

**TRANSPORT INFRASTRUCTURE AND TRADE ACTIVITIES IN KISMAYO
DISTRICT, SOMALIA**

BY

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**A RESEARCH DISSERTATION SUBMITTED TO THE COLLEGE OF HUMANITIES
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UNIVERSITY**

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DECLARATION

I, Hassan Miyir Sahane, thus attest that this research dissertation is wholly original with no submissions to academic awards programs at any universities.

Signature of the Student m. y. Date 28/07/2024

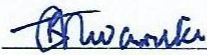
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APPROVAL

I so attest that this dissertation is now being overseen by me and is prepared for submission to Kampala International University's College of Humanities and Social Sciences as work in progress.

Signature of the Supervisor



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26/07/2024

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DEDICATION

I first want to dedicate this work to the All-Powerful Allah, who has made it possible for me to complete this research successfully. I also want to dedicate it to my parents, Mr. Miyir Sahane Hassan, my father, and Mrs. Jamad Abdullahi Omar, my mother, without forgetting my older brother Mohamud Miyir. God Almighty, I pray for you all.

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ABSTRACT

This research focused on investigating how transport infrastructure impacts trade activities in Kismayo district, Somalia. The study had specific objectives: (i) to explore the influence of road transport on trade activities, (ii) to assess the impact of sea transport on trade activities, and (iii) to evaluate the effects of air transport on trade activities in the district. The research employed a case study strategy to gain a comprehensive understanding of the issue in its real-life context. A mixed-method approach combining qualitative and quantitative data collection methods was used to complement each other. The study targeted a population of 265 households identified from the ministry of public works, Somalia MoPW, Somalia infrastructure fund, Somalia urban resilience project phase, all located in Kismayo district. However, a total of 160 respondents were obtained using the Sloven's formula. The data collection instruments included questionnaires and interviews. The results from regression analysis showed that road transport had a positive impact on trading activities in Kismayo district, Somalia, with a rate of 3.7% and an r-squared value of 0.037, indicating a moderate significant relationship. Similarly, sea transport also positively influenced trading activities at a rate of 0.7% with an r-squared value of 0.007, suggesting a moderate significant relationship. Additionally, air transport was found to have a significant impact on trading activities in the district, with a rate of 44.8% and an r-squared value of 0.448. In conclusion there is evident that transport infrastructures are essential for trade activities. Transport infrastructure has elaborative transportation such as road, sea and air that deals with different trading activities, from its inception to completion. The tracker that monitors the sequences and tenure of trading activities-related tasks is responsible for the movement and delivery of goods and supplies. A schedule for trading activities informs the team of any delays or incorrect directions. This document is live, necessitating regular updates and recordings. The study concludes that the vital role of sea transport in Kismayo's trade activities, from supporting small businesses to reducing transaction costs and contributing to sustainable development. The findings underscore the importance of continued investment in maritime infrastructure and planning to address challenges and enhance the effectiveness of sea transport in promoting economic growth and resilience in the region. For the trading activities in Kismayo key planning element such as the constructions of trading activities and involvement of the local community and other relevant stakeholders is critical in the overall trading activities success. The study recommended that there is need for the government of Somalia to establish a monitoring and evaluation system to regularly assess the effectiveness of road transport initiatives. This includes evaluating the impact of road improvements on trade activities, identifying challenges, and making necessary adjustments for continuous improvement. More so there is need for the government of Somalia to invest in the development and maintenance of maritime infrastructure, including ports and docking facilities. Ensure that these facilities are well-equipped and capable of handling increasing trade volumes.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This section outlined and explained the context of the study, research problem, goals and aims of the study, research inquiry, as well as the study's extent and importance.

1.1 Background to the study

The study provides background information from four perspectives: historical, theoretical, conceptual, and contextual.

1.1.1 Historical perspectives

Investment in transport infrastructure has been a crucial tool for economic growth and an essential component of urban and regional development strategies in many countries. It has also played a significant role in addressing various urban and regional issues and promoting the spatial economy. Political leaders and policymakers in the EU, US, and China have placed great importance on providing adequate transport infrastructure to drive economic development, reduce disparities and congestion, and enhance territorial cohesion. For example, President Barack Obama unveiled an investment plan in 2011 that included an infrastructure package worth over \$60 billion aimed at reducing carbon emissions, boosting the economy, and improving transportation for American families. Likewise, President Xi Jinping of China announced a transportation investment plan in 2014 to support low-carbon, intelligent development and establish a modern, comprehensive transport system. The goal is to align with the national 'One Belt, One Road' strategy to connect Beijing, Tianjin, Hebei, and the Yangtze Economic Belt into a unified region. In the EU, a significant portion of the European Regional Development Fund (ERDF) and Cohesion Fund was dedicated to infrastructure investment between 2007 and 2013, with approximately €76 billion from the ERDF budget allocated specifically for transport infrastructure (European Commission, 2008).

