:** This includes bus comfort, seat availability. 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).

**7. Fare system:** which is the price paid for availing the transport facility? 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. Whatever the system of payment, it should be easy and more user-friendly than others (Bielen and Demoulin (2007): Iles, 2005). Beirão & Sarsfield Cabral (2007) summarizes

advantages in using public transport according to Portugal public transport users. The result highlights the importance of a cost friendly and reasonable fare system and less stressful public transport service.

## 2.2 CONCEPTUAL FRAMEWORK



**Figure 1:** Conceptual Framework of passenger satisfaction on public transport  
(Source Researchers own design, 2019)

## 3. RESEARCH METHODOLOGY

### 3.1 Research Design

For this research work, the researcher had used cross sectional in design since data was collected at one point of time. In cross-sectional field surveys, independent and dependent variables are measured at the same point in time using a single questionnaire (Anol, 2012).

### 3.2 Data Sources

There are two major research approaches namely, quantitative and qualitative, where one of them is not better than the others, rather depends on how the researcher wants to do a research of study (Ghauri and Kjell, 2005). Both quantitative and qualitative data was collected. The data collected through questionnaire have closed an ended question which was measured on continuous scale and interview for Semi-structured questions. Thus, quantitative and qualitative research methodology will apply in this research.

### 3.3 Target Population

The population for the study is infinite population. The passengers availing the public transport facility from Dawuro Bus station cannot be definitely ascertained.

### 3.4 Sampling Technique

For this study, the researcher used Convenience sampling as the total population is infinite. For this study

member of the target population that meet certain practical criteria, such as easy accessibility, availability at a given time, or the willingness to participate are included for the purpose of the study. It is also called as accidental sampling or opportunity sampling. The researcher includes those participants who are easy or convenient to approach. The technique is useful where target population is defined in terms of very broad category. For instance the target population may be girls and boys, men and women, rich and poor

Method: Any member of the target population who is available at the moment is approached he or she is asked for participation in the research.

### 3.5 Sampling size

As the population of the study is infinite and the passengers availing the public transport facility from Dawuro bus station cannot be definitely ascertained. Therefore, sample size to collect data through questionnaire for this research was determined by using Cochran method of sample determination for infinite population at 95% confidence level.

$$n = \frac{z^2 pq}{e^2}$$

Where,

n = Sample Size p = the estimated proportion of an attribute

Z= Standard Normal Variate = standard error associated with the chosen level of confidence (1.96)q = 1-p e = Significance Level

$$n = \frac{(1.96)^2 * 0.50 * 0.50}{(0.05)^2} = 384.16 = 385 \text{ passengers}$$

### 3.6 Mathematical Model

The mathematical model can be written as:

$$Y = a + \beta x$$

Where, Y = dependent variable; a = intercept;  $\beta$  = slope (coefficient) of independent variable x

$$CSPT = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + U$$

Where

CSPT = Customer Satisfaction on Public Transport

X1 = Services provided,

X2 = Services accessibility,

X3 = Availability of facilities,

X4 = Services Schedule,

X5 = Terminal environment

X6 = Transport comfort

X7 = Fare system

U = It is the Stochastic Disturbance term/ a random and unobserved that may represent all other challenging factors.

## 4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter deals with presentation, analysis and interpretation of data collected from 385 sampled respondents. This part mainly concerns the demographic characteristic of the respondents, analysis of independent variables with respect to the customer satisfaction which was analyzed by using frequencies, percentages and the factors that affect the satisfaction of the public transport were analyzed by multiple linear regression model.

### 4.1 General Characteristics of the Respondents

**Table 4.1: Age category of the respondents.**

Age group	Frequency	Percent
18-20	56	14.5
21-30	101	26.2
31-40	127	33.0
41-50	81	21.0
Above 50	20	5.2
Total	385	100.0

Source: own survey data, 2019

With regarding to age, 56 (14.5%) of the respondents are in the range of 18-20 years, 101 (26.2%) are in the range of 21-30 years, 127 (33%) are in the range of 31-40 years, 81 (21%) are in the range of 41-50 years and 20 (5.2%) were above 50 years as indicated in (Table 4.1). The result revealed that the majority of the passengers

range in age of 31-40 years.

