

OPEN ACCESS

Manuscript ID:
MGT-2022-10025178

Volume: 10

Issue: 2

Month: October

Year: 2022

P-ISSN: 2321-4643

E-ISSN: 2581-9402

Received: 20.07.2022

Accepted: 25.08.2022

Published: 01.10.2022

Citation:

Nana, Frehiwot, et al.
“Commuters’ Perception
Using Public Transport
Services and Its Impact on
Passenger Satisfaction: The
Case of Sodo Town, Wolaita
Zone, Southern Ethiopia.”
*Shanlax International Journal
of Management*, vol. 10,
no. 2, 2022, pp. 9–32.

DOI:

[https://doi.org/10.34293/
management.v10i2.5178](https://doi.org/10.34293/management.v10i2.5178)



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Commuters’ Perception using Public Transport Services and its Impact on Passenger Satisfaction: The Case of Sodo Town, Wolaita Zone, Southern Ethiopia

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Abstract

Public transport should become part of a solution for sustainable transport in the future. However, to keep and attract more passengers, public transport must have high service quality to satisfy and fulfil a wide range of different customer’s needs. The purpose of the study is to examine the influencing factors measuring customers’ satisfaction, especially the impact of the factors on customers’ satisfaction with public transportation in Wolaita Sodo Town of SNNPR. The data was gathered through a structured questionnaire from the public transport commuters. A cross-sectional survey was conducted among 385 randomly selected public transportation passengers in Wolaita Sodo Bus Terminal, Wolaita Zone. Descriptive and Inferential statistics to analyze the data using SPSS version 22. Under Inferential statistics, multiple regression analysis was used to identify the relationships between factors influencing customer satisfaction and commuters’ satisfaction. The results showed that the Fare system has the highest impact on customer satisfaction, followed by Transport comfort, Services provided and Scheduled timings. Three other factors, namely accessibility, Availability of facilities and Terminal environment, were insignificant to customer satisfaction. The analysis of the variance of demographic variables on customer satisfaction with public transport showed that gender, Age, and marital status were statistically insignificant in predicting customer satisfaction. In contrast, Religion, income level, and travelling frequency were statistically significant in predicting customer satisfaction. A flexible and affordable fare rate system should be encouraged and implemented for all routes at different distances to make the service more affordable, satisfy customers’ requirements, and be competent and profitable for the enterprise.

Keywords: Customer Satisfaction, Public Transportation, Service Quality, Environment, Service Dimension.

Introduction

Transportation is the movement of people with goods from one place to another. It is a means by which goods like raw material, production equipment, operating inventories, semi-finished goods and finished goods and people can get to or be made available where they are needed for commercials or non-commercial purposes, as when desired. To achieve the welfare of the human

being, the mobility or transportation of people and materials is vital for social interaction, cooperation, production activities, and economic and other types of development. This is why road transport is popularly referred to as the engine and wheel of society and helps the world to go around and function actively. (Olakunori, 2006).

Public transport is vital for all cities, mainly big cities and tourist centres. When inhabitants use public transport vehicles instead of private cars, the pollution is reduced, and the noise in the city is lower. Also, tourists can appreciate cities and tourist centres with easy and customer-friendly public transport. Therefore it is essential to improve the public transport services.

As global competition increases, customers have more varieties to choose from. So, service quality will become their priority when spending their (customers) money, especially as they try to maximize the value in return and satisfaction for every unit of money spent. Therefore, customer satisfaction is considered the most important factor, whether it is meant for a product or a service. In case of failure to satisfy the customers, the company will be replaced by others. Therefore, when industries offer various services, they must be more vigilant because a unique attitude plays a vital role in attracting and retaining customers (Khurshid, Naem, Ejaz, Mukhtar, and Batool, 2012).

Palmer and Cole (1995) state, "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. For example, Rosander (1985), Daniels (1993), and Zeithaml and Bitner (2004) have grouped transportation under the category of services. Transport provides a means of moving people from one place to another, for instance, to get to work, 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 home (Bamford and Robinson, 1978; Wood and Johnson, 1989).

In Addis Ababa, the capital city of Ethiopia and the seat of the 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 contributes to addressing the transport demands of the people (customers), particularly the poor, who cannot afford other alternative modes of transportation. However, the demand for transport services has been increasing from time to time. Therefore, the demand and supply of transport services could not be reconciled. This can be evident from the long lineup 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 to meet and satisfy their requirements and reached a valuable conclusion and recommendations following the research findings.

Increasing travel demand and preferences for using private vehicles are causing rapid motorization in many counties worldwide. Most people are now highly dependent on private motorize travel (Ellaway et al. 2003). This phenomenon was caused because of the attractiveness of cars and people who love to drive (Beirão & Sarsfield Cabral 2007). Increased private motorization has increased traffic congestion, resulting in longer travel times for many people (Beirão & Sarsfield Cabral 2007; Asri & Hidayat 2005).

In addition to congestion, private motorization is also affecting the safety of vulnerable road users (Kodukula 2009), high consumption of non-renewable resources (Aßmann & Sieber 2005), and causes a severe threat to the quality of human environments (Goodwin 1996; Greene & Wegener 1997). Therefore, to prevent more problems caused by this increase in motorization, many researchers and public decision-makers recommend providing an attractive public transport service as an alternative transport mode in many cities.

Public transport should become part of a solution for sustainable transport in the future. However, to keep and attract more passengers, public transport must have high service quality to satisfy and fulfil a broader range of customers' needs (Oliver 1980; Anable 2005). Therefore, it is essential to summarize knowledge about what drives customer satisfaction and dissatisfaction in public transport areas to

design attractive and marketable public transport. The Ethiopian Federal Transport Authority EFTA (2011) report reveals that the sector is facing specific challenges because the entire people of the nation highly lie on road transport than other alternative modes. There is also a prevalence of poor quality of services in the sector, which makes the road transport passengers of the nation dissatisfied. Therefore, this study is intended to assess the Influencing Factors of Customer Satisfaction with Public Transport at Wolaita Sodo Bus Terminal in SNNPRS of Ethiopia.

Oliver (1980) summarized factors influencing customers' satisfaction with buses: punctuality, road worth, courtesy of the operators' experiences and skills, price ticket and safety of the passenger and cargo. However, Mosi (2010) found ticket price, punctuality and reliability as the main factors influencing customers' satisfaction with bus transport. Furthermore, the study found that most vehicles do not operate on fixed schedules, have unpredictable fares, frequently change routes and unsafe destinations/booking offices and do not operate on fixed schedules, they charge fixed fares, but the majority operate according to the demand.

Existing studies on transport carried out in the nation do not adequately address the issue under investigation. For instance, EFTA (2011), in designing a national urban transport policy, examined only the general nature of the road network rather than service quality and customers' satisfaction. On the other hand, Mintesnot and Takano (2007) made a diagnostic evaluation of public transportation mode choice in Addis Ababa with a particular focus on intra-urban government bus transport. Among these and other studies, a microscopic investigation has been conducted on transport service quality and customers' satisfaction with the public road transport sector at the country and regional levels. Based on the above findings, one missing link is worth investigating the services and customers' satisfaction. Also, the findings will create insight into factors that influence customers' satisfaction with public transport. Therefore, this study intends to find the Influencing Factors of Customer Satisfaction with Public Transport at Wolaita Sodo Bus Terminal in SNNPRS of Ethiopia.

Objectives

General Objective

This research study mainly focuses on commuters' perceptions of using public transport services and its impact on passenger satisfaction,

Specific Objectives

The following specific objectives are

1. To identify the factors influencing commuters' satisfaction using public transport services,
2. To analyze the relationship of identified factors with commuters' satisfaction using public transport services and
3. To analyze the impact of demographic factors influencing commuters' satisfaction using public transport services.