Transport infrastructure encompasses all essential elements and necessities for the effective operation of the economy (Jerome, 2011; United Nations, 2011, p. 5). Infrastructure advancement is beneficial for economic growth, as highlighted by the United Nations (UN) (United Nations, 2011). This suggests a two-way connection between infrastructure and GDP. The significance of transport infrastructure in infrastructure progress is crucial. Consequently, the synergistic effect of these two factors can greatly influence economic development.

During the period between 1700 and 1830, traditional modes of transport, such as road, air, and water, saw advancements in technology and infrastructure. However, the real transport revolution occurred with the development of canals, railways, and steamships worldwide (Crescenzi & Rodríguez-Pose, 2012). Canals played a crucial role in expanding water transportation to vital segments of the economy where natural waterways were lacking, or the landscape was too difficult to navigate. Engineers had to innovate and construct reservoirs, divert water over long distances, and implement locks to manage changes in elevation (Bogart, n.d.). Hill (2018) notes that during the turnpike era of 1800–1820, there was a significant demand for improved overland infrastructure, marking the early stages of private enterprise driving transportation development. This trend continued, with private turnpike construction being favored over investment in public roads. By 1820, over 11,000 miles of turnpikes had been constructed, primarily in the northern regions, as a result of increased commercial activity and the subsequent rise of canal and railway systems (Perkins, 2011).

During the 19th century in America, the steam engine's invention significantly enhanced waterway shipping and led to the emergence of a new transportation sector - the railroad. Towards the end of the century, some steam locomotives started utilizing electricity as a power source. Local transportation options included walking, horseback riding, or traveling in a horse-drawn wagon or carriage. For short distances, freight was transported via wagons. The only structured mode of travel involved sailing ships that transported passengers and cargo along designated routes on the Great Lakes, between East Coast cities, and between America and Europe (Travel & Design, n.d.).

After 1950, there was a shift towards prioritizing road transportation in the transport policy. It was recognized that having a strong transportation infrastructure and services is crucial for promoting trade and achieving economic growth. The state of a country's transportation sector directly influences transport costs and access to markets, which in turn affect its development prospects. The Medium Term Programme, such as the 2010-2012 one, also highlights the importance of creating a balanced transportation infrastructure that meets modern standards and environmental considerations, ensuring safe, efficient, and swift transportation.

The transport sector is typically categorized into four primary modes: road, air, maritime, and rail modes. In Sub-Saharan Africa, road is the predominant mode of transportation. Railways were established during the colonial era but largely neglected after independence. Despite once being viewed as a symbol of economic growth and national sovereignty, air transport is not very competitive. Maritime transport is concentrated mainly in coastal regions and is mostly operated by foreign companies. Given the low economic status of the population and the continent's geography with many landlocked areas, road transport has become the primary means of transportation in the region (Tchanche, 2019).

1.1.2 Theoretical perspectives

This study was underpinned on the New trade theory by Krugman (1979). New trade theory in contrast to the neoclassical trade theory, the reasons why two countries trade do not depend on comparative advantage in new trade theory. Krugman (1979, 1980) developed a model in which countries trade even when there is no comparative advantage, but trade is still welfare-enhancing. New trade theory started to develop because of the fact that a large part of international trade takes place between countries with similar factor endowments. Thus, where neoclassical predicts inter-industry trade, the new classical theory predicts especially intra-industry trade. Since, it is often the case that countries with the same factor endowments are located in the same region, more intra-industry trade usually also leads to more intraregional trade.

The emergence of new trade theory can be traced back to Krugman's work in 1979. In his paper, he introduces a model where trade is driven by economies of scale within firms operating in a market characterized by monopolistic competition. Another key aspect of this model is the "love-of-variety" phenomenon in consumer preferences, whereby consumers consistently prefer a greater variety of products. By allowing for trade, these two assumptions ensure that trade occurs and leads to overall welfare improvements. Essentially, with the opening of trade, an increase in variety production is facilitated due to the expanded market size, resulting in more profitable production and subsequently lower prices for each variety. Krugman underlines that the total factor endowment and market size of the countries involved remain constant. Even though enhancing the productivity of all varieties simultaneously is not feasible, positive welfare effects can still be seen if fewer varieties are produced with trade than without it. Lower prices due to increased production lead to higher wages for workers, and if, for example, both countries collectively produce four varieties with trade compared to three without, consumers benefit from more choices, thereby enhancing welfare through the love-of-variety effect.