**Table 4.2: The frequency of travelling public transport**

	Frequency	Percent
Daily	78	20.3
Weekly	164	42.6
once a month	125	32.5
every 2-3 months	10	2.6
once a year	8	2.1
Total	385	100.0

Source: Own survey data,2019

Table 4.2 showed the frequency of travelling with public transport. From the total respondents, 78 (20.3%) of the respondents are travelling daily, 164 (42.6%) are travelling weekly, 125(32.5%) are travelling once a month, 10 (2.6%) are travelling every 2 - 3 months and 8 (2.1%) are travelling once a year. From this, it can be understood that travels availing the public transport from Dawuro bus terminal is a mix of all commuters who are travelling at different intervals of time with majority at weekly (42.6%).

**Table 4.3: Income level of the passengers**

Income range	Frequency	Percent
less than 1000	20	5.2
1001-2500	120	31.2
2501-5000	101	26.2
5001-7500	93	24.2
7501-10000	50	13.0
above 15000	1	.3
Total	385	100.0

Source: own survey data, 2019

The Table 4.3 indicated the level of income. From the total respondents, 20 (5.2%) of the respondents are in the range of less than 1000, 120(31.2%) are in the range of 1001-2500, 101 (26.2%) are in the range of 2501-5000, 93 (24.2%) are in the range of 5001 - 7500, 21(5.5%) are in the range of 7501-10000, 50(13%) are in the range of 10001 - 15000, and 1(0.3%) are above 15000 birr. From this result, it can be understood that majority of respondents (31.2%) ranges in income level of 1001-2500 birr.

#### 4.2 Analysis of independent variables.

The results presented in frequency and percentages of respondents the items that measured and rated on a five-point Likert scale (1= strongly disagree 2= disagree 3= medium 4= agree 5= strongly agree).

**Table 4.2.1: services provided**

ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.1 The terminal has safe and competent drivers and Conductors	N	91	173	31	90	0
	%	23.6	44.9	8.1	23.4	0
1.2 The bus are always running at a safe speed and carry the passengers as per the specified capacity	N	102	173	40	70	0
	%	26.5	44.9	10.4	18.2	0
1.3 Personnel in the bus stations have knowledge and perform their activities accurately and dependably	N	83	131	91	80	0
	%	21.6	34	23.6	20.8	0
1.4 Personnel in the bus station are friendly, courteous and show willingness to help the passengers	N	87	160	50	68	20
	%	22.6	41.6	13	17.7	5.2
1.5 Personnel in the bus stations provide prompt services and explain the announcement of delays of the buses	N	93	192	10	90	0
	%	24.2	49.9	2.6	23.4	0

Source: Computed from own survey data, 2019

In Table 4.2.1 indicated that 91(23.6%) strongly disagree, 173(44.9%) disagree 31(8.1%) medium and 90(23.4%) were agree on the terminal has safe and competent drivers and Conductors. This reveals that majority of passengers were disagree on the terminal has safe and competent drivers and Conductors. Also, 102(26.5%) strongly disagree, 173(44.9%) disagree 40(10.4%) medium and 70(18.2%) were agree on the bus are always running at a safe speed and carry the passengers as per the specified capacity. This also indicated the majority of

respondents disagree on the bus are always running at a safe speed and carry the passengers as per the specified capacity. Furthermore, 83(21.6%) strongly disagree, 131(34%) disagree 91(23.6%) medium and 80(20.8%) were agree Personnel in the bus stations have knowledge and perform their activities accurately and dependably. This indicated the majority of respondents disagree on Personnel in the bus stations have knowledge and perform their activities accurately and dependably. More over table 4.4, 87(22.6%) strongly disagree, 160(41.6%) disagree 50(13%) medium and 68(17.7%) agree and 20(5.2%) were strongly agree on Personnel in the bus station are friendly, courteous and show willingness to help the passengers. This indicated the majority of respondents disagree on Personnel in the bus stations have knowledge and perform their activities accurately and dependably and 93(24.2%) strongly disagree, 192(49.9%) disagree 10(2.6%) medium and 90(23.4%) agree on Personnel in the bus stations provide prompt services and explain the announcement of delays of the buses. This indicated the majority of respondents disagree on personnel in the bus stations provide prompt services and explain the announcement of delays of the buses.

