Collage of Business and Economics

Department of Management (MSc Program)

DETERMINANTS OF LONG-DISTANCE PUBLIC TRANSPORT PERFORMANCE IN ETHIOPIA: IN A CASE OF KALITY AND ZENEBEWORK BUS STATION

By

Mahammedsani Shafi Kadi, ID≠ GSR/9775/15

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF BUSINESS AND ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN MANAGEMENT (TRANSPORT MANAGEMENT)

Advisor: Dejene Tulu (PhD)

June, 2025

Addis Ababa Ethiopia

DECLARATION

Declaration I declare that this work has not been previously submitted and approved for the award of degree by this or any other university. I, Mahammedsani Shafi have carried out MSc thesis on **—The Determinants of long distance public transport performance, in a case of Kality and Zenebework bus station‖** independently in partial fulfillment of the requirement of degree of science MSc in Transport Management. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in thesis itself.

Name: Mahammedsani Shafi

Signature 

Date: June, 2025

ADVISORS' APPROVAL SHEET

This is to certify that the thesis entitled **"The Determinants of long-distance public transport performance in Ethiopia in a case of Kality and Zenebework bus station"** submitted in partial fulfillment of the requirements for the degree of master's with specialization in Transport management. The graduate program of department and has been carried out by Mahammedsani Shafi, ID GSR/9775/15 under our supervision. Therefore, we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Name of Major Advisor. Dejene Tulu (PhD)

Signature  Date: June, 2025

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

GRADUATE STUDIES

As mentioned on the Board of Examiners of the MSc thesis defense examined. We certified that we have read and evaluated the thesis prepared by Mahammedsani Shafi and examined the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirements for the master's degree of Science inTransport Management (MSc Regular Program)

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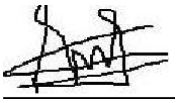
Baymot Tadesse (PhD)  Date: June, 2025

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Habtamu Endris (PhD)

Digitally signed by Habtamu Endris (PhD)
DN: cn=Habtamu Endris (PhD) gn=Habtamu Endris (PhD) c=ET Ethiopia l=ET Ethiopia o=Addis Ababa University ou=Management e=habtamu.endris@aau.edu.et
Reason: I am approving this document
Location:
Date: 2025-07-23 15:25+03:00

Habtamu Endris (PhD) _____ Date: June, 2025

Advisor Signature Date  Date: June, 2025

ACKNOWLEDGEMENTS

The completion of this research paper would not have been possible without the support and contribution of various individuals and organizations. Would like to express my gratitude to the passengers and drivers at Kality and Zenebework.

I would like to express my gratitude to the passengers and drivers at Kality and Zenebework bus stations who participated in the surveys and interviews, sharing their valuable insights and experiences. Their willingness to provide feedback has been instrumental in understanding the challenges within the public transport system.

Special thanks to my advisors Dr. Dejene Tulu who provided full guidance throughout the research process and Addis Ababa university FBE College department of management Graduate Program coordinator Dr Zelalam G. Tsedik for his help during my research. Their expertise in transportation studies and data analysis has been invaluable in shaping the findings and recommendations presented in this paper.

Abstract; the main purpose of this study is to investigate the determinants of long distance public transport performance in Ethiopia specifically at Kality and Zenebework bus station. Long distance public transport plays crucial role in enhancing mobility, promoting regional integration and supporting economic development, (World Bank, 2020; Littman, 2013).It also important in facilitating economic activities, and promoting inclusive developments in Ethiopia. This study aims to contribute to the development of more efficient reliable and inclusive public transport system that meets the need of all citizens. The study examines the determinants affecting the performance of long distance public transport with specific focus on Kality and Zenebework bus stations in Addis Ababa. These two stations serve as major intercity transport hub linking the capital to regional towns with vast destinations across the country. To determine the explanatory or independent variables and dependent variable literature review conducted on related topic to public transport performance. The research utilizes quantitative method approach and structured questionnaires used to collect the data from 385 respondents at both bus stations. The study framework evaluates performance of long distance public transport across multiple dimensions to identify the determinants affecting transport performance, including Service Quality, Infrastructure Quality, Safety and security measures, Cost Effectiveness and socioeconomic factors. The finding of the study indicate that Service Quality, Infrastructure Quality, and Cost Effectiveness significantly affecting the performance of long distance public transport at both bus stations. The result also highlighted that, Service quality remains a major concern of long-distance bus transport services. The finding also have significant implications for policymakers transport operators providing actionable recommendations for improving public transport services in Ethiopia by addressing the identified determinants. The research concludes that enhancing the performance of long-distance public transport requires a multi-pronged strategy: investing and improving infrastructure and passenger handling and designing of efficient, safe, and sustainable long-distance public transport systems in Ethiopia.

Keywords: Long-distance public transport, determinants, public transport performance,

TABLE OFCONTENTS

LIST OF TABLE

LIST OF FIGURE

CHAPTER ONE

1. INTRODUCTION

Long distance public transport refers to transportation service that operates over significant distance typically connecting cities or regions that are not in close proximity. According to International association of public transport (UITP), in Ethiopia long distance bus service are particularly vital to the country's diverse geography and the need for connectivity between cities, urban and rural areas.

Long distance public transport performance is also the measurement of various service quality customer satisfaction matrices that assess the effectiveness and efficiency of LDTP system. (Zhu et al.2015). Consequently, the determinants of long-distance public transport performance are the various factors and conditions that influence the efficiency, effectiveness, and overall quality of public transport services over extended distances. These determinants encompass wide range of elements including but not limited to service quality, cost- effectiveness, infrastructure quality, socioeconomic factors and safety and security etc. These factor shape the performance of long distance public transport system and significantly impact passenger satisfaction, usage rate, and the sustainability of transport service.(Littman, 2013; Lucas, 2012; Venkatesh et al. 2003). The determinants of long distance public transport performance should identify, properly studied and corrective measures have to be taken at a bus station to improve the overall performances of public transport.

Public transport is vital components of urban and rural mobility in Ethiopia serving as primary means of transportation for millions of citizens. Despite the importance of public transport, the sector faces numerous challenges that hinder its overall performance. An issue, such as inadequate infrastructure, poor service quality and regulatory inefficiencies have been widely documented. (Alemayehu & Kedir, 2020). These challenges not only affect the operational efficiency of transport services but also impact passenger satisfaction and safety. For instance,

passengers often experience delays, overcrowding and safety concern, which can deter them from using public transport as reliable option. (Mekonnen, 2021).

1.1. Background of the study

The public transport system in Ethiopia has undergone significant changes over the past long years, and shaped by historical, social, and economic factors. Despite a long history of transport development, the country faces numerous challenges, particularly in the context of rapid urbanization and population growth. Research conducted by the World Bank indicates that urbanization has led to an increased demand for efficient transport services, as more individuals migrate to urban areas in search of better economic opportunities (World Bank, 2018). Recognizing the importance of improving public transport to support economic growth and enhance the quality of life for citizens, the Ethiopian government has made substantial investments in infrastructure development, including road construction and modernization of bus stations. The National Transport Policy (2016) underscores the government's commitment to improving transport services and promoting sustainable urban mobility.

On the other hand, numerous theoretical frameworks such as economic, social, environmental, and other aspects have an impact on the performance of long-distance public transportation systems. The theoretical background that describes important ideas and frameworks pertinent to this field of study is covered in the following here.

One of the factor determining the effectiveness of public transportation performance is **service quality**. **Parasuraman, Zenithal, and Berry (1988)** created the SERVQUAL model, which identifies five aspects of service quality: tangibles, assurance, responsiveness, empathy, and reliability. These factors are used in the context of long-distance public transportation to assess how well the service fulfills the expectations of passengers. High service quality is linked to higher passenger satisfaction, loyalty, and usage rates, according to Parasuraman **(Parasuraman et al., 1988)**.

Socioeconomic theories; investigate the ways in which economic and demographic factors impacts transportation decisions. According to the "social exclusion" theory, people from lower socioeconomic backgrounds might have trouble using public transportation, which

would impair their mobility and general quality of life **(Lucas, 2012)**. Knowing the socioeconomic factors that influence transportation use makes it easier to spot inequalities in access and provide information for initiatives to increase inclusivity in long-distance public transportation. The effectiveness of the public transportation system is strongly impacted by the quality of the infrastructure. The significance of physical assets (such as roads and bus stations) in supporting effective transportation services emphasized by theories pertaining to infrastructure development. According to the "Infrastructure-Transport Nexus," properly maintained infrastructure improves overall performance by increasing service safety and reliability (Littman, 2013). Long-distance travel depends heavily on operational efficiency, which also influenced by infrastructure quality.

One essential component of public transportation performance is **cost-effectiveness**. A framework for assessing the financial sustainability of transportation services is provided by the economic theory of cost-benefit analysis, which contrasts the expenses of delivering transportation services (such as infrastructure investments and operating costs) with the advantages such as time savings and less traffic. Assessing the appeal of long-distance public transportation options requires an understanding of the cost structure and perceived value for money (Boardman et al., 2018). In public transportation, safety and security are of utmost importance. Passengers' evaluations of the safety of transportation services are highlighted by theories pertaining to risk perception and safety management. The "Safety Culture" framework highlights the significance of organizational safety practices and attitudes, which have a big impact on passenger satisfaction and confidence (Reason, 1997).Therefore, from the above theoretical explanations the most attractive points of the determinants that can influence long distance public transport Kaliti and Zenebework bus station that will mainly focused on the ***Service, Cost-effectiveness, Infrastructure quality, Safety and security, Socio-economic factors.***

Furthermore understanding the factors that influence performance of these bus stations is important to identify area for improvement and to enhance the overall quality of public transport services. By examining the service quality, infrastructural quality, the socioeconomic factors safety and security factors and cost effectiveness. This study seeks to provide actionable recommendations for policymakers and transport operators to improve service delivery and passenger satisfaction. So that, the determinants of long distance public transport performance has to be identified, properly studied and corrective measures have to be taken at a bus station to improve the overall performances of public transport.

Kality and Zenebework Bus Station are the major transport center located in Addis Ababa, Ethiopia, serving as critical point for long distance travel, and connecting passengers to the various parts of the country. This study aimed to investigate the determinants of long distance public transport performance in Ethiopia specifically at Kality and Zenebework bus station using descriptive method to identify and analyzing the determinants.