Research Hypothesis

Based on the conceptual framework & mathematical model of the study following hypotheses are derived:

- H₁: There is a significant effect between the services provided and customer satisfaction at Wolaita Sodo Bus terminal.
- H₂: There is a significant effect between access to service and customer satisfaction at the Wolaita Sodo Bus terminal.
- H₃: There is a significant effect between availability dimensions and customer satisfaction at the Wolaita Sodo Bus terminal.
- H₄: There is a significant effect between scheduled timings and customer satisfaction at Wolaita Sodo Bus terminal.
- H₅: There is a significant effect between the terminal environment and customer satisfaction at the Wolaita Sodo Bus terminal.
- H₆: There is a significant effect between transport comfort and customer satisfaction at Wolaita Sodo Bus terminal.
- H₇: There is a significant effect between the Fare system and customer satisfaction at Wolaita Sodo Bus terminal.

Literature Review

Public Transportation Service Modes of Urban Transportation

Movements of people, goods and information

have always been fundamental components of human societies. Current economic processes have been accompanied by a significant increase in mobility and higher levels of accessibility. Although this trend can be traced back to the industrial revolution, it significantly accelerated in the second half of the 20th century as trade was liberalized and economic blocs emerged. As a result, the comparative advantages of global labor and resources were used more efficiently. However, these conditions are interdependent with the capacity to manage, support and expand movements of passengers and freight as well as their underlying information flows.

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 and small buses supplemented by a mass of Para-transit vehicles such as taxis and converted pickups are prevalent modes of public transport (Armstrong-Wright, 1993). According to Johnson and Tengstron (2005), bus services are flexible, cost-effective and equitable modes of transport that can satisfy the needs of middle- and low-income groups (Armstrong-Wright, 1993).

Customer Satisfaction

Customer satisfaction is a judgment that a product or service is provided at a pleasurable level of consumption-related fulfilment. Also, there are two levels of individual consumer satisfaction: transaction-specific and cumulative. Transaction-specific satisfaction or encounter satisfaction is a fulfilment response to a single transaction or encounter. In contrast, cumulative satisfaction is a judgment based on many occurrences of the same experience and not just experience. For cases (encounter and cumulative satisfaction), satisfaction is defined as an overall judgment of satisfaction or decomposed into satisfaction with performance or quality attributes (Oliver, 1997; 2010). The growth of passenger road transport and the adequacy of the transport sector focus more on the supply and demand situations. The demand can be seen from the passengers' side, and the supply is from the operators' side.

On the other hand, it shows the ease of use of the supply and demand of transport and other related issues in the sector. Here, customer satisfaction is a critical issue between the two, and different factors may challenge it. Therefore, identifying these factors from both sides and forwarding intervention mechanisms for the problems are necessary to provide quality transportation service.

Customer Satisfaction and Service Quality

In recent times all organization has increasingly come to understand the importance of customer satisfaction. It is widely understood that it is far less costly to keep existing customers than to wind new ones. For many organizations in the public sector, customer satisfaction will be the measure of success. According to Oliver (1997), satisfaction is defined as the customer's fulfilment. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under- or over-fulfilment. Need fulfilment is a comparative process giving rise to satisfaction responses. Any gaps lead to disconfirmation; i.e., Positive disconfirmations increase or maintain satisfaction, and negative disconfirmation creates dissatisfaction.

Service quality (Parasuraman et al. 1988; Gronroos 1984) is a comparison between customer expectation and perception of service. Service quality in general consists of five distinct dimensions: tangibles (Physical facilities, equipment, and appearance of personnel), reliability (ability to perform the promised service dependably and accurately), responsiveness (willingness to help the customer and provide prompt service), assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence), and empathy (caring, individualized attention the firm provide its customer).

Service Quality and Customer Satisfaction

Service Quality

Kotler (1999) defines 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 as satisfaction, i.e. perceived service quality, as well as a match between a customer's expectation of service and perception of its delivery. Therefore, service quality is more appropriately termed as 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 organization's goods or services to a specification that satisfies their need." Service quality is an antecedent of customer satisfaction and satisfaction, in turn, has a more significant effect on purchase intentions (Ibid, 1995).

The literature review also shows that researchers have identified different factors. Of quality in the context of different services. Transit Cooperative Research Plan (TCRP) Report 100 defines transit quality as "the overall measured or perceived performance of transit service from the passenger's point of view." In addition, TCRP Report 88 defines five categories of measures that wholly or partially reflect the passenger's point-of-view in transit services: (1) availability of transit service, (2) service monitoring, (3) travel time, (4) safety and security, and (5) maintenance and construction activity on passenger trips.

Variable Identification

This study's dependent variable is customer satisfaction with public transport services. In addition, independent variables are identified based on the empirical reviews of previous research in the following way.

Services Provided: means information, staff behavior, safe from accident, information at the bus stop etc. Accurate and up-to-date information increases passengers' satisfaction and may also persuade additional passengers to use the service (Iles, 2005). In addition, bus transportation service passengers are increasingly sensitive to waiting time. Therefore, they are more satisfied with scheduled service, which habitually operates according to scheduled departure and arrival times by operating at the appropriate frequency.

H₁: There is a significant effect between the services provided and customer satisfaction at Wolaita Sodo Bus terminal.

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. Beirão (2007) conducted in-depth interviews in Porto to discover dissatisfying factors. The results showed that customers reported a lot of waste time in distance from home to the terminal, too crowded, lack of comfort, time uncertainty, lack of control, unreliability, long waiting times, need to transfer, cannot change the route to avoid traffic congestion, lack of flexibility, and prolonged walking time.

H₂: There is a significant effect between access to service and customer satisfaction at the Wolaita Sodo Bus terminal.

Availability of Facilities: enables passengers to plan their journeys, especially prospective passengers. The facilities in the bus terminal are an essential factor for the commuters. The facilities include toilets, drinking water, a cafeteria, food joints, bus shelters, seating arrangements, parking spaces, lighting facilities during the night, etc.

H₃: There is a significant effect between availability dimensions and customer satisfaction at the Wolaita Sodo Bus terminal.

Scheduled Timings: public bus transport departure frequency, travel time, punctuality etc. When 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 the minimum waiting time. The shorter the waiting time, the greater the convenience level (Iles, 2005). Murambi and Bwisa (2007) also conducted a study to investigate service quality and customer satisfaction in Kenya. A sample of 310 travellers was selected using a simple sampling technique to find the influence of travelling time, booking information and frequency of route change. The study showed that travelling time, waiting time, information and frequency of route change were significant to customer satisfaction.

H₄: There is a significant effect between time and customer satisfaction at Wolaita Sodo Bus terminal.

Terminal Environment cleanliness, bus stop security, onboard security, bus stop condition etc. While the presence of inspectors or conductors on the vehicles, good lighting on buses and at bus stops has a

beneficial effect in reducing the opportunities for the crime of pickpocketing, overcrowding of buses and poor discipline at bus stops and terminals increase passengers' vulnerability to pickpockets (Iles, 2005). On public buses, stealing is common, and people lose their wallets due to pocketing. These acts often create a sense of insecurity among passengers and diminish their satisfaction with public transportation services.

H₅: There is a significant effect between the environment and customer satisfaction at the Wolaita Sodo Bus terminal.

Transport Comfort: which includes bus comfort and seat availability? Good seats with available space to move quickly, good heating and ventilation systems, a high proportion of seated to standing passengers, low step heights (to facilitate access by disabled passengers), and 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 mainly where standing passengers are carried, good protection and resting facilities for waiting for 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).