**Table 4.2.2: Fare system**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I feel that the fares for the passengers are affordable	N	40	121	92	92	40
		%	10.4	31.4	23.9	23.9	10.4
2	I believe that the fares for the passengers are cost effective	N	110	81	72	112	10
		%	28.6	21	18.7	29.1	2.6
3	I feel that the fares for the passengers are reasonably charged	N	81	141	83	60	20
		%	21	36.6	21.6	15.6	5.2
4	I know that the fares for the luggage are reasonably charged	N	104	150	61	20	50
		%	27	39	15.8	5.2	13

Source: Computed from own survey data, 2019

In Table 4.2.2 indicated that 40(10.4%) strongly disagree and agree, 121(31.4%) disagree 92(23.9%) medium and agree on the fares for the passengers are affordable. This reveals that majority of passengers were disagree on the fares for the passengers are affordable. Moreover, 110(28.6%) strongly disagree, 81(21%) disagree 72(18.7%) medium and 112(29.1%) and 10(2.6%) were disagree fares for the passengers are cost effective. This also indicated the majority of respondents agree on the fares for the passengers are cost effective. Also, 81(21%) strongly disagree, 141(36.6%) disagree 83(21.6%) medium and 60(15.6%) agree and 20(5.2%) were disagree on fares for the passengers are reasonably charged. This indicated the majority of respondents disagree on the fares for the passengers are reasonably charged. In table 4.4, 104(27%) strongly disagree, 150(39%) disagree 61(15.8%) medium and 20(5.2%) agree and 50(13%) were disagree on the fares for the luggage are reasonably charged. This indicated the majority of respondents disagree on the fares for the luggage is reasonably charged.

**Table 4.2.3: Accessibility**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The bus terminal is located at a convenient locality	N	101	214	20	20	30
		%	26.2	55.6	5.2	5.2	7.8
2	There is conveyance available from my house to bus terminal	N	51	111	52	121	50
		%	13.2	28.8	13.5	31.4	13

Source: Computed from own survey data, 2019

In Table 4.2.3 indicated that 101(26.2%) strongly disagree and agree, 214(55.6%) disagree 20(5.2%) medium and agree, 30(7.8%) strongly agree on the bus terminal is located at a convenient locality. This reveals that majority of passengers were disagree the bus terminal is located at a convenient locality. Also, 51(13.2%) strongly disagree, 111(28.8%) disagree 52(13.5%) medium, 121(31.4%) agree and 50(13%) were strongly agree on there is conveyance available from my house to bus terminal. this also indicated the majority of respondents agree on there is conveyance available from my house to bus terminal.

**Table 4.2.4: Transport comport**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The buses are always neat and clean	N	184	81	0	60	60
		%	47.8	21	0	15.6	15.6
2	The seating arrangement in the buses is comfortable	N	20	100	84	131	50
		%	5.2	26	21.8	34	13
3	The buses have enough windows placed with glasses for proper ventilation for the passengers	N	81	0	30	193	81
		%	21	0	7.8	50.1	21

Source: Computed from own survey data, 2019

In Table 4.2.4 indicated that 184(47.8%) strongly disagree, 81(21%) disagree 60(15.6%) agree and strongly agree on the buses are always neat and clean. This indicates that majority of passengers were strongly disagree on the buses are always neat and clean. Moreover, 20(5.2%) strongly disagree, 100(26%) disagree 84(21.8%) medium, 131(34%) agree and 50(13%) were strongly agree on the seating arrangement in the buses is comfortable. This also indicated the majority of respondents agree on the seating arrangement in the buses is comfortable. In table 4.7, 81(21%) strongly disagree and agree, 30(7.8%) medium, 193(50.1%) were agree on the buses have enough windows placed with glasses for proper ventilation for the passengers. This indicated the majority of respondents disagree on the buses have enough windows placed with glasses for proper ventilation for the passengers.