1.2. Statement of the problem

Long distance public transport plays crucial role in enhancing mobility, promoting regional integration and supporting economic development, (World Bank, 2020; Littman, 2013).Long distance public transport is very important for social, economic development, particularly vital to the country's diverse geography and the need for connectivity between cities, urban and rural areas. However, this sector has received limited attention from policymakers and academic researchers, (Girma et al., 2022; Alemayehu & Kedir, 2019). Consequently, there is noticeable lack of comprehensive empirical studies that examine the specific determinants influencing the performance of long distance public transport service particularly at major terminals of the country like Kality and Zenebework bus stations despite their importance in the national transport network (Bhatta, 2019; Hassan & Kafle, 2020). In Addis Ababa, there are about five bus stations/terminals serving the long distance public transport across the country, namely, Lamberet, Asko, Autobus Tera, Kality and Zenebework bus stations. There are a number of factors influencing long distance public transport performance that identified by different researchers. Studies have identified factors influencing public transport performance in Ethiopia, including infrastructure quality, safety and security, cost effectiveness, service reliability, socioeconomic dynamics, regulatory framework, (Alemayehu & Kedir, 2019; Girma et al., 2022). For instance, Alemayehu and Kedir (2019) emphasized that inadequate infrastructure can significantly affect travel times and road safety, while service reliability remain major determinant of public trust and transport patronage. Researchers named Mulugeta Girma and colleagues (2022) highlighted persistent challenges such as low customer satisfaction and poor operational efficiency in the Ethiopian public transport sector. Similarly, Kumar and Gupta (2020) argued that a holistic understanding of public transport performance must go beyond operational indicators to include socioeconomic factors such as income level, travel behavior, and user expectations**, which** critically shape user satisfaction and

ridership level. Vehicle condition, which is among the infrastructure quality aspects, is another pressing issue. A study concerning vehicle condition has shown that long distance buses are often old poorly maintained and prone to breakdowns, which disrupt service, compromise passenger safety (Kumar & Singh, 2018). Economic variables also play a significant role affecting public transport performance. Fare affordability, rising fuel prices can affect low-income travelers, (Mekonnen, 2021). Moreover, road condition leading to and from bus stations can directly impact travel times, passenger safety (World Bank, 2020).Another related previous literature finding stated that, the infrastructure quality remain significant concern as a number of roads and bus station poorly maintain which can lead to delays and safety hazards (Bhatta, 2019). A research done by Hassan & Kafle shows as that, Lack of proper maintenance and investment in infrastructure has resulted in deteriorating road conditions, which can increase travel times and contribute to vehicle breakdowns. Furthermore, the design of bus station fails, to accommodate the number of passengers leading to congestion (Hassan & Kafle, 2020).Kality and Zenebework bus station two key center for long distance public transport in Addis Ababa and they both facing infrastructural and operational challenges. Kality bus station also characterized by overcrowding, insufficient passenger facilities, and aging transport infrastructure (Bhatta, 2019). Similarly, Zenebework bus station also experience limited capacity, substandard road condition, traffic congestion (World Bank, 2020; Hassan & Kafle, 2020).Despite the above findings, most existing studies treat long distance public transport in generalized manner, they overlook the operational realities of specific bus stations. There is limited empirical evidence focusing on station specific determinants of performance such as Kality and Zenebework bus stations.

The gaps in existing literature necessitated for focused investigations into the key factors influencing the performance of long distance public transport services at Kality and Zenebework bus stations and comprehensive analysis that integrates infrastructural, socioeconomic and operational dimensions is essential to inform effective strategies for improving the efficiency and passenger satisfaction of Ethiopian long distance public transport system at specific area of Kality and Zenebework bus stations.

1.3. Research Objective

1.3.1. General Objective

The main objective of this study is to analyze the determinants of long distance public transport performance in Ethiopia specifically at Kality and Zenebework bus stations

1.3.2. Specific Objective

1. To analyze the impact of infrastructural quality on the performance of long distance public transport services at Kality and Zenebework bus stations
2. To evaluate the influence of socioeconomic factors on the performance of long distance public transport at Kality and Zenebework bus station
3. To investigate the role of safety measures in changing public transport performance at the mentioned bus stations
4. To examine the impact of public transport service quality on the performance of long distance public transport at Kality and Zenebework bus station
5. To examine the impact of cost-effectiveness on long distance public transport performance

1.4. Research question

1. What are the factors affecting the performance of long-distance public transport at Kality and Zenebework bus stations?

2. How do Punctuality of arrival and departure impact the performance of long-distance buses at these stations?

3. To what extent do infrastructure and station facilities contribute to long-distance bus performance?

1.5. Scope of the Study

- ✓ The study will cover two bus stations in Addis Ababa, specifically Kaliti and Zenebework. Stations and locations were chosen as they are some of the biggest long-distance public transport stations in the country, vast destinations, and high volume of passengers.
- ✓ The data will be set within the two stations' transport environment and their respective destinations.
- ✓ The study will investigate the existing level of long-distance public transport performance, with data being collected over a specified period in this year
- ✓ Several determinants of long-distance public transport performance, including but not limited to:
    - Infrastructure quality (e.g., road conditions, bus station facilities)
    - Service quality (e.g., punctuality, comfort, customer service)
    - Cost-effectiveness (e.g., ticket prices, operational costs)
    - Safety measures (e.g., accident rates, security)
    - Socio-economic factors (e.g., income levels, demographic profile of users)
- ✓ Analysis of travelers on long-distance public transport services at Zenebework and Kaliti bus stations and information from transport operators and major stakeholders (e.g., regulators, transport planners) may be included to present a complete view of factors that affect performance.

1.6. Limitations of the Study

While this research provides valuable insights into the determinants of long-distance public transport performance in Ethiopia, several limitations should be acknowledged:

Sample Size and Representation: Although the sample size of 385 respondents is statistically significant, it may not fully represent the diverse demographics of all passengers using long-distance bus services across Ethiopia. Future studies could benefit from a larger and more varied sample to capture a broader range of experiences.

Geographical Focus: The study is limited to Kaliti and Zenebework bus stations in Addis Ababa. While these locations are critical hubs, findings may not be generalizable to other

regions or bus stations in Ethiopia, which may face different challenges and operational contexts.

Temporal Constraints: The data collection period may not capture seasonal variations in travel behavior or service performance. Longitudinal studies could provide a more comprehensive understanding of trends over time.

1.7. Significance of the Study

This study aims to fill existing gaps regarding long-distance public transport performance in Ethiopia, specifically at Kaliti and Zenebework bus stations. By identifying and analyzing the determinants affecting performance. The research will contribute to a more understanding of the challenges and opportunities within the public transport sector especially at Kaliti and Zenebework bus station The findings of this study will provide valuable insights for policymakers and government officials involved in transportation planning and infrastructure development. By understanding the factors that influence public transport performance, Policymakers can make informed decisions to enhance service delivery, improve infrastructure, and implement effective regulations. The study will offer practical recommendations for transport operators and service providers to enhance the efficiency of long-distance public transport. By addressing the identified determinants, operators can improve passenger's satisfaction, and foster a more reliable transport system

1.8. Organization of the study

This study on the determinants of long-distance public transport performance in Ethiopia, specifically focusing on Kality and Zenebework bus stations, is organized into five main chapters:

Chapter One: Introduction

This chapter provides an overview of the research topic, including the background of the study, the statement of the problem, research objectives, limitations, and the significance of the study. It sets the context for understanding the importance of public transport performance in Ethiopia.

Chapter Two: Review of Related Literature

This chapter reviews existing literature on the key determinants of public transport performance, including service quality, infrastructural quality, cost-effectiveness, socio-economic factors, and safety and security measures. It synthesizes theoretical and empirical studies relevant to the research topic.

Chapter Three: Research Methodology

This chapter outlines the research design and approach, the area of study, data types and sources, population, sample size and sampling procedure, data collection methods, and methods of data analysis. It provides a detailed framework for how the research will be conducted.

Chapter Four: Results and Discussion

This chapter presents the findings of the research, including data presentation and analysis of independent variables. It discusses the demographic information of respondents, evaluates the determinants of public transport performance, and interprets the results in relation to the research objectives.

Chapter Five: Conclusion and Recommendations

This final chapter summarizes the key findings of the study, draws conclusions based on the results, and offers recommendations for improving long-distance public transport performance in Ethiopia. It also suggests areas for future research.

1.9. Definition of terms

Long-Distance Public Transport: Public transport services that span, long Distances Commonly between cities or areas, and to which the public is available.(Graham, 2007).

Public Transport Performance: A measure of the extent to which public transport Services are able to satisfy the needs of their users. (Hensher & Puckett, 2007).

Determinants: Factors or variables that explain or affect the performance of long-distance Public transport. (Bhat & Sardesai, 2006).

Infrastructure Quality: The physical buildings and facilities needed to provide public Transport services, for example, bus stops, roads, terminals, and workshops for maintenance. e (Littman, 2011).

Service Quality: Overall assessment of the service provided by public transport Operators, (Parasuraman et al., 1988).

Cost-Effectiveness: A measure of the economic value of public transport service Evaluating the degree to which benefit to users exceeds costs incurred. (Meyer & Miller, 2001).

Punctuality: The degree to which public transport services adhere to scheduled departure, Arrival times (Cohen & Hsu, 2010).

Safety: It refers to practices and procedures that aim to guarantee passengers and staff are Safe from accidents, injuries, and other hazards while in transit. (Wang et al., 2015).

Kaliti Bus Station: A specific bus station in Addis Ababa, Ethiopia, and one of the biggest terminals for long-distance public transport. (Ethiopian Roads Authority, 2018).

Zenebework Bus Station: One of the significant bus stations in Addis Ababa, Ethiopia, with long-distance transport services. (Ethiopian Roads Authority, 2018).

User Satisfaction: The level of satisfaction experienced By public transport riders with regard to operators' services. (Kumar & Prakash, 2016).

Socio-Economic Factors: The social and economic conditions influencing individuals' Access to and use of public transport. (Gonzalez & Rojas, 2015).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Long distance public transport is critical to support socioeconomic connectivity and mobility in the country. However, its effectiveness and efficiency depend on different determinants like, infrastructure quality, operational efficiency, passenger satisfaction and regulatory frameworks, this literature review synthesis's existing research on the determinants of long distance public transport performance in the context of Ethiopia in the case of Kality and Zenebework bus stations. The review is organized into two main sections: the Concepts, & theoretical literature reviews, and empirical literature related to the determinants of public transport performance.