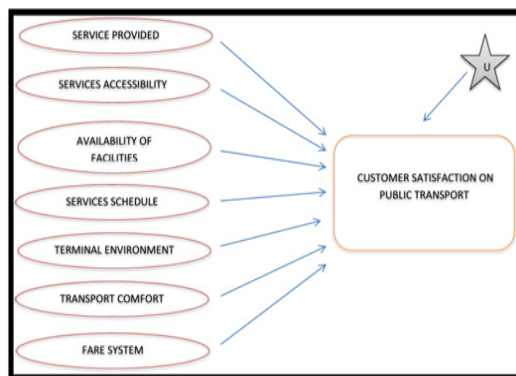
H₆: There is a significant effect between Transport comfort and customer satisfaction at Wolaita Sodo Bus terminal.

Fare System: 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 roadside vending machines is standard in most countries. Whatever the payment system, it should be easier and more user-friendly than others (Bielen and Demoulin (2007); Iles, 2005). Beirão & Sarsfield Cabral (2007) summarizes the advantages of using public transport according to Portugal's public transport users. The result highlights the importance of a cost-friendly and reasonable fare system and less stressful public transport service.

H₇: There is a significant effect between the Fare system and customer satisfaction at Wolaita Sodo Bus terminal

Conceptual Framework

Based on the review of literature conceptual framework for this study was designed.



Independent Variables & Dependent Variable
Figure 1 Conceptual Framework of the Study

The Mathematical Model

The mathematical model can be written as :

$$Y = a + \beta x$$

Where, Y = dependent variable; a = intercept;

β = 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 = Accessibility,

X3 = Availability of facilities,

X4 = Services Schedule,

X5 = Terminal environment

X6 = Transport comfort

X7 = Fare system

U = The Stochastic Disturbance term/ a random and unobserved may represent all other challenging factors.

Research Methodology

Description of the Study Area

Wolaita zone is one of the thirteen zones of the SNNPR, covering an area of 4,471.3 km². The

zone lies 1,200 to 2,950 meters above sea level. The zone's total population is about 2,721,339, with a density of 385 inhabitants per square kilometre. The zone has three agro-ecological zones, Dega (3%), Weyenedega (57.96%) and kola (40%). The annual average temperature of the zone is 15.10c0, and the mean annual rainfall ranges from 1200 to 1300 mm. Sodo town is the administrative centre of the zone and is divided into three sub-cities: Mehal, Merkato and Arada, with eleven kebeles. The town is established at the foot of mount Damota, 2200 meters above sea level. Sodo Town is among the few towns in the region endowed with good infrastructure access, road network, hydro-electric power and cleaned pipe water supply, modern telephone, banking, educational and health facilities. It has a total population of male 68,652, female 71,453 total population of 140,105 (51% female and 49% male).

Target Population

The population for the study is infinite. Therefore, the passengers availing of the public transport facility from Wolaita Sodo Bus Terminal cannot be ascertained.

Research Design

Research design is the conceptual structure within which research is conducted. It constitutes a blueprint for collecting, measuring, and analyzing data. This study was based on a causal research design, which is preferable to identify the extent and nature of cause-and-effect relationships between the independent and dependent variables.

Data Source and Type

The study used primary sources in order to gather relevant information for the study. The primary data was collected from the passengers taking public transport services from Sodo Bus Terminal. The study employed mainly a questionnaire in collecting the primary data, and the analysis was substantially based on primary data. The secondary data collected from existing literature forms in the study's literature review includes books, journals, and articles on the internet. Both quantitative and qualitative data were collected. The data collected through the questionnaire had closed-ended questions measured on a continuous scale.

Instrument & Scale

The questionnaire that was used in this study had two parts. The first part is designed to collect information on some influencing factors on the customers' satisfaction with using public transport were considered, using a five-point Likert scale ranging from "very important" to "Least important". In the second part, the demographic information from each respondent was collected.

Sampling Design

For this study, the researcher used Systematic random sampling as the total population is infinite. For example, approximately 10000 passengers are commuting every day. In this kind of sampling, only the first passenger was selected randomly, while the rest of the passengers were chosen using the skip interval of 50.

Sampling Frame

The sample frame constituted the passengers availing of the transport facility during the 15 days the research was conducted.

Sample size

The population of the study is infinite, and the passengers availing of the public transport facility from Wolaita Sodo Bus Terminal cannot be ascertained. Therefore, the sample size to collect data through a questionnaire for this research will be determined using the Cochran method of sample determination for an infinite population at a 95% confidence level.

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

Where,

n = Sample Size

Z= Standard Normal Variate = standard error associated with the chosen level of confidence (1.96)

e = Significance Level

p = The estimated proportion of an attribute

q = 1-p

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

Data Processing and Analysis

The primary data collected from questionnaires were processed by data filtering and editing to make them meet the study's objectives of drawing constructive conclusions and recommendations. The responses in the completed questionnaire were coded and entered into a data entry template. The data collected from respondents through questionnaires were analyzed using descriptive statistics such as mean, percentages and standard deviation to present the responses obtained from the respondents. Tables and a chart were used for data presentation. The correlation was also used to test the strength of the relationship between the independent and dependent variables. Regression and analysis of variance were employed to test the hypothesis of this study. In analyzing the data, the researcher used SPSS version 22 software packages to determine some influencing factors on the customers' satisfaction with using public transport

Reliability Test

In this study, Cronbach's Alpha reliability test was used to measure each of the variables and examine how well the variables can correlate to each other. According to Hair et al. (2006), if Cronbach's Alpha (α) is more significant than 0.7, it means that it has high reliability. On the other hand, if α is smaller than 0.3, then it implies low reliability. So if the score is high, its reliability is more and the lower the score then, the lower the reliability. As explained above, Cronbach's Alpha must be at least 0.7 to achieve reliability. Therefore to check the instrument's reliability, twenty-six questionnaires from the 35 questionnaires distributed and collected to the commuters at Wolaita Sodo Bus Terminal were considered and analyzed with the help of SPSS version 22 for the reliability of these questionnaires tested.

Table 1 Summary of Reliability Study

Variables	Construct	Cronbach's Alpha
IV	Services Provided	0.911
IV	Accessibility	0.711
IV	Availability of facilities	0.735

IV	Scheduled timing	0.852
IV	Terminal environment	0.775
IV	Transport comfort	0.721
IV	Fare system	0.841
DV	Customer satisfaction with public transport	0.857

Source: Own Survey, 2018

Note: IV: Independent Variable and DV: Dependent Variable

Validity of the Instruments

Content Validity

The content validity of the questionnaire was ascertained by the advisor and two instructors from the Management department of Wolaita Sodo University. The researcher gained valuable insights from these instructors and advisors, especially about the content validity and clarity of questions and instructions in all instruments. Based on their comments, the researcher revised the contents of the questionnaire before it was used in the study.

Face Validity

According to Gray (2004), researchers can benefit much from ascertaining the face validity of instruments by using some study participants. Since the executives of companies were the participants of this study, they had the chance to comment on this instrument. To maintain the trustworthiness and believability of the study, sample participants' of the employees confirmed the finding. They proved the study's credibility by stating their agreement with the result obtained.

All possible attempts were made to make the study biased-free. The researcher explored different review works of literature and related studies on the anticipated issues to avoid dependency on limited works. The different design methods were also read and understood to choose the best for the issue raised. Furthermore, the instrument was also chosen based on the selected type of research design. Therefore, the study's dependability was checked and found to be consistent.

Convergent Validity

Convergent validity of the variable items was ensured by checking inter-item correlation among

the items of various variables (Appendix B). For every variable, the inter-item correlation was found to be more than .3, which infer that variable items converge with each other.

Descriptive Statistics

According to Pallant (2007), descriptive statistics is a powerful tool to describe and understand the data so that researchers can easily understand the data. Therefore, participants of this research were asked different questions based on the dependent and independent variables related to the research objectives and research question, which was designed using a five-point Likert Scale to measure their level of agreement on the variables.