**Table 4.5: Terminal environment**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	There are security personnel for the safety of the passengers at the bus stations	N	90	163	52	80	0
		%	23.4	42.3	13.5	20.8	0
2	Signs Boards about the information of the buses are placed	N	175	130	10	40	30
		%	45.5	33.8	2.6	10.4	7.8
3	There are frequent announcements about the information of the buses	N	165	110	40	30	40
		%	42.9	28.6	10.4	7.8	10.4
4	Personnel in the bus stations are caring, inspire trust and confidence in delivering services	N	151	164	50	20	0
		%	39.2	42.6	13	5.2	0

Source: Computed from own survey data, 2019

In Table 4.2.5 indicated that 90(23.4%) strongly disagree, 163(42.3%) disagree 52(15.5%) medium and 80(20.8%) were agree on there are security personnel for the safety of the passengers at the bus stations. This reveals that majority of passengers were disagree on there are security personnel for the safety of the passengers at the bus stations. In the same table, 175(45.5%) strongly disagree, 130(33.8%) disagree 10(2.6%) medium and 40(10.4%) agree and 30(7.8%) were strongly agree on Signs Boards about the information of the buses are placed. This also indicated the majority of respondents strongly disagree on Signs Boards about the information of the buses are placed. Moreover, 165(42.9%) strongly disagree, 110(28.6%) disagree 40(10.4%) medium and strongly agree and 30(7.8%) were agree there are frequent announcements about the information of the buses. This indicated the majority of respondents strongly disagree on the three are frequent announcements about the information of the buses. In addition, 151(39.2%) strongly disagree, 164(42.6%) disagree 50(13%) medium and 20(5.2%) were agree on Personnel in the bus stations are caring; inspire trust and confidence in delivering services. This indicated the majority of respondents disagree on the Personnel in the bus stations are caring; inspire trust and confidence in delivering services.

**Table 4.6. Availability of the facilities.**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	There are adequate physical facilities like toilets, shower, drinking water etc.	N	123	101	61	30	70
		%	31.9	26.2	15.8	7.8	18.2
2	There are cafeteria, and food joints for the facility of passengers around the terminal	N	124	181	0	40	40
		%	32.2	47	0	10.4	10.4
3	There are bus shelters, seating arrangements, parking spaces for waiting passengers	N	123	80	50	72	60
		%	31.9	20.8	13	18.7	15.6
4	The terminal has proper lighting facilities for the passengers during the night	N	173	102	0	50	60
		%	44.9	26.5	0	13	15.6

Source: Computed from own survey data, 2019

In Table 4.2.6 indicated that 123(31.9%) strongly disagree, 101(26.2%) disagree 61(15.8%) medium, 30(7.8%) agree and 70(18.2) were strongly agree on there are adequate physical facilities like toilets, shower, drinking water etc. This reveals that majority of passengers were strongly disagree on there are adequate physical facilities like toilets, shower, drinking water etc. In the same table, 124(32.2%) strongly disagree, 181(47%) disagree 40(10.4%) were agree and strongly agree on there are cafeteria, and food joints for the facility of passengers around the terminal. This also indicated the majority of respondents disagree on the cafeteria and food joints for the facility of passengers around the terminal. In addition, 123(31.9%) strongly disagree, 80(20.8%) disagree 50(13%) medium and 72(18.7%) agree and 60(15.6%) were strongly agree on bus shelters, seating arrangements, parking spaces for waiting passengers. This indicated the majority of respondents strongly disagree on the bus shelters, seating arrangements, and parking spaces for waiting passengers. Moreover, 173(44.9%) strongly disagree, 102(26.5%) disagree 50(13%) agree and 60(15.6%) were strongly agree on the terminal has proper lighting facilities for the passengers during the night. This indicated the majority of respondents strongly disagree on the terminal has proper lighting facilities for the passengers during the night.

**Table 4.2.7: Scheduled Timings**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	The buses are always plying on time	N	203	72	50	60	0
		%	52.7	18.7	13	15.6	0
	Frequent services are available so that waiting time is shorter	N	143	120	22	60	40
		%	37.1	31.2	5.7	15.6	10.4

Source: Computed from own survey data, 2019

In Table 4.2.7 indicated that 203(52.7%) strongly disagree, 72(18.7%) disagree 50(13%) medium and 60(15.6%) agree on the buses are always flying on time. This reveals that majority of passengers were strongly disagree on the buses are always flying on time. In the same table, 143(37.1%) strongly disagree, 120(31.2%) disagree, 22(5.7%) medium, 60(15.6%) agree, and 40(10.4) were strongly agree on there is conveyance available from my house to bus terminal. this also indicated the majority of respondents strongly disagree agree on the conveyance available from my house to bus terminal.