2.1. Conceptual Theoretical Literature Review

This review of literature focused on the concept and theoretical literature's that written on the determinants of long distance public transport performance such as service quality, infrastructure quality, socioeconomic factors, cost effectiveness and safety and security measures specifically examining the case of Kality and Zenebework bus station.

The first point of the review is the role of service quality as a determinant of the performance of long-distance public transport. Service quality encompasses several dimensions that play a significant role in influencing user satisfaction and ridership volumes. Of those dimensions, reliability is highlighted as the overarching factor as regularity in the delivery of service, including conformance to schedule and service predictability Kearney et al. (2019**)**

Service Quality; are critical determinants of public transport performance encompassing different dimensions that directly affect user satisfactions and ridership. Reliability is the consistency of service delivery, including adherence to schedule and predictability service

Research by Kearney et al. (2019) indicates that passengers prioritize reliable service as delay can lead to decrease, trust and satisfaction. In the context of kality and Zenebework bus station ensuring timely departures and arrivals is essential for maintaining user confidence

Comfort; the comfort of passenger during their journey is vital in enhancing user experience (Bhat and Sardesai (2006).found that Factors such as seating arrangement , cleanliness and overall vehicle conditions significantly influence passengers choice (Bhat and Sardesai (2006). Comfortable travel experiences can lead to increase, ridership customer loyalty.

Safety is paramount concerns for passenger s using public transport Graham and Marvin (2001) highlight that perceived safety including the presence of security personnel and well-enhanced vehicles can significantly impacts user decisions. Addressing safety concern is crucial for attracting and retaining passengers at kality and zenebework bus station

Infrastructure quality; Road condition used by long distance buses is critical for efficient service delivery, Meyer and miller(2001) emphasize that well maintained roads reduce travel times and enhance safety. Poor road condition can lead to delays and increased operation cost, negatively impact service reliability. Bus station facilities; the availability and condition of facilities at bus station s such as waiting area restroom, and information center, significantly affect passengers experience .Girma et al. (2022) found that inadequate facilities at kality and zenebework bus station negatively influenced passenger satisfaction. Improving infrastructure can enhance the overall travel experience and encourage greater use of public transport.

Economic Factors; significantly influence public transport performance, affecting both operational viability and user accessibility, fare structure. The pricing of ticket is crucial determinants of accessibility for different socioeconomic groups. Mekonnen (2021) found that affordable fare system could enhance ridership particularly among low income. Population and high fare can limit access and discourage use. Operational costs; fluctuations in operational cost including fuel prices and maintenance expense can affect service viability. Girma et al. (2022) found that rising fuel prices can lead to increased operational cost necessitating fare

hikes ta may further affect ridership. Addressing operational cost challenges is crucial for maintaining service quality.

Regulatory Environment; governing public transport operations.it is essential for ensuring service quality and safety. Government policies can enhance public transport performance by promoting investment in infrastructure and services .Alemayehu and kadir (2019) argue that policy encouraging public transport use such as subsidies or tax incentives for operators and can lead to improved services.

Technological integration; the integration of technology into public transport system can significantly enhance the transport performance. Real time information system. Technologies that provide passengers with real time updates on bus arrival and departure improve reliability and use satisfactions. Kumar and Singh (2020) found that real time tracking can reduce anxiety associated with waiting for transport and thereby enhancing the overall travel experience. Automated ticketing system; the system that streamline the ticket purchasing process such as mobile ticketing, and contact less payment options can reduce waiting time and improve operational efficiency. (Mekonnen, 2021).The Theory of Transportation provides foundation of understanding of how transport system operate and the factors that influence their performance. The four step model of travel demand forecasting is the key framework that encompass, trip generation trip distribution, mode choice and route assignment (Meyer & Miller, 2001). This model helps to understand the demand for long distance public transport service and the factors influencing travel behavior.. Service Quality is critical determinants of public transport performance and several model have been developed to asses it. The SERVQUAL model identifies five dimensions of service quality, Reliability, responsiveness, assurance, empathy and tangibles (Parasuraman et al., 1988). This model can be applied to evaluate the quality of service provided at Kality and Zenebework bus station. Economic Theory play crucial role in understanding the determinants of public transport performance regarding fare structure and operational cost. The concept of demand elasticity is vital as it examine how changes in fare prices affect ridership level.(Mekonnen, 2021).Understand this relationship can help transport operators set competitive fares that maximize usage while ensuring financial sustainability.

2.2. Empirical Literature Review

Service Quality; is critical determinants of public transport performance. A research by Kearney et al. (2019) in Addis Ababa indicates that comfort and safety significantly influence user satisfaction and ridership. Passengers prioritize punctuality and consistency, with delay leading to decreased trust in public transport service. Bhat and Sardesai (2006) found that comfort including seating arrangement and cleanliness; is essential for attracting and retaining passengers.

Safety concern including crime and accidents can deter potential user from utilizing public transport Graham & Marvin, 2001). Infrastructure Quality; plays vital role in performance of public transport system. Meyer and Miller (2001) Emphasized on well-maintained rod and bus Stations are essential for more efficient service delivery. Poor road condition can lead to delay and increase operational cost negatively impacting service reliability. A study by Girma et al. (2022) by Girma focused on the facility available at Kality and Zenebework bus station reveal that inadequate waiting area, lack of information center and poor sanitation facility negatively impacted passenger satisfaction. Another point concerning related to public transport performance empirical literature is the operational Efficiency, which is critical determinants of public transport performance. . Cervero (2001) found that higher service frequency is associated with increased ridership In the context of Addis Ababa, Kearney et al. (2019) reported that passenger preferred service with frequent departures as it reduce waiting time, and improved accessibility. A research done (Bhat &Sardesai, 2006). Show that Efficiency management is essential to prevent overcrowding which can lead to discomfort and dissatisfaction among passengers.

The Economic factor is also significantly influence public transport performance. Mekonnen (2021) made survey on fare structure in Ethiopian public transport and found that affordability is crucial determinants of ridership. High fares can limit access for low income population while affordable fare system enhance ridership. Girma et al. (2022 also noted that fare affordability is significant factor in determining public transport usage in Addis Ababa. Additionally fluctuation in operational cost, such as fuel price can impact service viability, (Girma et al., 2022). The socio Demographic factors are a characteristic of passengers is essential for tailoring service to meet their need. Cervero (2001) focused on the area with higher population density have greater demand for public transport services A research by Girma et al. (2022) analyzed that the impact of user demographics on public transport usage in

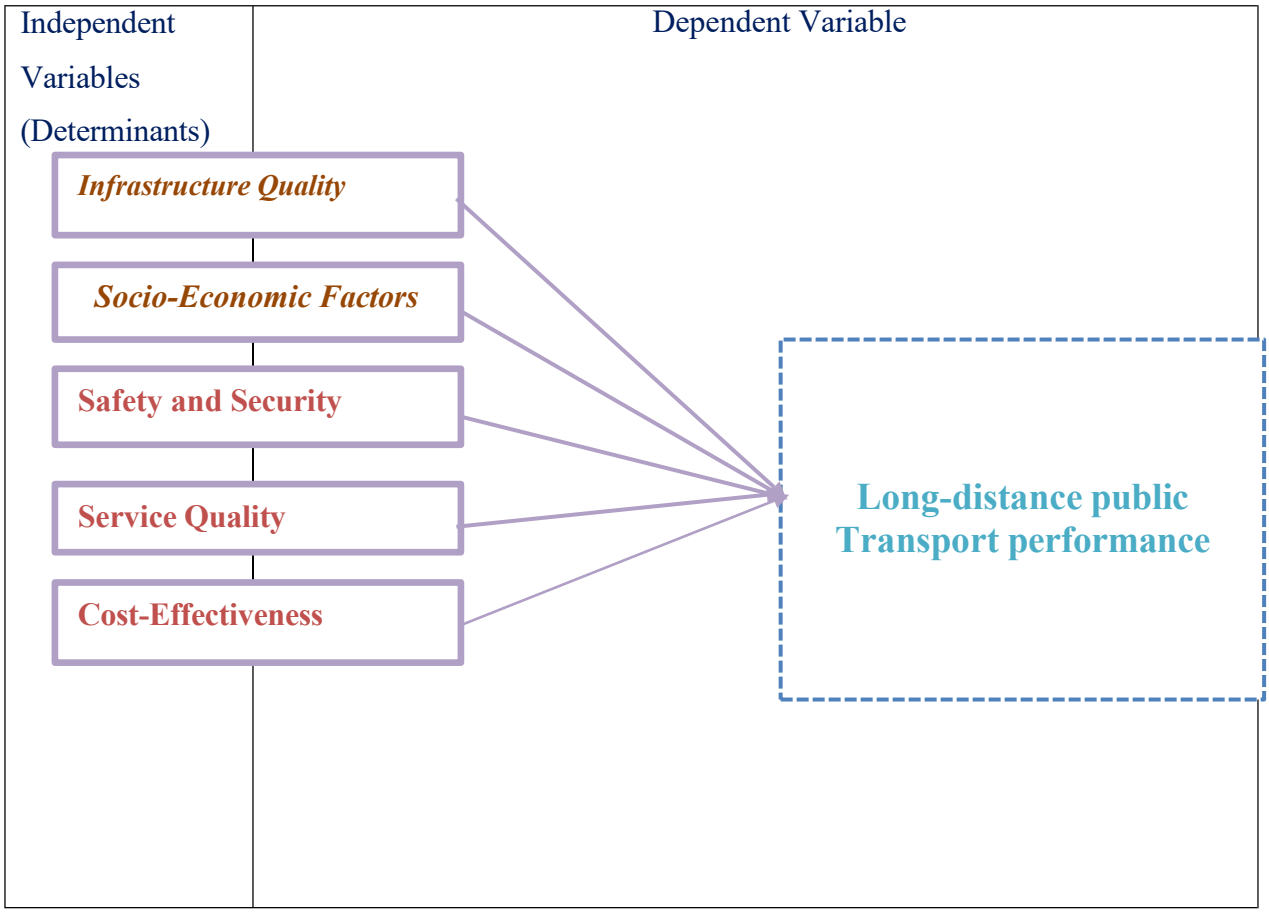
Ethiopia revealing that factors such as age, income and travel pattern influence how different groups utilize public transport.