Descriptive statistics in frequency, percentage, mean score and standard deviation were used for the purpose and the dependent and independent variables of Customer satisfaction with public transport at WolaitaSodo bus terminal. The researcher interprets an overall response of the Customer satisfaction with public transport level of agreement about each item listed in the five-point Likert scale based on the standardized agreed listed range described below for the factors.

Table: 2 Mean Score Range for Five Scale Likert's Response

Range	Members Perception	Interpretation
(0 - 1)	Strongly disagree	Poor
(1.01 - 2)	Disagree	Satisfactory
(2.01 - 3)	Neutral	Good
(3.01 - 4)	Agree	Very good
(4.01 - 5)	Strongly agree	Excellent

Source: Researchers' creation

The descriptive statistics utilized are based on frequency tables to provide information on the demographic variables. Through tables, summary statistics such as means, standard deviations, Skewness and Kurtosis are computed for every independent variable and dependent variable. This is followed by presenting inferential statistics based on each hypothesis formulated for the study. All statistical test results were computed at the 2-tailed level of significance. The alpha levels of .05 were selected a priori for the significance test

for correlations, multiple regression analysis, and simple linear regression.

**Data Presentation and Analysis
Analysis of Demographic Variables**

The demographic characteristics of this research include gender, age, religion, marital status, level of income, and travelling frequency. This demographic data express the respondents' characteristics and gives detailed information about the sample population. It is described in terms of frequency and percentage analysis in the tables below, interpreting and narrating the information below.

Table 3 Composition of Gender

Gender	Frequency	Percent
Male	250	64.9
Female	135	35.1
Total	385	100.0

Source: Own Survey, 2018

As far as the composition of gender is concerned, 250 (64.9%) of the respondents are male, and 135 (35.1%) are females, as revealed in table 3. From this, it can be understood that commuters availing the public transport from Wolaita bus terminal consist of both sexes, with the majority of males revealed in item no 1.

Table 4 Composition of Age

Age	Frequency	Percent
18-20	120	31.2
21-30	133	34.5
31-40	81	21.0
41-50	49	12.7
Above 50	2	0.5
Total	385	100.0

Source: Own Survey, 2018

As far as the composition of age is concerned, 120 (31.2%) of the respondents are in the range of 18-20 years, 133 (35.4%) are in the range of 21-30 years, 81 (21%) are in the range of 31-40 years, 49 (12.7%) are in the range of 41-50 years, and 2 (0.5%) are above 50 years as revealed from the table 4. From this, it can be understood that commuters availing the

public transport from Wolaita bus terminal consist of all age groups, with the majority of 21-30 years.

Composition of Religion

As far as the composition of religion is concerned, 268 (69.6%) of the respondents are Christians, 95 (24.7%) are Muslims, and 22(5.7%) are others, as revealed in table 5. From this, it can be understood that commuters availing the public transport from Wolaita bus terminal consist of different religions, with most Christians revealed from item No. 1.

Table 5 Composition of Religion

Religion	Frequency	Percent
Christians	268	69.6
Muslims	95	24.7
Others	22	5.7
Total	385	100.0

Source: Own Survey, 2018

Table 6 Composition of Marital Status

Marital Status	Frequency	Percent
Married	237	61.6
Unmarried	138	35.8
Others	10	2.6
Total	385	100.0

Source: Own Survey, 2018

As far as the composition of marital status is concerned, 237 (61.6%) of the respondents are married, 138 (35.8%)are unmarried, and 10 (2.6%) are others, as revealed in table 6. From this, it can be understood that commuters availing the public transport from Wolaita bus terminal consist of all types of marital status, with the majority of married people with 61.6%.

Composition of Level of Income

As far as the composition of the level of income is concerned, 60 (15.6%) of the respondents are in the range of less than 1000, 133(34.5%) are in the range of 1001-2500, 105 (27.3%) are in the range of 2501-5000, 47 (12.2%) are in the range of 5001 - 7500, 21(5.5%) are in the range of 7501-10000, 15(3.9%) are in the range of 10001 - 15000, and 4(1%) are above 15000 as revealed from the table 6. From this,

it can be understood that commuters availing the public transport from Wolaita bus terminal consist of all levels of income earners with the majority of between 1001-2500, i.e. 34.5%

Table 7 Composition of Level of Income

Marital Status	Frequency	Percent
Less than 1000	60	15.6
1001 – 2500	133	34.5
2501 – 5000	105	27.3
5001 – 7500	47	12.2
7501 – 10000	21	5.5
10001 – 15000	15	3.9
More than 15000	4	1.0
Total	385	100.0

Source: Own Survey, 2018

Table 8 Composition of Frequency of Travelling with Public Transport

Travelling	Frequency	Percent
Daily	67	17.4
Weekly	127	33
Once a month	138	35.8
Every 2-3 months	48	12.5
Once a year	5	1.3
Total	385	100.0

Source: Own Survey, 2018

As far as the composition of Frequency of travelling by public transport is concerned, 67 (17.4%) of the respondents travel daily, 127 (33%) travel weekly, 138(35.8%) are travelling once a month, 48 (12.5%) are travelling every 2 to 3 months, and 5 (1.3%) are travelling once a year as revealed from the table 7. From this, it can be understood that commuters availing the public transport from Wolaita bus terminal are a mix of all commuters travelling at different intervals, with the majority at once a month, i.e. 35.8%.

Descriptive Study of Variables

The descriptive statistics were computed for the dependent and independent variables items. The respondents were asked to rate their agreement on the dependent and independent variables using a five-point Likert scale questionnaire and analyzed

using mean and standard deviation measures. It was mentioned below the table to present the identified average level of agreements for each item and variable by the sampled commuters. For example, customer satisfaction with public transport at

Wolaita Sodo bus terminal is a dependent variable, and factors viz., Fare System, Accessibility, Services Provided, Transport Comfort, Scheduled Timings, Availability Facilities, and Terminal Environment an independent variable.

Table 9 Descriptive Statistics for Independent and Dependent Variables

Categories	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Services	385	1.00	5.00	2.5112	1.06883
Accessibility	385	1.00	5.00	2.5870	1.09786
Facilities	385	1.00	5.00	2.0740	0.99021
Timings	385	1.00	5.00	2.4818	1.13293
Environment	385	1.00	5.00	2.2773	1.01802
Comfort	385	1.00	5.00	2.2519	0.96597
Fare	385	1.00	5.00	2.4448	1.09926
Satisfaction	385	1.00	5.00	2.3377	1.08958
Valid N (List wise)	385				

Source: Own Survey, 2018

Table 8 shows the most critical factors of customer satisfaction with public transport at Wolaita Sodo bus terminal based on the mean scores

and standard deviation. Finally, the ranking of the variables according to their importance is given in table 9.

Table 10 Ranking of Independent Variables

Variables	Mean	Std. Deviation	Extent of the highest mean score
Accessibility	2.5870	1.09786	1st
Services provided	2.5112	1.06883	2nd
Scheduled Timings	2.4818	1.13293	3rd
Fare System	2.4448	1.09926	4th
Terminal Environment	2.2773	1.01802	5th
Transport Comfort	2.2519	0.96597	6th
Availability of Facilities	2.0740	0.99021	7th
Customer Satisfaction (Y)	2.3377	1.08958	

Source: Own Survey, 2018

Table 9 shows the ranking of the independent variables based on the mean. It shows that the mean score is the highest for Accessibility. It means that Accessibility is the most important factor, followed by Services Provided, Scheduled Timings, Fare System, Terminal Environment and Transport Comfort as per table 4.8 of Descriptive Statistics mean. The least mean is the availability of facilities at 2.0740, which indicates that it is a less critical factor for customer satisfaction with public transport at the Wolaita Sodo bus terminal.

Inferential Statistics

In this section, the result of inferential statistics is presented. In addition, regression analysis was performed to assess the study's objectives. With these statistical techniques, conclusions are drawn regarding the sample and decisions are made regarding the research hypothesis.