**Table 4.2.8: Customer satisfaction on public transport**

	ITEM		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I am satisfied with the services offered by the public transport from Dawuro bus station	N	81	142	82	80	0
		%	21	36.9	21.3	20.8	0
2	I intend to recommend my friends and relatives to use public transport from Dawuro bus station	N	71	81	60	133	40
		%	18.4	21	15.6	34.5	10.4
3	I will regularly use the public transport from Dawuro bus station even in future	N	40	90	50	123	82
		%	10.4	23.4	13	31.9	21.3

Source: Computed from own survey data, 2019

In Table 4.2.8 indicated that 81(21%) strongly disagree, 142(36.9%) disagree 82(21.3%) medium and 80(20.8%) were agree on satisfied with the services offered by the public transport from Dawuro bus station. This reveals that majority of passengers were disagree satisfied with the services offered by the public transport from Dawuro bus station. In addition, 71(18.4%) strongly disagree, 81(21%) disagree, 60(15.6%), 133(34.5%) agree and 40(10.4%) strongly agree on recommend my friends and relatives to use public transport from Dawuro

bus station. This also indicated the majority of respondents agree on recommend my friends and relatives to use public transport from Dawuro bus station. In the same table, 40(10.4%) strongly disagree, 90(23.4%) disagree 50(13%) medium and 123(31.9%) agree and 82(21.3%) were strongly agree on regularly use the public transport from Dawuro bus station even in future. This indicated the majority of respondents agree on the regularly use the public transport from Dawuro bus station even in future.

### 4.3 Regression Analysis

For this study the multiple linear regression models was employed. For the analysis of multiple linear regressions the customers satisfaction public transport was used as the dependent variables and the independent variables which included in the model were services provided, fare system, accessibility, transport comfort, terminal environment, availability of the facility and scheduled timing.

**Table 4.3.1: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.880 <sup>a</sup>	.774	.769	.500	2.074

a. Predictors: (Constant), Timing, Facility, Fare, Service, Comfort, Environment, Accessibility

In the SPSS output, R shows the value of the multiple correlation coefficients between the dependent and the independent variables( $R=.880$ ) which represents strong correlation. Next column shows the coefficient of determination or correlation coefficient ( $R^2$ ) which is the proportion of variation in the dependent variable that is explained by the seven independent variables which is 0.774. So 77.4% of the variation in Customer satisfaction with public transport can be explained by seven independent factors in the multiple linear regression models.

Adjusted Coefficient of determination or correlation coefficient squared is found to be 0.769. This value indicates the loss of predictive power or shrinkage and tells us how much variance in the dependent variable would be accounted for if the model had been derived from the population Table 4. 15. The adjusted  $R^2$  gives some idea about how well our model generalizes and ideally its value becomes the same or very close to the value of  $R^2$ . The difference for the model is small ( $0.774-0.769= 0.005$ ) which is 0.5%. This shrinkage means that if the model were derived from the population rather than a sample, it would account for approximately 0.005% less variance in the outcome. Therefore, the researcher concludes that this regression model has resulted in a significant prediction of the influencing factors of the Customer satisfaction with public transport.

Durbin Watson which is done for checking independence of errors tests serial correlation between errors. Durbin-Watson used to detect the presence of autocorrelation in residuals. The value of Durbin-Watson always lies between 0 and 4. If the Durbin-Watson statistic is substantially less than 3, there is evidence of positive serial correlation. As a rough rule of thumb, if Durbin-Watson is less than 1.0, there may be cause for alarm. The value in our analysis is 2.074 which is under the acceptable limit (1-3).

The ANOVA result shows whether the proportion of variance explained in the model summary is significant. It also tells whether the overall effect of the seven independent variables on customer satisfaction with public transport is significant. It shows the value of F statistics 184.020 at 7 and 377 degrees of freedom is statistically significant at 95% confidence which means that model is statistically significant in Table 4.16.