Socio-Demographic Factors; Understanding the socio-demographic characteristics of passengers is essential for tailoring services to meet their needs. Cervero (2001) emphasizes that areas with higher population density typically have greater demand for public transport services. Research by Girma et al. (2022) analyzed the impact of user demographics on public transport usage in Ethiopia, revealing that factors such as age, income, and travel patterns influence how different groups utilize public transport.

2.3. Conceptual Frameworks;

the performance of long-distance public transport at the Zenebework and Kaliti bus stations can be measured through several dimensions. The dimensions are underpinned by a set of determinants including; **Service Quality**: Overall experience of the passengers, comfort, cleanliness, and customer service,(Parasuraman et al., 1988). **Infrastructure Quality**: Condition and accessibility of transportation infrastructure, which have direct effects on the efficiency of operations and safety (Bertini & El-Geneidy, 2004).**Socio-Economic Factors**: The demographic and economic structure of the passenger base, which influences airport demand and service planning (Meyer & Miller, 2001). **Safety and security**: The security measures that protect passengers during travel, influencing public trust and levels of Ridership, (Wang et al., 2016). **Cost-Effectiveness:** The balance between the extent of costs incurred by the service provider and the fare paid by riders, influencing accessibility and ridership (Littman, 2017)

Figure 1 Conceptual framework



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CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research design

This study adopted the descriptive statistics research design to provide a comprehensive overview of the determinants affecting long-distance public transport performance. This design selected because it is helpful for identifying and describing the characteristics of the public

transport system as well as understanding the relationships between various determinants at Kaliti and Zenebework bus stations.

3.2. Research approach

A Quantitative approach was utilized for this study. This approach is used because it allows for a more comprehensive understanding of the research problem by integrating numerical data with in-depth insights from participants.

3.3. Area of the study

This research focused on two major bus stations in Addis Ababa, Ethiopia: Namely Kaliti and Zenebework. These stations are selected because they are the main long distance public transport hub serving a large number of passengers traveling to various destinations across the country.

3.4. Data type and sources

The data used in this study is cross-sectional data type. In cross-sectional surveys, independent and dependent variables are measured at the same point in time using a single questionnaire (Anol, 2012).

Primary data: The primary data are collected directly from respondents through surveys, and interviews at both Kality and Zenebework bus station

Secondary data: Relevant literature, reports, and documents related to public transport performance in Ethiopia are reviewed to provide context and support the findings.

3.5. Population

The target population for this study includes Passengers using long-distance buses at Kaliti and Zenebework bus stations. Bus operators and staff working at these stations. Transport authorities and policymakers involved in public transport planning and management in Addis Ababa**.** Transport Operators and Staff**:** Employees working at the bus stations, including drivers, administrative staff, and ticketers. Their insights will provide valuable information

about operational challenges, service quality, and the overall performance of the transport system.

3.6. Sample Size and Sampling Procedure/Technique

3.6.1. Sample Size

Information gathered from both Kality and Zenebework bus stations authorities shows that on average around 5000 passengers are using the stations daily. But the number of travelers fluctuates or it shows increase and decrease over time. So that, on average, the total population can be 5000 passengers daily at Kality and Zenebework bus station. The next procedure used to determine the needed sample size from total population of the passenger at Kality and Zenebework bus station.

- Total area population identification; the population of interest is the users of long-distance public transport services at Kaliti and Zenebework bus stations
- Setting sample frame; the sample frame from both bus station authorities information on average 5000 passengers are using both station daily. But this number is not fixed and it shows high rate of fluctuations
- Determination for sample size; since the total population is not fixed. the following formula/Cochran's Formula for Proportions is used to determine the sample size:

  n =(Z^2*p*(1-p))/E^2

  Where:

  n=sample size,

  Z=Z-score(1.96for 95%confidence interval

  P= estimated proportion of passengers who use long distance public transport services (0.5for maximum variables)

  E = margin of error (0.05)

  Then; n = (3.8416)*(0.25)/(0.0025) =384.16. However, Sample size of population must be a whole number approximately 385. So, the sample sizes 193 and192 passengers at each Kaliti and Zenebework bus station respectively were targeted for the quantitative survey and totally 385 travelers from both stations while 42 participants

from each bus stations were selected for qualitative interviews. And from both bus stations the total sample size is 385 passengers

3.6.2. Sampling technique

For Quantitative survey: For this survey, a convenience sampling technique is employed to find any informants among the passenger using these two bus stations based on their knowledge and experience in the public transport services.

3.7. Data Collection Method/ Instruments

To collect data from passengers at Kaliti and Zenebework bus stations Structured/standardized questionnaires were developed using related academic journals and previously written literatures **(**Kumar, R. (2014), Cochran, W. G. (1977), Fowler, F. J. (2014), from online platforms, Cochran, (1977),Bryman, A. (2016) etc. The questionnaire were Likert scale questions related to service quality, Infrastructural Quality, cost-effectiveness, safety, and socio-economic factors. The Surveys administered at the bus stations in person and through other agents depending on accessibility and participant preferences.

3.8. Method of Data Analysis

Quantitative Data Analysis: Statistical analysis is conducted using SPSS software Descriptive statistics (e.g. Frequency, mean, standard deviation) were used to summarize the data, while inferential statistics (e.g., regression analysis, correlation) is employed to examine relationships between variables.

3.9. Model Specification

The mathematical equation
$Y = a + \beta x$
Where
Y=dependent variable
a = intercept

B =slope (coefficient of independent variable x

The multiple linear regression equation for public transport performance is;

$$(LD\ PTP) = a + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4 + \beta 5\ X5 + \beta 6\ X6 + \beta 7\ X7 + \varepsilon$$

Where

(LDPTP) = Long-Distance Public Transport Performance (dependent variable)

X1 = Demographic Factors
X2 = Travel Behavior
X3 = Service Quality
X4 = Socio-Economic Factors
X5 = Infrastructure Quality Factors
X6 = Safety and Security
X7 = Cost-Effectiveness
(ε) = Error term (captures the variability in public transport performance not explained by the independent variables)

3.9. Reliability Test;

Reliability Test for Public Transport Performance

To assess the reliability of a questionnaire measuring for Long-Distance Public Transport Performance in Ethiopia; In a case of Kality and Zenebework bus stations; the reliability of a questionnaire measuring public transport performance based on the determinants identified. A questionnaire that includes items related to different dimensions of public transport performance developed and filled by passengers for sample reliability test..

- ✓ The instrument used for data collection questionnaires was used to perform the study. Passengers received hard copy surveys questionnaires all in person.
  To prevent the non-return rate, respondents are supported to fill the questionnaires on the spot. 385 out of the 385 questionnaires that were given to the respondents were collected. This represent 100% rate overall. No in correctly filled, no non- returned questionnaire because of the system used during data collection.

To make Reliability using Cranach's Alpha was employed to assess the internal consistency in the data gathering method. Cranach is Alpha, according to George and Mallery (2003), is a measure of the internal consistent the measurements.

A high consistency is indicated by a higher coefficient; >0.9 refers to Excellent; >0.8 to Good; >0.7 to Acceptable; >0.6 to Questionable; >0.5 to Poor; and <0.5 to Unacceptable. Thus, as the reliability test result indicates in the table below.

Table of Reliability test result

Variable	N of items	**Cranach's Alpha**
Service Quality	7	.791
Infrastructure Quality	4	.763
Socio-Economic Factors	6	.704
Cost-Effectiveness	6	.712
Safety and Security Measures	5	.701

Source: survey data, June 2025

The reliability test shows consistency of the items since it is in acceptable range and it is acceptable

3.10. Model Significance and Model the Goodness of Fit.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.825[a]	.681	.676	.17022	2.473

a. Predictors: (Constant), Safety and Security Factors, Socioeconomic Factors, Infrastructure Quality, Cost-Effectiveness, Service Quality

b. Dependent Variable: Transport performance

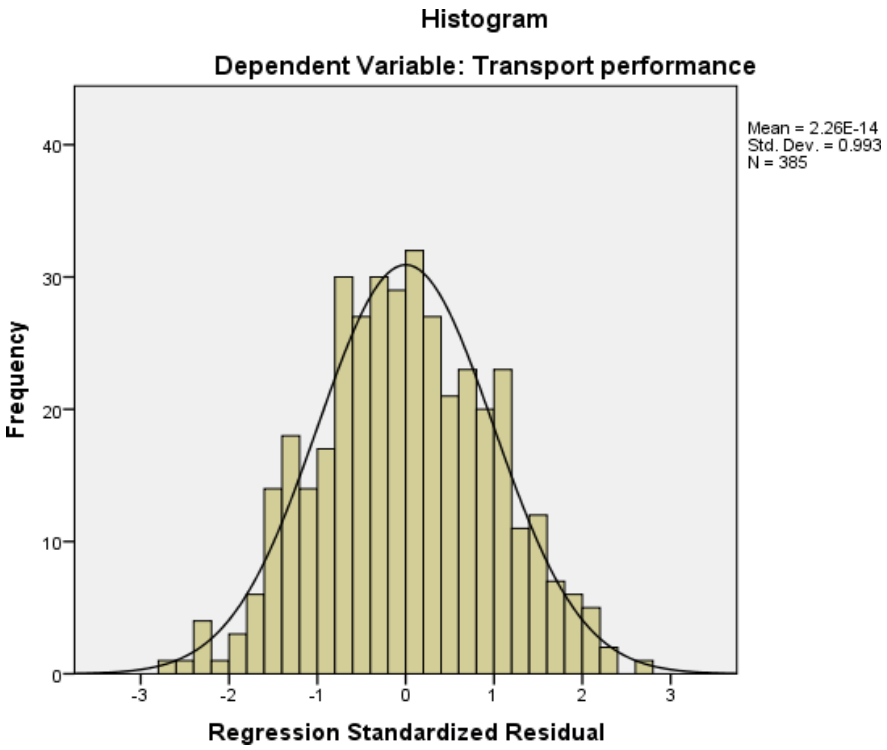
The regression model With an R2 of 0.681, as a whole was statistically significant ($F = 161.462$, $p < 0.001$). This indicates that the variables included account for 68.1% of the variation in public transportation performance which means indicate the model is also statistically fit.