Normality Test

A normality test of data is applied to determine whether the data is well-modelled by a normal

distribution or not and to compute how likely an underlying random variable is to be normally distributed. Skewness and Kurtosis were used to measure the normality of data for this study. George and Mallery (2005) stated that the acceptable range for skewness and Kurtosis is ± 2 . Therefore, according

to this study, the Skewness and Kurtosis of each variable fall within the gap of ± 2 . Hence, the data collected is considered normally distributed. After analyzing table 10, we see that for every variable, the data is almost generally distributed as the range for skewness and Kurtosis falls under ± 2 .

Table 11 Results of Skewness and Kurtosis

Categories	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Services	385	.566	.124	-.411	.248
Accessibility	385	.500	.124	-.526	.248
Facilities	385	1.233	.124	1.179	.248
Timings	385	.539	.124	-.629	.248
Environment	385	.869	.124	.137	.248
Comfort	385	.798	.124	.326	.248
Fare	385	.481	.124	-.651	.248
Satisfaction	385	.581	.124	-.402	.248
Valid N (Listwise)	385				

Source: Own Survey, 2018

Pearson Correlation Analysis

According to Brooks (2008), the correlation between two variables measures the degree of linear association between them. Therefore, a correlation coefficient was used to find the association of the independent variables with employee performance values of the correlation coefficient range between a positive and a negative. A correlation coefficient of positive one indicates a perfect positive association between the two variables; In comparison, a correlation coefficient of negative one indicates a perfect negative association between the two variables. On the other hand, a correlation coefficient of zero indicates that there is no linear relationship between the two variables.

Pearson correlation coefficient(r) tests whether a linear relationship exists between two variables. The correlation coefficient is a statistical measure of association between two numerical variables (Zikmund, 2003). It is the most widely used for summarizing the degree of relationship and direction between two variables. The correlation coefficient is a standardized measure of an observed effect; it is a commonly used measure of the size of an effect. For example, according to Alwadael (2010), values of ± 1 represent a small effect, ± 3 is a medium effect, and ± 5 is a significant effect.

Table 11 shows the correlation between independent variables and employee performance. To know whether the effect is substantive, the researcher needs to calculate the effect sizes of each customer satisfaction with public transport predictors using correlation coefficients. Table 11 indicates the correlation coefficient for the relationship between the dependent variable customer satisfaction with public transport and the seven independent variables Fare System, Accessibility, Services Provided, Transport Comfort, Scheduled Timings, Availability Of Facilities, and Terminal Environment are linear and have a strong correlation to the moderate correlation coefficient.

Table 11 shows the level of correlation between the dependent variable, customer satisfaction with public transport and the independent variables.

Customer satisfaction with public transport is positively related to the predictor variable services provided with a Pearson correlation coefficient of $r=0.644$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and services provided.

Customer satisfaction with public transport is positively related to the predictor variable accessibility with a Pearson correlation coefficient of

$r=0.480$ and Sig. (2-tailed) is 0.000, which is <0.05 , between customer satisfaction and accessibility. so there is a moderately significant relationship

Table 12 Correlation Analysis of Each Variable with Customer Satisfaction

Categories of Services	Correlation	Customer Satisfaction
Services provided	Pearson correlation	0.644
	Sig. (two-tailed)	0.000**
Accessibility	Pearson correlation	0.480
	Sig. (two-tailed)	0.000**
Availability of facilities	Pearson correlation	0.587
	Sig. (two-tailed)	0.000**
Scheduled Timings	Pearson correlation	0.644
	Sig. (two-tailed)	0.000**
Terminal Environment	Pearson correlation	0.687
	Sig. (two-tailed)	0.000**
Transport Comfort	Pearson correlation	0.701
	Sig. (two-tailed)	0.001**
Fare System	Pearson correlation	0.694
	Sig. (two-tailed)	0.000**

**Correlation is significant at the 0.01 level (2-tailed)

Source: Own Survey, 2018

Customer satisfaction with public transport is positively related to the predictor variable availability of facilities with a Pearson correlation coefficient of $r=0.587$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and the availability of facilities.

Customer satisfaction with public transport is positively related to the predictor variable scheduled timings with a Pearson correlation coefficient of $r=0.644$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and scheduled timings.

Customer satisfaction with public transport is positively related to the predictor variable terminal environment with a Pearson correlation coefficient of $r=0.687$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and terminal environment.

Customer satisfaction with public transport is positively related to the predictor variable transport comfort with a Pearson correlation coefficient of $r=0.701$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and transport comfort.

Customer satisfaction with public transport is positively related to the predictor variable fare system with a Pearson correlation coefficient of $r=0.694$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and the fare system.

Regression Analysis

Regression analysis is a statistical procedure used for estimating the relationships between one or more predictor variables and response variables. In order to test for the influence of each independent variable on the dependent variable, linear and multiple regression analysis was performed.

Multiple regression analysis is used to show the degree to which the independent variable explains the variance in the dependent variable; it also indicates the respective contribution of each of these independent variables and helps to determine whether the results are statistically significant. However, the correlation result only shows the relationship between the variables. However, it does not show the exact percentage changes of the dependent and independent variables and the strength and degree of the relationship between variables (Kothari,

2004). Therefore, the significance of the hypothesis was tested using multiple regression analysis, the exact percentage changes of the dependent and independent variables and the strength and degree of the relationship between variables. The tables below present the regression analysis results.

In order to determine the extent to which the predictor variables explain the variance in the outcome, multiple regression analysis was performed. First, normality of data was ensured by seeing the skewness and kurtosis level, which was found under acceptable level 2 (skewness / standard error = < 2). Then, by viewing the correlation matrix, we can check the multi-collinearity among the independent variables. According to the rule of thumb test, multi-collinearity is a potential problem if the absolute value

of the sample correlation coefficient exceeds 0.7 for any two of the independent variable (Anderson et al., 2011). Therefore, before conducting the multiple regression analysis, the researcher examined the result of multiple correlations among the independent variables and found that the pair-wise correlation between the independent variables is below 0.7. In addition, VIF and Tolerance parameters were also checked for multi-collinearity.

In regression analysis, we regress the customer satisfaction with public transport at Wolaita Sodo bus terminal as a dependent variable and factors viz., Fare System, Accessibility, Services Provided, Transport Comfort, Scheduled Timings, Availability Facilities, Terminal Environment as the independent variable.

Table 13 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.814a	.662	.656	.63911	1.613

Source: Own Survey, 2018

- a. Predictors: (Constant), Fare, Accessibility, Services, Comfort, Timings, Facilities, Environment
- b. Dependent Variable: Satisfaction

Table 12 is the result of this multiple regression analysis considering Customer satisfaction with public transport as the dependent variable and the seven independent variables: Fare System, Accessibility, Services Provided, Transport Comfort, Scheduled Timings, Availability Facilities, and Terminal Environment. In the SPSS output table 9, R shows the value of the multiple correlation coefficients between the dependent and the independent variables (R = .814), representing a strong correlation. The next column shows the Coefficient of determination or correlation coefficient (R²), which is the proportion of variation in the dependent variable explained by the seven independent variables. So 66.2% of the variation in Customer satisfaction with public transport can be explained by seven independent factors in the model. Thus it can be concluded that the above-mentioned independent factors share 66.2% of the influence on Customer satisfaction with public transport at the Wolaita Sodo bus terminal. This means that 33.8% of the influencing factors of Customer satisfaction with public transport can not be explained by these study variables, which may require further investigations in other research.

The adjusted Coefficient of determination or correlation coefficient squared is 0.656. 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. The adjusted R² gives some idea about how well our model generalizes; ideally, its value becomes the same or very close to the value of R². The difference for the model is slight (0.662-0.656= 0.006) which is 0.6%. This shrinkage means that if the model were derived from the population rather than a sample, it would account for approximately 0.006% less variance in the outcome. Therefore, the researcher concludes that this regression model has significantly predicted the influencing factors of customer satisfaction with public transport.