**Table 4.3.2 Test of Hypothesis**

	Hypothesis statement	p-value	Significance	Result
<b>H0<sub>1</sub></b>	A service provided has no significant effect on passenger's satisfaction in the study area.	.020	Significant	<b>Rejected</b>
<b>H0<sub>2</sub></b>	Access to service has no significant effect on passenger's satisfaction in the study area	.000	Significant	<b>Rejected</b>
<b>H0<sub>3</sub></b>	Availability of facilities has no significant effect on passenger's satisfaction in the study area	.000	Significant	<b>Rejected</b>
<b>H0<sub>4</sub></b>	scheduled timings has no significant effect on passenger's satisfaction in the study area.	.000	Significant	<b>Rejected</b>
<b>H0<sub>5</sub></b>	Terminal environment has no significant effect on passenger's satisfaction in the study area.	.000	Significant	<b>Rejected</b>
<b>H0<sub>6</sub></b>	<b>H0<sub>6</sub></b> : Transport comfort has no significant effect on passenger's satisfaction in the study area	.000	Significant	<b>Rejected</b>
<b>H0<sub>7</sub></b>	: Fare system has no significant effect on passenger's satisfaction in the study area	.002	Significant	<b>Rejected</b>

## 5. CONCLUSION AND RECOMMENDATIONS

### 5.1. Conclusion

The basic focus of this study were analyzing determinants which affecting passenger's satisfaction in public transport services the case of Dawuroro bus station, SNNPRS, Ethiopia. The study has taken customer satisfaction with public transport as dependent variable and factors viz., services provided, fare system, Accessibility, Transport Comfort, terminal environment, availability of facilities, and Scheduled Timings as independent variable

Following conclusions can be derived from the finding of this study:

Fare system has the highest impact on customer satisfaction, followed by availability of facility, terminal environment, services provided, transport comfort, accessibility and scheduled timing were found to be significantly affecting customer satisfaction with public transport. With respect to the problems that face passengers using public transport steepness of the road, highest number of passengers, negative attitudes of the drivers profit orienteers of bus owners were major problems in public transport service. Out of seven variables included in model service provided, fares system, transport comfort were negatively influence the customers satisfaction, whereas accessibility, terminal environment, availability of facility and scheduled timing were positively influence customer satisfaction.

Out of the seven hypothesis tested all of seven are accepted.

### 5.2. Recommendations

Based on findings by understanding factors that affect customers' satisfaction in public transport services and problems of the public transport services that would help policy makers to design and implement more effective methods customer satisfaction in public transport. The following possible policy implications are drawn:

- To make the service more affordable and satisfy the requirements of customers as well as to be competent and profitable for the enterprise, flexible and affordable fare rate system should be encouraged. So, the zonal road and transport department should promote services that provided for the passengers.
- To make the transport more comfortable the buses must be always maintained neat, clean and in proper good condition. The seating arrangement in the buses should be comfortable and special facilities. . So, the traffic police and other concerned bodies should focus on buses neat, cleanness and sitting arrangements
- To make the service more reliable and convenient by plying on time, increasing the frequency of the services and by reducing waiting time as well as overcrowding, increasing the number of buses is and the continuous monitoring of the traffic police is critical issue.
- The buses should be run by experienced and competent drivers in order to have safe journey and avoid accidents.
- Personnel in the bus station should be friendly, courteous and show willingness to help the passengers and provide prompt services and explain the announcement of delays of the buses. So, administrates of the Dawuro, zonal transport services and traffic polices should have better to give training and aware drivers and bus owners to bring attitudinal change.

### 5.3. Directions for Further Research

In this study to measure the satisfaction of the public transport services only seven dimensions and it explained by 77.4%. This indicates there could be some other relevant dimensions that that not included in this study. so, the future researches, should focus on more dimensions of factors that affect customer satisfaction with public transport services. Road suitability, poor communication, traffic corruption, etc which can influence customer satisfaction with public transport.

In addition, conducting a replication study in other service sector is important thing; for example in the agricultural sector, health, telecommunication service, education and others.

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