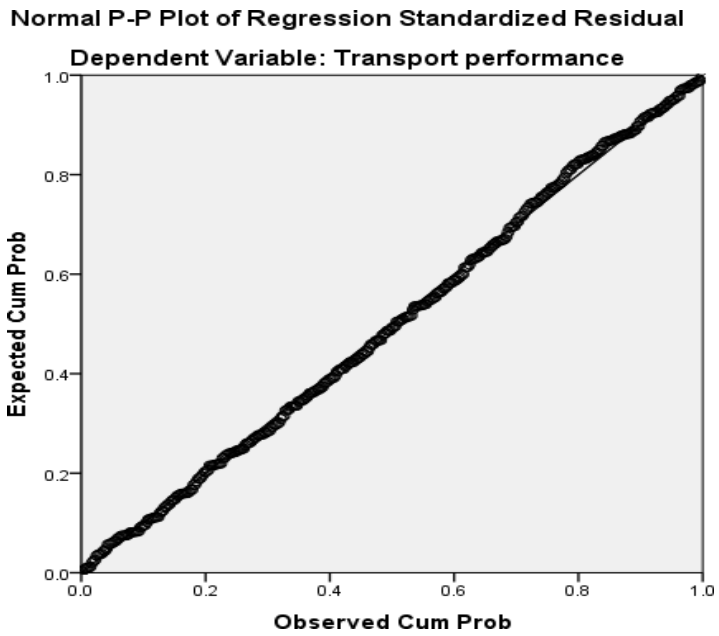
Model's Robustness, The model's predictive ability is robust, as indicated by the adjusted R2 (0.676), which also points to a low shrinkage.

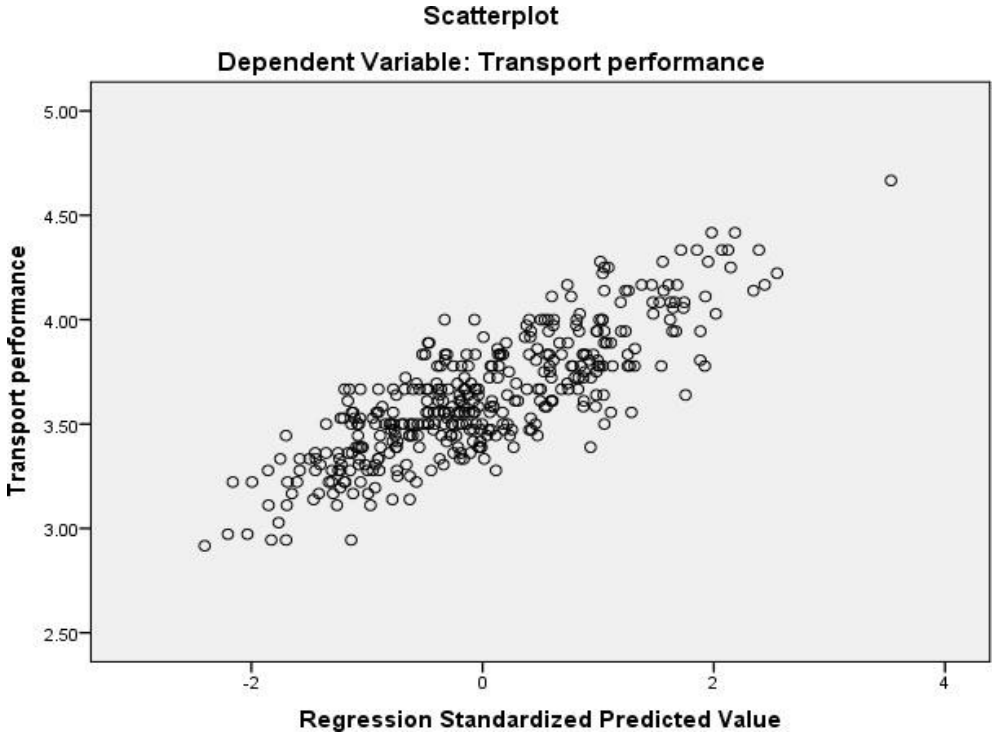
Autocorrelation; The model's dependability is guaranteed by the **Durbin-Watson statist**ic;from the model summary (2.473), which verifies that the residuals do not exhibit autocorrelation.

3.11. Test for assumption

Normality of the data




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Transport performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Transport performance
Transport performance
Regression Standardized Predicted Value
5.00
4.50
4.00
3.50
3.00
2.50
-2
0
2
4

Test for Multicollinearity

Coefficients

Table 1 Coefficients

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.442	.169		2.619	.009	.110	.773		
	Service Quality	1.027	.038	.908	26.679	.000	.951	1.103	.728	1.375
	Infrastructure Quality	.056	.022	.075	2.554	.011	.013	.098	.978	1.022
	Cost-Effectiveness	-.187	.025	-.256	-7.547	.000	-.236	-.138	.731	1.367
	Socio-Economic Factors	-.006	.016	-.011	-.374	.709	-.038	.026	.989	1.011
	Safety and Security Factors	-.015	.021	-.021	-.704	.482	-.057	.027	.981	1.020

a. Dependent Variable: Transport performance

In the coefficient, table the variance inflation shows 1 the highest value of VIF is 1.375 and all the variables are below 10. We can conclude that Multicollinearity is fine.

CHAPTER FOUR

RESULT AND DISCUSSION

This section presents the general characteristics of collected data, the analysis, interpretation the findings from the research on the determinants of long-distance public transport performance in Ethiopia, specifically focusing on Kality and Zenebework bus stations. The findings are categorized according to the determinants identified in the study: service quality, infrastructure quality, socio-economic factors, cost-effectiveness and safety and security factors. Each determinant is discussed in detail, highlighting its impact on public transport performance and passenger satisfaction.

4.1. Data Presentation

This part deals with presentation of the data used for research, analysis and interpretation of data collected from 385 sampled respondents. The concerns of this part is demographic characteristic of the respondents, analysis of independent variables with respect to the long distance public transport performance which was analyzed by using frequencies, percentages and the factors that affect the performance of the public transport were analyzed by multiple linear regression model.

4.2. Respondent's data description/Demographic Information

Table 1 Gender

Station name	Male	Female	Total Data collected
Kality	130	63	193
Zenabework	125	67	192
Total population	255	130	385

4.2.1. Age category of the respondents.

Table 2 Respondent Age

Age Group	Frequency	Percent
20-30	171	44.42
31-40	200	51.95
41-50	14	3.63
51 and above	0	
Total	385	100.00

Regarding to the age of the respondents, 171 (44.42%) of them are in the range of 20-30 years, 200 (51.95%) are in the range of 31-40 years, 14 (3.63%) are in the range of 41-50 years as indicated in (Table 1.2). The result revealed that the majority of the passengers are 200 (51.95%) are in the range of 31-40 years.

4.2.2. The travel frequency of the respondents

Table 3Travel Frequency

	Frequency	Percent
Rarely	13	3.4
Sometimes	89	23.1
Often	161	41.8
always	122	31.7
Total	385	100.0

The above table showed the frequency of travelling with long distance public transport at Kality and Zenebework Bus Station. From the total respondents, 13 (3.4%) of the respondents are travelling rarely, 89 (23.1%) are travelling Sometimes, 161 (41.8%) are travelling Often, 122 (31.7%) are travelling always. From this response, it can be understood that Travelers using long distance public transport from Kality and Zenebework Bus Station is a mix of all commuters who are travelling at different intervals of time always using with high frequency (41.8 %).Most respondents reported using often the long-distance bus services indicating a significant reliance on public transport for travel. This frequency suggests that long-distance buses are a vital mode of transportation for many individuals, highlighting the importance of ensuring that these services meet passenger needs effectively.

4.3. Analysis of independent variables

The results presented in frequency and percentages of respondents the items that measured and rated on five point deferent Likert scale rating of the different aspects of services delivered by the selected bus stations.

4.3.1. Service Quality

Table 4Service Quality

Aspect of service	Poor		Poor		Good		Very Good		Excellent	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Cleanliness of Vehicles					203	52.7	128	33.2	54	14.0
Punctuality of Departures			10	2.6	186	48.3	152	39.5	37	9.6
Punctuality of Arrivals					191	49.6	160	41.6	34	8.8
Comfort of Seating			2	.5	218	56.6	123	31.9	41	10.6
Customer service			5	1.3	202	52.5	107	27.8	71	18.4
Staff professionalism			1	.3	186	48.3	153	39.7	45	11.7
Ease of Booking Tickets (online and offline)			1	.3	174	45.2	154	40.0	56	14.5
Availability of Information (schedules, routes)					184	47.8	121	31.4	80	20.8

This table - indicated that 203(52.7%) respondent rate. Cleanliness of the Vehicles as Good, 128 (33.2%) Cleanliness of is Vehicles as Very Good54 (14.0%) rated it as excellent. This shows as that majority of passengers were agree with the cleanliness of the vehicles as good. This responses do not show effectiveness of the stations.it suggest that it need more improvement. Related ,previous research done by Bhat and Sardesai (2006) found that comfort, including seating arrangements and cleanliness, is essential for attracting and retaining passengers. Concerning the Punctuality of Departures of the buses, 10(2.6%) rated it as poor 186(48.3%) good 152(39.5%) rate it very good and 37(9.6%) rate excellent. This reveals that majority of passengers 186(48.3%) were agree on the buses departure time is good. But the data indicates that while there is a reasonable level of satisfaction, a significant number of

passengerstill experience delays. This suggests a need for more better performance In the same table, 191(49.6%) rate as good, 160 (41.6%) rated it as very good, 34 (8.8%) were answer excellent. On this point the majority of the respondents at both bus stations 191 (49.6%) were agree on the bus on time arrival is good. In the same Table for the question related to comfort of the buses, 2 (1.3%) rated poor, 218(56.6%) good 123(31.9%) rated it as very good and 41(10.6%) rated excellent. This also shows as that the majority of the passengers 218(56.6%) confirmed that the comfort of the buses are good. Overall comfort ratings are promising, but the presence of a notable percentage of respondents rating it as "Average" indicates that there may be specific areas of discomfort that need to be addressed, such as seat design or legroom. Consequently 5 (1.3%) poor 202(52.5%) good 107(27.8%) very good 71(18.4%) were answer excellent. This response of the passenger shows as that high number of respondent 202(52.5%) on both bus station the Customer service is also good. Concerning Staff professionalism on both Kality and Zenebework bus stations 1(.3%) rated as poor, 186(48.%) rated good, 153(39.7%) rated very good and 45(11.7%) were rated excellent indicating majority of the respondents 186(48.3%) rated it as good at both bus stations the staff professionalism is good and this also shows as positive feedback in the areas reflects well on hiring practices of the staff. Ongoing training and development can further enhance these strengths.