Durbin Watson, which is done to check the independence of errors, tests the serial correlation between errors. Durbin-Watson was 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 2, there is evidence of a 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 (1-3). analysis is 1.613, which is under the acceptable limit

Table 14 ANOVA for Independent and Dependent Variables

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	301.890	7	43.127	105.583	.000 ^b
	Residual	153.992	377	.408		
	Total	455.882	384			
a. Dependent Variable: Satisfaction						
b. Predictors: (Constant), Fare, Accessibility, Services, Comfort, Timings, Facilities, Environment						

Source: Own Survey, 2018

ANOVA Table 13 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 that the value of F statistics 105.583 at 7 and 377 degrees of freedom is statistically significant at 95% confidence which means that model is statistically significant. This sign also shows that the model is significantly better at predicting the outcome and unlikely to happen by chance. The model significantly improves the ability to predict the outcome variable.

Table 14 shows the regression coefficients of influencing factors that affect customer satisfaction with public transport. Table 14 shows four independent variables, namely services provided, scheduled timings, transport comfort, and fare system, positively and significantly affect customer satisfaction with public transport at Wolaita Sodo bus terminal.

The p-value is less than 0.05 for these four variables, whereas accessibility, availability of facilities and terminal environment show insignificant effects. Hence, it indicates that the four independent variables, namely services provided, scheduled timings, transport comfort, and fare system, are significant in predicting customer satisfaction(dependent variable), and accessibility, availability of facilities and terminal environment are not significant. The significance of the B value shows that B is different from 0 for these three significant variables. Services provided $\beta_1 = .237$, scheduled timings $\beta_4 = .141$, transport comfort $\beta_6 = .304$, fare system $\beta_7 = .310$ are statistically significant variables that can predict the effect on customer satisfaction because of using public transport Whereas accessibility $\beta_2 = .005$, availability of facilities $\beta_3 = -.029$ and terminal environment $\beta_5 = .090$ as customer satisfaction with public transport factors does not have a statistically significant impact since its p-value is greater than 0.05.

Table 14 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.086	.100		-860	.390		
Services	.237	.049	.232	4.863	.000	.393	2.543
Accessibility	.005	.041	.005	.132	.895	.532	1.880
Facilities	-.029	.062	-.026	-4.63	.644	.285	3.504
Timings	.141	.049	.196	2.871	.012	.339	2.951
Environment	.090	.069	.084	1.296	.196	.215	4.651
Comfort	.304	.052	.269	5.806	.000	.417	2.401
Fare	.310	.041	.313	7.584	.000	.528	1.895

Source: Own Survey, 2018

a. Dependent Variable: Satisfaction

To know the impact and relationship of independent variables on the dependent variable (Customer satisfaction), the regression function is in the form of the following.

The regression equation can be stated as:

$$CSPT = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + \beta_5 X5 + \beta_6 X6 + \beta_7 X7 + \mu$$

$\beta_0 = -.086$ which is constant

$$CSPT = .237X1 + .141X4 + .304X6 + .310X7$$

From table 14, after analyzing the t value, we can see that the Fare system has the highest impact on customer satisfaction ($t = 7.584$), followed by transport comfort ($t = 5.806$), followed by services provided ($t = 4.863$), followed by scheduled timings ($t = 2.871$). Finally, table 4.11 shows the output of the multi-collinearity test, which shows that there is no multi-collinearity among independent variables as all VIF values are below 2.5 and Tolerance values are near .5.

Normality test for Residuals

Statistical tests and procedures assume that data follows a normal (bell-shaped) distribution. Before applying statistical methods that assume normality, the researcher performs a normality test on the data with some methods to check the residual for normality. If the data follows a normal distribution, the hypothesis is accepted if it is not, the researcher rejects the hypothesis. The researcher has taken 385 relatively large sample sizes; if so, the histogram below presented has a normal (bell-shaped) distribution of variables, so it is possible to use multiple linear regression. Figure 2 is a histogram of the distribution of residuals. Figure 4.2 is a P-P plot of residuals when the dependent variable is customer satisfaction with public transport, which depicts that residuals are normally distributed.

According to Krithikadatta (2014), a normal distribution looks like a symmetric bell-shaped

curve, and the mean, median, and mode are equal or close. Therefore figure 2 shows the underlying frequency distribution that looks like a bell-shaped curve.

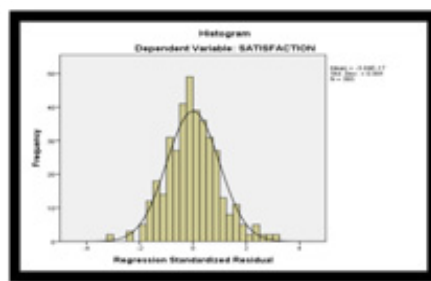


Figure 2 Residual Distribution Histogram
Source: Own Survey, 2018

Figure 3 shows the p-p plot of standardized residuals. A normal probability plot is extremely useful for testing normality assumptions. The normal probability plot of the residuals should roughly follow a straight line. So figure 3 shows that the line is almost straight.

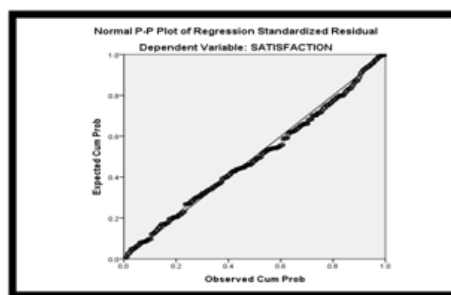


Figure 3 Normal P-P Plot of regression
Source: Own Survey, 2018

Test of Hypothesis

Based on table 15, by using Regression Model, the study's hypothesis is tested. The below table shows the significance level of the hypothesis

Table 15 Test of Hypothesis

S. No.	Hypothesis Statement	p-value	Significance	Result
H1	There is a significant effect between the services provided and customer satisfaction at Wolaita Sodo Bus terminal.	.000	Significant	Accepted
H2	There is a significant effect between access to service and customer satisfaction at Wolaita Sodo Bus terminal.	.895	Insignificant	Rejected

H3	There is a significant effect between the availability of facilities and customer satisfaction at the Wolaita Sodo Bus terminal.	.644	Insignificant	Rejected
H4	There is a significant effect between scheduled timings and customer satisfaction at Wolaita Sodo Bus terminal.	.012	Significant	Accepted
H5	There is a significant effect between the environment and customer satisfaction at the Wolaita Sodo Bus terminal.	.196	Insignificant	Rejected
H6	There is a significant effect between Transport comfort and customer satisfaction at the Wolaita Sodo Bus terminal.	.000	Significant	Accepted
H7	There is a significant effect between the Fare system and customer satisfaction at Wolaita Sodo Bus terminal.	.000	Significant	Accepted

Source: Own Survey, 2018

Impact of Demographic Variables on Customer Satisfaction

Table 16 Analysis of Variance of Gender on Customer Satisfaction

Categories	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.003	1	2.003	1.690	.194
Within Groups	453.879	383	1.185		
Total	455.882	384			

Source: Own Survey, 2018

Table 16 shows the analysis of the variance of customer satisfaction based on gender. Again, the analysis results state a statistically insignificant difference in customer satisfaction based on the respondent's gender since its P value is 0.194 >.05.

Table 17 Analysis of Variance of Age on Customer Satisfaction

Categories	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	15.260	4	3.815	3.290	.011
Within Groups	440.622	380	1.160		
Total	455.882	384			

Source: Own Survey, 2018

Table 17 shows the analysis of the variance of customer satisfaction based on Age. The result of the analysis states that there is a statistically insignificant difference in customer satisfaction based on the respondent's Age since its P value is 0.11, which is >.05.