In this table, the responses indicated the Ease of Booking Tickets 1(.3%) rated as poor, 174 (45.2%) rated it as good, 154 (40.0%) very good and 56(14.5%) were respond excellent. this also shows as that high number of the respondents 174 (45.2%) rated good on the Ease of Booking Tickets. Finally, regarding the availability of Information about the schedules, the routes etc. 184(47.8%) good 121(31.4%) very good 80(20.8) rate it as excellent. the responses of majority of the passengers were rated sa good indicating that the overall service quality at both bus stations is good. Regarding the service quality of public transport

4.3.2. Infrastructural Quality

Table 5 Infrastructural Quality

Aspect of service	Poor		Good		Very good		Excellent	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Condition of Roads from/to the stations			218	56.6	134	34.8	33	8.6
Accessibility of Bus Stations	2	.5	206	53.5	135	35.1	42	10.9
quality of bus stations			221	57.4	135	35.1	29	7.5
Bus Station Facilities	4	1.0	223	57.9	109	28.3	49	12.7

Table 2.2 indicated that, regarding the **Condition of Roads** 218 (56.6%) of respondents rate it as Good, 134 (34.8%) rated very good 33 (8.6%) rate excellent. here are the majority of the respondents 218 (56.6%) rated the condition of the road as good. This result does not mean that the stations are doing well, rather, it need more effort. Research done on same area by Meyer and Miller (2001) emphasize that well-maintained roads and bus stations are essential for efficient service delivery. Poor road conditions can lead to delays and increased operational costs, negatively impacting service reliability. Regarding the accessibility of Bus Stations, **2** (.5%) poor and 206(53.5%) were rate good, 135(35.1%) rated it very good and 42(10.9%) were answer excellent. This reveals that accessibility of both bus stations are good. Concerning the quality of bus stations, 221(57.4%) were rated it good, 135(35.1%) were very good, 29(7.5%) were rate it excellent. Here also the quality of both bus stations are rated as good by majority of the respondents 221(57.4%). On **bus station facilities 4(1%) were rate poor,** 223(57.9%) rate good, **109(28.3 were rate very good and 49(12.7%) rated it excellent indicating that the majority of the respondents** 223(57.9%) rate are good and **both bus stations have good infrastructure quality. This result also shows that** infrastructure quality significantly affects the performance of long-distance public transport at both Kality and Zenebework bus stations and still needs more quality infrastructure. These findings align with previous research

indicating that infrastructure quality directly correlates with operational efficiency (Bhatta, 2019). This research also indicates that Poor infrastructure not only leads to increased travel times but also raises operational costs for transport operators, as vehicles are more likely to experience wear and tear on poorly maintained roads, (Bhatta, 2019).

4.3.3. Socio-economic factors

Table 6Socio-economic factors

Aspect of service	Not influential		somewhat influential		very influential		extremely influential	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Income Levels			160	41.6	146	37.9	79	20.5
Economic Stability			203	52.7	125	32.5	57	14.8
Employment Status			165	42.9	148	38.4	72	18.7
Different Pricing Models			209	54.3	116	30.1	60	15.6

According to Table .2.3 indicated that 160 (41.6%) rate somewhat influential 146 (37.9%)were rate very influential79 (20.5%) rate the income level as extremely influential. But the majority of the respondents 160 (41.6%) rate the income level somewhat influential. In the same table Concerning the Economic Stability 203 (52.7%) rate somewhat influential, 125(32.5%) very influential,57(14.8%0 rate the Economic Stability as extremely influential. The majority of passenger responses 203 (52.7%) shows that the Economic Stability is somewhat influential. Concerning the Employment Status, 165 (42.9%) were rate the Employment Status as somewhat influential148 (38.4%) very influential72 (18.7%) extremely influential. This reveals high number of respondents 165 (42.9%) rate an employment status as somewhat influential. In the same table regarding the Different Pricing Models 209 (54.3%) rate somewhat influential,116 (30.1%) were rate very influential and 60(15.6%)extremely

influential. this table indicates that Different Pricing Models 209 (54.3%) rate somewhat influential and overall the table shows as that socio-economic factors somewhat influence the choice of the transport preference.

4.3.4. Cost-Effectiveness Factors

Table 7 Cost-Effectiveness Factors

Aspect of service	Poor		Good		Very Good		Excellent	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Affordability of Ticket Prices	1	.3	198	51.4	135	35.1	51	13.2
Cost of Additional Services (e.g., luggage fees):			207	53.8	128	33.2	50	13.0
Availability of Discounts and Promotions: Offered			201	52.2	131	34.0	53	13.8
Cost of Travel			215	55.8	143	37.1	27	7.0
Perceived Fairness of Pricing:	2	.5	193	50.1	138	35.8	52	13.5

Table 2.4.indicated that 1(.3%) rate poor,198(51.4%) ,rated asgood,135(35.1%) rate Very Good51(13,2%) rated affordability of Ticket Prices excellent. This reveals that majority of passengers 198(51.4%) were rated affordability of Ticket Prices is good, indicating the affordability of ticket prices are good, But, still this does not show performance of the stations and need more efforts. The same way the above table shows 207(53,8%) rated good, 128(33,2%) rated very good 50(13.0%) rated excellent, indicating that the cost of additional service is also good Concerning the availability of Discounts and Promotions: 201(52.2%) good 131(34%) were rate very good and 53(13,0%) rated excellent. On this point the majority of the respondent 201(52.2%) rate as good. The same way regarding the Cost of Travel, 215(55.8) were rate good,143(37.1%) rate very good,27(7.0%) rate excellent. This indicates great number of passengers rate the cost of travel is good. As shown in the table, Fairness of Pricing: 2(0.5%) rated poor, 193(50.1%) very good, 138(35.8%) rated excellent and this shows

as that the majority of the respondent 193(50.1%) were rate the fairness of pricing as good. However, overall, at both buses station the cost-effectiveness's good. Research by TesfayeMekonnen stated Economic factors, including fluctuating fuel prices and fare affordability, were found to significantly impact public transport performance. Many passengers reported that rising fuel costs led to increased fares, making public transport less accessible that the fare structures should be designed to reflect operational costs while remaining affordable for passengers (Mekonnen, 2021).

4.3.5. Safety and Security Factors

Table 8 Safety and Security Factors

Aspect of service	Very Unsafe		unsafe		Neutral		safe		Verysafe	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Driver Behavior					202	52.5	160	41.6	23	6.0
Condition of Vehicles			1	.3	208	54.0	156	40.5	20	5.2
Availability of Safety Equipment					219	56.9	136	35.3	30	7.8
Security Measures (e.g., presence of security personnel):	6	1.6	15	3.9	231	60.0	119	30.9	14	3.6
Perceived Safety During Travel					225	58.4	117	30.4	43	11.2

In Table 2.5 indicated that 202(52.5) Neutral, 160(41.6%) safe23(6.0%) rate Very safe. This shows for the safety of the passengers the majority of the passengers 202(52.5) rate the driver behavior as Neutral, about the driver behavior which shows as that larger amount of the passengers do not relay on the drivers behavior or they are in dilemma. Regarding the Condition of Vehicles, 1(0.3%) rate poor, 208(54.0%) Neutral, 156(40.5%) rate safe and 20(5.2%) rated excellent and here the great number of passengers 208(54.0%) rate Neutral.

This also shows thatpassengers are Neutral about Condition of Vehiclesat both bus stations. This result shows as it needs more improvement and aligns with previous study that state, Vehicle condition and maintenance are crucial for ensuring the reliability of public transport services, and regular maintenance schedules and adherence to safety standards are necessary to minimize breakdowns and enhance passenger safety (Kumar & Singh, 2018).

In the same table, concerning Security Measures, 219 (56.9%) rate neutral,136(35.3%) rate safe, 30(7.8%) very safe. Here is the majority of the respondents 219 (56.9%) rate Availability of Safety Equipment (e.g., seat belts, fire extinguishers) asNeutral. Concerning Security Measures at the bus station, 6(1.6%) very unsafe 15(3.9%)rate unsafe, were rate on Signs 231 (60.0%) rate neutral, 119(30.9%) rate safe 14(3.6%) very safe. the responses indicates that the majority of respondent 231 (60.0%) rate neutral about the Security Measures at the bus station. In the same table 225(58.4%) were rate Perceived Safety during Travel neutral, 117(30.4%) rate safe, 43(11.2%) rate very safe. The highest number of passenger 225(58.4%) respond as neutral. The overall results of this table shows as neutral about the Perceived Safety during Travel. The above table shows that, larger number of the passengers from both bus stations rated Safety andSecurity Factors neutral indicating that they are in mixed emotion neither safe nor unsafe they are neutral.Overall, the finding suggests that the both stations should work towards safety and security measure improvement. Similarly previous study also suggested that, Transport operators should invest in fleet management practices that prioritize vehicle upkeep and safety inspections. Moreover, the government should enforce regulations that require operators to maintain a certain standard of vehicle quality, thereby improving overall service reliability. (Kumar & Singh, 2018).

4.3.6. Passenger's satisfaction

Table 9 Passenger's satisfaction

Aspect of service	Very Dissatisfied		Dissatisfied		Neutral		Satisfied		Very satisfied	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Timeliness of Arrivals	8	2	22	5.7	172	44.7	137	35.6	46	11.9
Travel Time:					178	46.2	147	38.2	60	15.6

Frequency of Services (how often buses run)					161	41.8	165	42.9	59	15.2
Cost of Travel	22	5.7	91	23.6	171	44.4	85	22.1	16	4.2
Fare Pricing					179	46.5	161	41.8	45	11.7

In Table 2.6 indicated that 8(2%) Very Dissatisfied, 22(5.7%) Dissatisfied 172(44.7%) neutral and 137 (35.6%) were satisfied 46(11.9%) very satisfied on the timeliness of arrival of the buses. This reveals that majority of passengers 172(44.7%) respond neutral on the buses timeliness of arrival or this suggests that they neither satisfied nor dissatisfied. This indicate that timeliness is a mixed experience for many passengers and on the other hand a significant portion of passengers 137(35.6%) are satisfied with the timeliness of arrivals, indicating that many find the service acceptable. Concerning the Travel Time; 178(46.2%): rate it as neutral, this means that a significant number of passengers neither satisfied nor dissatisfied with travel time, indicating that this is a concern for many travelers. On the other hand, 147 (38.2%) satisfied indicating significant number of passengers regarding travel time shows positive perception among a significant minority. Nevertheless, concern should be taken into account to address the issue of those who are dissatisfied and to improve overall passenger satisfaction and enhance the quality of long-distance public transport services. Regarding the Frequency of Services; considerable number of respondent 161 (41.8%) rate Neutral indicating that this is major area of concern to work on. On the same table above, 165(42.9%) rated satisfied on the frequency of service the bus station and 59(15.2%) of the respondents rate service frequency as very satisfied. Concerning the Cost of Travel, 22(5.7%) were Very Dissatisfied, 91(23.6%) dissatisfied, 171(44.4%) neutral, 85(22.1%) satisfied, 16(4.2%) very satisfied, from this result we can conclude that significant amount of the respondents 171(44.4%) were neutral or neither satisfied nor dissatisfied. When we sum up all the three respondents ratings of very dissatisfied, dissatisfied and neutral we get very large number of passengers who are out of the range of satisfaction and this need more improvement

Overall, this finding indicates that passengers have significant concerns regarding travel time and the frequency of services, with high levels of dissatisfaction in these areas. While there are some satisfied passengers regarding timeliness of arrivals, the overall sentiment leans towards

dissatisfaction, particularly concerning travel time and fare pricing. The cost of travel appears to be a mixed experience, with many passengers remaining neutral. Addressing these issues could lead to improved passenger satisfaction and a better overall experience in long-distance public transport.

4.4. Regression Analysis

For this research multiple linear regression models was employed and SPSS Software is used for the statistical data processing. The dataset consists of 193 and 192 responses collected from passengers at Kality and Zenebework bus station respectively. The respondent provided ratings on a scale of 1 to 5 for determinants, allowing for a nuanced understanding of passenger perceptions. The data include, demographic information,(age, gender and Travel frequency) and the ratings for safety measures, service quality, infrastructure quality, socioeconomic influences, and cost-effectiveness. The regression analysis aims to identify which factors significantly predict the long distance public transport performance. The dependent variable is long distance public transport performance, while the independent variables include safety and security measure, service quality, infrastructure quality, socioeconomic factors, cost-effectiveness.

4.4.1. Model Summary

Table* 10*Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.825[a]	.681	.676	.17022	2.473

a. Predictors: (Constant), Safety and Security Factors, Socioeconomic Factors, Infrastructure Quality, Cost-Effectiveness, Service Quality

b. Dependent Variable: Transport performance

R- square shows the value of the multiple correlation coefficient between the dependent and the independent variables found to be (R=..825).This represents strong correlation.

R-squared value, the model's R-squared value of .681indicates 68.1% of the variance in public transport performance can explained by independent variables included in the model. This suggest moderate explanatory power of the model in understanding passenger satisfaction and then the performance of public transport

Adjusted R-square coefficient of determination or correlation coefficient squaredfound to be.676.Thisvalue of the adjusted R-square accounts for the number of predictor in the model providing more accurate measures of explanatory power and it is lower than r-square. 67.6 or. 67.6%. The value indicates the loss of predictive power or shrinking of its value and it tells as that much variance in the dependent variable could be accounted for if the model had been derived from the population. This also give same idea about how well our model generalizes and ideally its value becomes the same or very close to the value of R 2 or difference for model is small (.681-.676= 005). This shrinkage means if the model taken from population rather than sample it accounts for approximately 0.0005% less variance in the result. So that, we can conclude that, this regression model has resulted in a significant prediction of the influencing factors of the performance of public transport.

Durbin Watson; used to check for independence of errors tests, serial correlation between errors and also used to detect presence of autocorrelation in residuals. Its value always lies between 0 and 4. If Durbin Watson statics is less than 3 there is positive serial correlation. If it is less than 1.0 there may be some problem. In our case the value of Durbin Watson is 2.473 which is in the acceptable range (1-3)

4.4.2. The ANOVA Table Result

The result of ANOVA shows as that, weather the proportion of the variance explained in the model summary is significant or not. It also tells as that if overall effect of all the independent variable on the public transport performance is significant. It also shows the value of F-statics 23.391, 5, 4.678 degree of freedom is significant at 95% confidence interval meaning the model is statistically significant as shown in ANOVA table below.

Table 11 ANOVA Table

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.391	5	4.678	161.462	.000[b]
	Residual	10.981	379	.029		
	Total	34.373	384			
a. Dependent Variable: Transport performance						
b. Predictors: (Constant), Safety and Security Factors, Socio-Economic Factors, Infrastructure Quality, Cost-Effectiveness, Service Quality						

4.4.3. Coefficients

Table 12 Coefficients

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.442	.169		2.619	.009	.110	.773		
	Service Quality	1.027	.038	.908	26.679	.000	.951	1.103	.728	1.375
	Infrastructure Quality	.056	.022	.075	2.554	.011	.013	.098	.978	1.022
	Cost-Effectiveness	-.187	.025	-.256	-7.547	.000	-.236	-.138	.731	1.367
	Socio-Economic Factors	-.006	.016	-.011	-.374	.709	-.038	.026	.989	1.011
	Safety and Security Factors	-.015	.021	-.021	-.704	.482	-.057	.027	.981	1.020

a. Dependent Variable: Transport performance

4.5. Interpretation

The above table shows the output of multiple linear regressions of the model of the public transport performance. TheCoefficients table shows that**Service Quality, Infrastructure Quality, Cost-Effectiveness**are Significant at significance level of 0.05 and **Socio-Economic Factors and Safety and Security Factors**are not.

The Predictors included in the model,Service quality factor sis significant (p-value=.000) at significance level of 0.05

The infrastructure quality is significant (p-value=.011) at significance level of 0.05, Cost-Effectiveness, (p-value=.000)significant at 0.05 significance level

The table also shows as various statistical outputs that indicate the relationships of the dependent and the independent variables. The interpretation of the coefficients of β is presented as follow;

Concerning the service quality coefficient of beta (1.027) value show positive relationship; and the interpretation is; keeping other factors constant, when service quality increase by 1 %, public transport performance increase by 1.027% and it is significantly affect public transport performance.This result aligns with the research finding that stated **Service Quality** is a critical determinant of public transport performanceBhat and Sardesai (2006) found that comfort, including seating arrangements and clearness is essential for attracting and retaining passengers. Research by Kearney et al. (2019) highlights that, comfort, and safety significantly influence user satisfaction and ridership. Passengers prioritize punctuality and consistency, with delays leading to decreased trust in public transport services.

Infrastructure quality; coefficient the beta (0.05) value also show that infrastructure quality and public transport have positive relationship; The interpretation is ; keeping other factors constant, when infrastructure quality increase by 1% the public transport performance also increase by 5.6% and it positively affect the public transport performance. Some Previous literature findingalso depicted Infrastructure quality plays a vital role in the performance of public transport systems. Meyer and Miller (2001) emphasize that well-maintained roads and bus stations are essential for efficient service delivery. Poor road conditions can lead to delays and increased operational costs, negatively affecting service reliability.

Cost-Effectivenesscoefficient of the β(-.187) value also show that the relationship between cost-effectiveness and public transport performance negative, and cost effectiveness negatively affects public transport performance. The interpretation is; Keeping other factors constant decrease in cost effectiveness by 1%, the public transport also decrease by 18.7%, and cost effectiveness negatively affects public transport performance. Related previous study done by, Mekonnen (2021) found that, affordability of fare systems could enhance ridership specially, for low incomepopulations. High fares can limit access and discourage use. Understanding fare elasticity is essential for setting competitive prices that maximize ridership while ensuring financial sustainability.

4.6. Test of Hypothesis

The hypothesis tests conducted for the various factors affecting long-distance public transport performance in Ethiopia, it needs to establish hypotheses related to each factor, then, Specific hypotheses for each factor affecting transport performance at Zenebework and Kaliti Bus Stations, along with the appropriate statistical tests that could be used. Below are some of the factorsandhypothesis test for each factor.

Table 13 Hypothesis

	Hypothesis statement	p-value	Significance	Result
Hypothesis (H1a):	Accessibility of Bus Stations significantly affects long distance public transport performance	.028	Significant	accept
Hypothesis (H1b):	Infrastructure quality s affects long-distance transport performance.	.000[b]	Significant	accept
Hypothesis (H1c):	Service quality is positively correlated with public transport performance.	.000[b]	Significant	accept
Hypothesis (H1d):	Timeliness of arrivals significantly correlates with transport performance	.000[b]	Significant	accept
Hypothesis (HIe):	Ease of Booking Tickets positively influence public transport performance	000[b]	Significant	accept

Hypothesis (HIf):	Cost-Effectiveness significantly affect long-distance public transport performance..	.000[b]	Significant	accept

4.7. Discussion

This study aimed to identify and analyze the determinants of long-distance public transport performance in Ethiopia, with a focus on Kality and Zenebework bus stations. The analysis incorporated service quality, infrastructure quality, socio-economic factors, cost-effectiveness, and safety and security as independent variables, with performance and passenger satisfaction as the primary dependent variables. The regression analysis revealed significant insights that confirm and extend existing literature.

4.7.1. Service quality

Service quality has the greatest positive impact on transport performance, according to the results of the regression analysis and descriptive statistics ($\beta = 1.027$, $p < 0.001$). This suggests that the most significant driver is service quality, which improves transport performance by 1.027% for every 1% increase in service quality. Customer service, comfort, convenience of booking, and punctuality were all evaluated as usually good by respondents. However, average scores were given to aspects like cleanliness and the promptness of vehicle arrival, indicating room for improvement.

These results are consistent with previous research. According to Bhat and Sardesai (2006), using public transportation requires comfort, which includes cleanliness and sitting. In a similar vein, Kearney et al. (2019) discovered that user experience and dependability are important indicators of public transportation use. These findings are corroborated by the study's data, which shows that passengers prefer prompt, clean, and consistent services.