Table 18 Analysis of Variance of Religion on Customer Satisfaction

Categories	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	27.907	2	13.953	12.454	.000
Within Groups	427.975	382	1.120		
Total	455.882	384			

Source: Own Survey, 2018

Table 18 analyses the variance of customer satisfaction based on Religion. The result of the analysis states that there is a statistically significant difference in customer satisfaction based on respondent's religion since its P value is 0.000, which is <.05. As per the result of the Post-hoc test shown in table 19 indicates that all the commuters belonging to all the three religions show different levels of satisfaction which is significant. Christians show more satisfaction than Muslims, while other categories have more satisfaction than Christians and Muslims.

Table 19 Multiple Comparisons of Religion

Multiple Comparisons						
Dependent Variable:	Satisfaction					
(I) Religion		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Christian	Muslim	.45731*	.12639	.001	.1599	.7547
	Others	-.67922*	.23475	.011	-1.2315	-.1269
Muslim	Christian	-.45731*	.12639	.001	-.7547	-.1599
	Others	-1.13652*	.25044	.000	-1.7258	-.5473
Others	Christian	.67922*	.23475	.011	.1269	1.2315
	Muslim	1.13652*	.25044	.000	.5473	1.7258

*. The mean difference is significant at the 0.05 level.

Source: Own Survey, 2018

Table 20 Analysis of Variance of Marital Status on Customer Satisfaction

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.584	2	1.292	1.089	.338
Within Groups	453.297	382	1.187		
Total	455.882	384			

Source: Own Survey, 2018

Table 20 shows the analysis of the variance of customer satisfaction based on marital status. Again, the analysis results state a statistically insignificant difference in customer satisfaction based on the respondent's marital status since its P value is 0.338, which is >.05.

Table 21 Analysis of Variance of the Level of Income on Customer Satisfaction

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	18.924	6	3.154	2.728	.013
Within Groups	436.958	378	1.156		
Total	455.882	384			

Source: Own Survey, 2018

Table 21 shows the analysis of the variance of customer satisfaction based on income level. The result of the analysis states that there is a statistically significant difference in customer satisfaction based on the respondent's level of income since its P value is 0.013, which is <.05. As per the result of the Post-hoc test shown in table 22 indicates that commuters whose level of income is less than 1000 show a different level of satisfaction which is significant with the level of income of 7501-10000 whereas the level of income of 7501-10000 shows a different level of satisfaction which is significant with the level of income of less than 1000 and also 10001-15000.

Table 22 Multiple Comparisons of the Level of Income

Multiple Comparisons						
Dependent Variable:	Satisfaction					
(I) Level of income		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Less than 1000	1001-2500	.32485	.16721	.453	-.1708	.8205

Less than 1000	2501-5000	.25952	.17400	.750	-.2563	.7753
	5001-7500	.23676	.20943	.918	-.3841	.8576
	7501-10000	1.00238*	.27260	.005	.1943	1.8105
	10001-15000	-.12778	.31037	1.000	-1.0478	.7923
	More than 15000	.60556	.55521	.931	-1.0403	2.2514
1001-2500	Less than 1000	-.32485	.16721	.453	-.8205	.1708
	2501-5000	-.06533	.14036	.999	-.4814	.3507
	5001-7500	-.08809	.18245	.999	-.6289	.4527
	7501-10000	.67753	.25246	.105	-.0709	1.4259
	10001-15000	-.45263	.29284	.717	-1.3207	.4154
	More than 15000	.28070	.54561	.999	-1.3366	1.8980
2501-5000	Less than 1000	-.25952	.17400	.750	-.7753	.2563
	1001-2500	.06533	.14036	.999	-.3507	.4814
	5001-7500	-.02276	.18869	1.000	-.5821	.5366
	7501-10000	.74286	.25701	.061	-.0190	1.5047
	10001-15000	-.38730	.29677	.849	-1.2670	.4924
	More than 15000	.34603	.54772	.996	-1.2776	1.9697
5001-7500	Less than 1000	-.23676	.20943	.918	-.8576	.3841
	1001-2500	.08809	.18245	.999	-.4527	.6289
	2501-5000	.02276	.18869	1.000	-.5366	.5821
	7501-10000	.76562	.28221	.098	-.0709	1.6022
	10001-15000	-.36454	.31884	.914	-1.3097	.5806
	More than 15000	.36879	.55999	.995	-1.2912	2.0288
7501-10000	Less than 1000	-1.00238*	.27260	.005	-1.8105	-.1943
	1001-2500	-.67753	.25246	.105	-1.4259	.0709
	2501-5000	-.74286	.25701	.061	-1.5047	.0190
	5001-7500	-.76562	.28221	.098	-1.6022	.0709
	10001-15000	-1.13016*	.36347	.033	-2.2076	-.0527
	More than 15000	-.39683	.58655	.994	-2.1355	1.3419
10001-15000	Less than 1000	.12778	.31037	1.000	-.7923	1.0478
	1001-2500	.45263	.29284	.717	-.4154	1.3207
	2501-5000	.38730	.29677	.849	-.4924	1.2670
	5001-7500	.36454	.31884	.914	-.5806	1.3097
	7501-10000	1.13016*	.36347	.033	.0527	2.2076
	More than 15000	.73333	.60503	.889	-1.0601	2.5268
More than 15000	Less than 1000	-.60556	.55521	.931	-2.2514	1.0403
	1001-2500	-.28070	.54561	.999	-1.8980	1.3366
	2501-5000	-.34603	.54772	.996	-1.9697	1.2776
	5001-7500	-.36879	.55999	.995	-2.0288	1.2912
	7501-10000	.39683	.58655	.994	-1.3419	2.1355
	10001-15000	-.73333	.60503	.889	-2.5268	1.0601

*. The mean difference is significant at the 0.05 level.

Source: Own Survey, 2018

Table 23 Analysis of Variance of Travelling Frequency on Customer Satisfaction

Categories	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	34.905	4	8.726	7.877	.000
Within Groups	420.976	380	1.108		
Total	455.882	384			

Source: Own Survey, 2018

Table 23 shows the analysis of the variance of customer satisfaction based on travelling frequency. The analysis results state a statistically significant difference in customer satisfaction based on the respondent's travelling frequency since its P value is 0.000, which is <.05.

Table 24 Multiple Comparisons of Travelling Frequency

Multiple Comparisons						
Dependent Variable:	Satisfaction					
(I) Travelling		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Daily	Weekly	.14091	.15893	.902	-.2947	.5765
	once a month	.72749*	.15672	.000	.2979	1.1571
	every 2-3 months	.31354	.19903	.514	-.2320	.8591
	once a year	-.18507	.48796	.996	-1.5225	1.1524
Weekly	Daily	-.14091	.15893	.902	-.5765	.2947
	once a month	.58658*	.12943	.000	.2318	.9413
	every 2-3 months	.17263	.17833	.869	-.3162	.6614
	once a year	-.32598	.47988	.961	-1.6413	.9893
once a month	Daily	-.72749*	.15672	.000	-1.1571	-.2979
	Weekly	-.58658*	.12943	.000	-.9413	-.2318
	every 2-3 months	-.41395	.17637	.133	-.8974	.0695
	once a year	-.91256	.47916	.317	-2.2259	.4008
every 2-3 months	Daily	-.31354	.19903	.514	-.8591	.2320
	Weekly	-.17263	.17833	.869	-.6614	.3162
	once a month	.41395	.17637	.133	-.0695	.8974
	once a year	-.49861	.49462	.852	-1.8543	.8571
once a year	Daily	.18507	.48796	.996	-1.1524	1.5225
	Weekly	.32598	.47988	.961	-.9893	1.6413
	once a month	.91256	.47916	.317	-.4008	2.2259
	every 2-3 months	.49861	.49462	.852	-.8571	1.8543

*. The mean difference is significant at the 0.05 level.