4.7.2. Infrastructure Quality

The regression output indicates that infrastructure quality also positively affects transport performance ($\beta = 0.056$, $p = 0.011$). Respondents generally rated road conditions, station facilities, and accessibility as good, though with some limitations. For instance, while bus station facilities and accessibility received favorable ratings, road quality remained a concern. This supports the findings of Meyer and Miller (2001), who emphasized that poor

infrastructure results in higher operational costs and service delays. Bhatta (2019) further asserted that infrastructure quality is a key determinant in reducing service interruptions and enhancing customer satisfaction. This study corroborates those findings, showing that improved infrastructure correlates with better transport outcomes.

4.7.3. Cost-Effectiveness

Interestingly, the cost-effectiveness variable showed a negative relationship with public transport performance ($\beta = -0.187$, $p < 0.001$). This suggests that as perceived cost-effectiveness decreases—possibly due to increased fares or unclear pricing structures—overall performance ratings also decline. Although most passengers rated affordability and fairness of pricing as good, their neutral stance on cost and travel frequency suggests lingering concerns.

This finding echoes Mekonnen (2021), who argued that fare affordability significantly impacts accessibility, particularly for lower-income groups. High fares can discourage frequent use, thereby reducing the overall effectiveness of transport systems. This study extends that claim by quantifying the adverse impact of perceived inefficiencies in cost structures.

4.7.4. Social-Economic Aspects

The socioeconomic variables of pricing models, employment status, and income level did not influence transit performance in a statistically meaningful way ($p = 0.709$). Even though the respondents described these factors as "somewhat influential," the regression indicates that they have little direct effect on function. Studies like Littman's (2015) indicate that socioeconomic circumstances frequently have a significant impact on the choice of transportation. Given that the majority of the sample is middle-aged (20–40 years old), with similar incomes and travel habits, the relatively low impact observed here may be the consequence of less variation in socioeconomic influence.

4.7.5. Security and Safety Considerations

According to the regression model, the safety and security variables were likewise not significant ($p = 0.482$). Onboard safety equipment, driver conduct, and vehicle conditions received mixed evaluations from a sizable percentage of respondents in spite of this. Overall neutrality points to a lack of clarity in passengers' views of safety, which is a result that merits more research. Kumar and Singh's (2018) earlier study emphasized the significance of

maintenance and safety in public transportation systems. Inconsistent communication by transportation authorities or a lack of visibility of safety procedures could be the cause of this divergence. This emphasizes the necessity of more robust safety assurance protocols and improved public outreach.

4.7.6. PassengerSatisfaction

Traveler Contentment Results are not entirely consistent. Significant discontent was expressed with the frequency of services and fee pricing, although arrival and journey time timeliness received largely neutral or somewhat positive ratings. The confusion or indifference expressed by 44.4% of respondents toward the expense of travel may have resulted from inconsistent fares or a lack of transparency. These results imply that while core transport services are generally well-reviewed, in order to improve satisfaction levels, problems including fare fairness, schedule dependability, and service frequency must be addressed. This supports Givoni and Rietveld's (2014) assertion that cost transparency and service dependability are essential for promoting sustained consumer happiness.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This research aimed to investigate the determinants of long-distance public transport performance in Ethiopia, specifically at the Kality and Zenebework bus stations. The study focused on several key factors, including infrastructure quality, service quality, cost-effectiveness, socioeconomic conditions, and safety and security factors. Data were collected from passengers using appropriate instruments, and the analysis was conducted to identify the determinants influencing long-distance public transport performance.

The findings of this study indicate that among the various variables examined, service quality, cost-effectiveness, and infrastructure quality significantly affect long-distance public transport performance. Furthermore, respondents expressed a degree of dissatisfaction with the transport services provided. To address these issues, both bus stations should prioritize the following areas:

Service Quality Improvement: Enhancing the overall service quality is crucial. This can be achieved through better training for staff, ensuring timely departures and arrivals, and improving customer service interactions.**More Comfortable and Reliable Vehicles**: Upgrading the fleet to include more comfortable and reliablevehicles will enhance the travel experience for passengers. Regular maintenance and timely replacements of old vehicles are essential to ensure reliability.

More Facilities in the Bus Stations: Improving the facilities available at the bus stations, such as waiting areas, restrooms, and food services, can significantly enhance passenger comfort and satisfaction. **Affordable Ticket Prices**: Ensuring that ticket prices remain affordable is vital for accessibility. A pricing strategy that considers the socioeconomic status of passengers can help maintain ridership levels. **Improved Infrastructure**: Investing in better road conditions and vehicle maintenance is essential for ensuring safety and efficiency in transport services. This includes regular assessments and upgrades to the infrastructure used by public transport. **Enhanced Staff Professionalism**: Training programs aimed at improving staff professionalism can lead to better customer interactions and overall service quality. This includes training in communication, problem solving, and customer service skills.

Addressing the challenges related to the determinants of long-distance public transport performance in Ethiopia, particularly at the Kality and Zenebework bus stations, is essential for improving the quality of life for citizens. It also plays a significant role in fostering economic growth and enhancing the social, political, and economic integration of the entire population. By focusing on infrastructure quality, service quality, socioeconomic factors, safety and security, and cost-effectiveness, it is possible to create a more effective and efficient public transport system that meets the evolving needs of the community. Improving the performance of long-distance public transport will not only enhance passenger satisfaction but also contribute to the broader goals of sustainable economic development in Ethiopia.

Future Research Direction

To build on the finding of this study, future research could explore the following areas

Comparative studies: conduct comparative studies between different cities or regions in Ethiopia toidentify unique challenges and best practice in public transport performance

Impact of Technology: Investigate the role of technology in enhancing public transportation services such as mobile application for ticketing real-time tracking etc.

Passenger Demography: Explore the experience of specific demographic groups such as women, elderly, passengers and low income in individuals, to understand unique challenges and needs in using public transport.

Policy analysis: Analyzing the Effectiveness of existing transport policies and regulations in Ethiopia identifying gaps and opportunities for improvement.

Byaddressingthisareafutureresearchcancontributetomorecomperhensiveundestandingofpublictran sport performance in Ethiopia

Longitudinal studies: Conduct Longitudinal studies to assess the long-term impacts of implemented recommendations on public transport performance and passenger satisfactions. By addressing these areas, future research can contribute to a more comprehensive understanding of public transport performance in Ethiopia.

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APPENDICES

Research Questionnaire;

The Determinants of Long Distance Public Transport Performance in Ethiopia; in a case of kaliti and Zenebework bus station

General Instructions:

Please answer the following questions by circling the later you choose and for the table questions put ―X‖ in the box. Your responses will keep confidential and will used solely for research purposes.

Section 1: Demographic Information

1. Age:

☐ Under 18
☐ 20-30
☐ 31-40
☐ 41-50

☐51 and above

2. Gender:

☐ Male
☐ Female

Section 2: Travel Behavior

How often do you use long-distance bus services?

☐ Never☐ Rarely☐ Sometimes☐ Occasionally☐ Always

Please, rate the following aspects of different services on a scale of 1 to 5, where 1 = Very Poor and 5 = Excellent at kality and Zenebework bus station.

Rate the following aspects of service quality at Kality/Zenebework bus station (1 = Very Poor, 5 = Excellent):

No.	**Service Aspects/ service quality**	1(**Very Poor**)	2 (**Poor**)	3 (**Good**)	4(Very good)	5(**Excellent**)
	Punctuality of Departures					
	Comfort of Seating					
	Cleanliness of Vehicles					
	Staff professionalism					
	Customer Service (staff attitude and helpfulness)					
	Availability of Information (schedules, routes)					
	Ease of Booking Tickets (online and offline)					

Rate the following aspects of infrastructure quality of Kality/Zenebework bus station (1=Very Poor), 5= 5(Excellent)

No.	**Service Aspects/ infrastructure quality**	1(Very Poor)	2 (Poor)	3 Neutral)	4(Very good)	5(Excellent)
	Condition of Roads					
	Accessibility of Bus Stations (proximity of bus stops, ease of access for individuals…)					
	quality of bus stations					
	Bus Station Facilities (waiting areas, restrooms, etc.)					

How do the following socio-economic factors influence your travel choices at **Kality/Zenebework bus station**? (1 = Not Influential, 5 = Very Influential

No.	**Service Aspects/** Socio-Economic Factors	1(Not Influential)	2(Low Influential)	3(Influential)	4(highly Influential)	5(Very highly Influential)
	Income Levels					
	Economic Stability					
	Employment Status					
	Access to Information About Transport Options:					
	Different Pricing Models					
	Fuel Prices					

Rate the following aspects of Cost-EffectivenessatKality/Zenebework bus station, 1(**Very Poor**), 5(**Excellent**)

No.	Service Aspects/ Cost-Effectiveness	1(**Very Poor**)	2 (**Poor**)	3 (**Good**)	4(Very good)	5(**Excellent**)
1.	Affordability of Ticket Prices					
2.	Operational Costs (e.g., fuel, maintenance):					
3.	Cost of Additional Services (e.g., luggage fees):					
4.	Availability of Discounts and Promotions: Offered					
5.	Cost of Travel					
6.	Impact of Fuel Prices on Ticket Costs					

How safe do you feel when using long-distance public transport at Kality/Zenebework bus station ? (1 = Very Unsafe, 5 = Very Safe):

No.	**Service Aspects/ Safety and Security Factors**	1(**Very Unsafe**	2 (**unsafe**)	3(poorly safe)	4 **(Safe)**	**5(Very Safe)**
1.	Driver Behavior					
2.	Condition of Vehicles (e.g., age, maintenance, safety checks)					
3.	Availability of Safety Equipment (e.g., seat belts, fire extinguishers:					
4.	Security Measures (e.g., presence of security personnel):					
5.	Perceived Safety During Travel					

Rate the following aspects Transport performanceLevel of Satisfaction at Kality/Zenebework bus station, 1(Very Dissatisfied), 2 (Dissatisfied), 3 (Neutral), 4(Satisfied), 5(Very Satisfied)

No.	aspects Transport performanceLevel of Satisfaction	1(Very Dissatisfied)	2 (Dissatisfied)	3 (Neutral)	4(Satisfied)	5(Very Satisfied)
1.	Timeliness of Departures					
2.	Timeliness of Arrivals					
3.	Travel Time:					
4.	Frequency of Services (how often buses run)					
5.	Fare Pricing					
6.	passengers OverallSatisfactionofservices					

Thank you for your participation! Your responses are valuable for this research