Source: Own Survey, 2018

The result of the Post-hoc test shown in table 24 indicates that commuters travelling daily show different levels of satisfaction, which is significant with commuters travelling once a month. In contrast, commuters travelling once a month show different satisfaction levels, which is significant with

commuters travelling daily and weekly.

Conclusion

Customer satisfaction with public transport at Wolaita Sodo bus terminal is a dependent variable, and factors viz., Fare System, Accessibility, Services

Provided, Transport Comfort, Scheduled Timings, Availability Facilities, and Terminal Environment as the independent variable.

Commuters availing the public transport from Wolaita bus terminal consist of both sexes with the majority of males at 64.9%, consists of all age groups with a majority of 21-30 years, consists of different religions with the majority of Christians at 69.6%, consists of all types of marital status with the majority of married people with 61.6%, consists of all levels of income earners with the majority of between 1001-2500, i.e. 34.5%, a mix of all commuters who are travelling at different intervals of time with the majority at once a month, i.e. 35.8%.

The ranking of the independent variables based on the mean shows that the mean score is the highest for Accessibility. Accessibility is the most important factor, followed by Services Provided, Scheduled Timings, Fare System, Terminal Environment, and Transport Comfort. The least mean is for the availability of facilities at 2.0740, which indicates that it is the least important factor

Customer satisfaction with public transport is positively related to the predictor variable services provided with a Pearson correlation coefficient of $r=0.644$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and services provided.

Customer satisfaction with public transport is positively related to the predictor variable accessibility with a Pearson correlation coefficient of $r=0.480$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a moderately significant relationship between customer satisfaction and accessibility.

Customer satisfaction with public transport is positively related to the predictor variable availability of facilities with a Pearson correlation coefficient of $r=0.587$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and the availability of facilities.

Customer satisfaction with public transport is positively related to the predictor variable scheduled timings with a Pearson correlation coefficient of $r=0.644$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and scheduled timings.

Customer satisfaction with public transport is positively related to the predictor variable terminal environment with a Pearson correlation coefficient of $r=0.687$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and terminal environment.

Customer satisfaction with public transport is positively related to the predictor variable transport comfort with a Pearson correlation coefficient of $r=0.701$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and transport comfort.

Customer satisfaction with public transport is positively related to the predictor variable fare system with a Pearson correlation coefficient of $r=0.694$ and Sig. (2-tailed) is 0.000, which is <0.05 , so there is a strong significant relationship between customer satisfaction and the fare system.

The result of this multiple regression analysis takes into consideration Customer satisfaction with public transport as the dependent variable and the seven independent variables, namely Fare System, Accessibility, Services Provided, Transport Comfort, Scheduled Timings, Availability of Facilities, Terminal Environment, R , shows the value of the multiple correlation coefficients between the dependent and the independent variables ($R = .814$) which represents strong correlation. The Coefficient of determination or correlation coefficient (R^2) is the proportion of variation in the dependent variable explained by the seven independent variables. So 66.2% of the variation in Customer satisfaction with public transport can be explained by seven independent factors in the model. Thus it can be concluded that the independent factors share 66.2% of the influence on Customer satisfaction with public transport at the Wolaita Sodo bus terminal. This means that this study can not explain 33.8% of the influencing factors of Customer satisfaction with public transport.

The adjusted Coefficient of determination or correlation coefficient squared is 0.656. 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. The adjusted R^2 gives some idea about how well our model generalizes;

ideally, its value becomes the same or very close to the value of R^2 . The difference for the model is small ($0.662-0.656= 0.006$), which is 0.06%. This shrinkage means that if the model were derived from the population rather than a sample, it would account for approximately 0.06% less variance in the outcome. Therefore, the researcher concludes that this regression model has significantly predicted the influencing factors of customer satisfaction with public transport.

Durbin Watson, which is done to check the independence of errors, tests the serial correlation between errors. Durbin-Watson was 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 2, there is evidence of a 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 1.613, which is under the acceptable limit (1-3).

ANOVA 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 that the value of F statistics 105.583 at 7 and 377 degrees of freedom is statistically significant at 95% confidence, which means that model is statistically significant. This sign also shows that the model is significantly better at predicting the outcome and unlikely to happen by chance. The model significantly improves the ability to predict the outcome variable.

The p-value is less than 0.05 for these four variables, whereas accessibility, availability of facilities and terminal environment show insignificant effects. Hence, it indicates that the four independent variables, namely services provided, scheduled timings, transport comfort, and fare system, are significant in predicting customer satisfaction (dependent variable), and accessibility, availability of facilities and terminal environment are not significant. The significance of the B value shows that B is different from 0 for these three significant variables. Services provided $\beta_1= .237$, scheduled timings $\beta_4= .141$, transport comfort $\beta_6=$

$.304$, fare system $\beta_7= .310$ are statistically significant variables that can predict the effect on customer satisfaction because of using public transport. Whereas accessibility $\beta_2= .005$, availability of facilities $\beta_3= -.029$ and terminal environment $\beta_5 = .090$ as customer satisfaction with public transport factors does not have a statistically significant impact since its p-value is greater than 0.05.

After analyzing the t value, we can see that the Fare system has the highest impact on customer satisfaction ($t = 7.584$), followed by transport comfort ($t = 5.806$), followed by services provided ($t = 4.863$), followed by scheduled timings ($t = 2.871$). The output of the multi-collinearity test shows that independent variables have no multi-collinearity as all VIF values are below 2.5 and Tolerance values are near .5.

Four of the seven hypotheses tested are accepted, and three are rejected.

The analysis of variance of customer satisfaction based on gender P value is 0.194, which is $>.05$, based on Age P value is 0.11, which is $>.05$, based on marital status P value is 0.338 which is $>.05$ states that there is a statistically insignificant difference of customer satisfaction whereas based on Religion P value is 0.000 which is $<.05$, based on level of the income P value is 0.013 which is $<.05$ based on travelling frequency P value is 0.000 which is $<.05$ there is a statistically significant difference of customer satisfaction.

Recommendations

Based on the findings, summary and conclusions of the study, the following recommendations are forwarded to improve the services and meet the requirements and expectations of customers from public transport services in Ethiopia.

A flexible and affordable fare rate system should be encouraged and implemented for all routes at different distances to make the service more affordable, satisfy customers' requirements, and be competent and profitable for the enterprise. It could also be better to collect fares (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 accessible and convenient.

To make the transport more comfortable the buses must be constantly maintained neat, clean and in proper good condition. The bus seating arrangement should be comfortable, and special facilities should be given for people with disabilities, elders, pregnant women, children, sick people and students. The buses should be maintained by having enough windows placed with glasses for proper ventilation for the passengers

To make the service more reliable and convenient by plying on time, increasing the frequency of the services and reducing waiting time and overcrowding, increasing the number of buses is indispensable.

Experienced and competent drivers should run the buses to have a safe journey and avoid accidents. The bus should always run at a safe speed and carry the passengers as per the specified capacity. Personnel in the bus station should be friendly, courteous and willing to help the passengers, provide prompt services, and explain the delays of the buses.

Acknowledgements

The author would like to acknowledge that Wolaita Sodo University has provided admission to the Master of Business Administration. In addition, the author has expressed thanks to Transport local authorities, data collectors and supervisors who were involved and special thanks to the pedestrians at the bus stop and the passengers who travelled in the vehicles in Wolaita Sodo Town.

Ethical Approval

The Department Graduate Council of the Department of Business Management, Wolaita Sodo University, has approved pursuing the research.

Conflict of Interests

The authors have declared that they have no conflict of interest

Funding

Wolaita Sodo University has financially supported the candidate during the Master's Program.

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