The model presented by Krugman (1980) differs slightly from Krugman's (1979) model. In Krugman (1980), the expansion of the market due to trade liberalization does not result in increasing returns at the firm level. Trade is driven by the love-of-variety effect, where each good is produced in only one country, leading to gains from trade through increased variety on the world stage. A key element added to this model is the existence of transportation costs in trade, specifically of the iceberg type. Additionally, the demand per variety is no longer symmetrical as countries vary in market size. This, combined with transportation costs, causes countries to focus on producing the variety with the highest demand domestically. Consequently, countries will export goods with the highest domestic demand, known as the "home market" effect (Muuse et al., 2010).

Evidence from the movement of goods and services between nations shows the significance of transport infrastructure in conjunction with other production factors (Hummels, 2009). The author argued that this connection across borders leads to enhanced economic growth and reduced production expenses. Hummels (2009) also highlighted that experts in trade view shipping costs as a barrier to trade due to varying transportation service costs at different ports. Moreover, Hummels (2009) pointed out that as trade continues to increase, exports are

diversifying by tapping into new markets with smaller volumes, and fragmented production networks are becoming more common.

Research carried out on transport infrastructure as a driver for other aspects of the manufacturing process revealed that it reduces production expenses (Fedderke & Garlick, 2008, p. 5). Moreover, transport infrastructure can enhance the effectiveness of other resources involved in the manufacturing process. Brooks (2008, p. 1) also shared this perspective, stating that well-functioning infrastructure services bring down transaction costs, boost value creation, and enhance potential profitability, while also broadening connections to worldwide supply chains and distribution networks for manufacturers.

1.1.3 Conceptual perspectives

This study viewed the independent variable as transport infrastructure and the dependent variable as trade activities. Transport infrastructure is a crucial aspect of an economy, shaping the extent of economic activities with much deliberation on its impacts. According to the classical theory of firm and residential location, transport plays a significant role in determining the location of economic activities (Jiwattanakulpaisarn, 2008). Recognizing the significance of transport costs, the general belief is that efficient transport facilities are vital for a region's competitiveness and prosperity as they enhance accessibility to resources, goods, and markets. Some also stress the importance of enhancing transport connections between distant markets to alleviate bottlenecks in production, trade, and economic integration.

Productivity growth is considered the main measure of success in the transportation sector. It is achieved when transport providers increase the number of ton miles and passenger miles more quickly than they increase resources like labor, capital, and fuel. This increase in output compared to the total input is known as total factor productivity growth (TFP). Research has been conducted to estimate the average rate of TFP growth in different transport sectors in Somalia (Bogart, n.d.).

Transportation is the process of moving individuals and goods from one place to another. Technological progress has significantly altered the methods and modes of transportation. Roads and railways were built, and ships were updated. These advancements have allowed people and goods to travel over long distances in shorter time periods (World Bank Report, 2011).

Macroeconomists have primarily focused on endogenous growth theory, which suggests that the development of transport infrastructure can impact economic growth and advancements in economic development either directly or indirectly as a factor in the production process or by fostering technological innovation. Recent research on urban transport enhancements argues that reducing travel times and costs can enhance agglomeration benefits, leading to increased productivity growth. The perceived quality of locations with well-developed transport infrastructure is believed to be crucial for businesses and regions. These improvements may result in broader economic advantages from transportation investments, such as increased output, productivity, and employment growth, which are not fully captured by traditional cost-benefit evaluations that mainly consider direct user benefits like time and cost savings, reduced accident risks, and lower health risks from noise and pollution (Jiwattanakulpaisarn, 2008).

1.1.4 Contextual Perspective

Situated on the Horn of Africa, Somalia is the easternmost country on the continent, stretching from just below the Equator to the Gulf of Aden. It holds a strategic geopolitical position between sub-Saharan Africa and the nations of Arabia and southwestern Asia. The capital city, Mogadishu, lies slightly above the Equator along the Indian Ocean coast. Somalia's geography, climate, and soils facilitate the easy development and operation of transportation infrastructure, with an abundance of natural resources for construction. Based on the 2014 Government of Somalia and UN Population Estimation Survey, the country's population was 12.3 million in 2014. Similar to many African nations, the population is largely youthful, with approximately 75 percent under 30 years old and around half under 15 years old. Somalia is experiencing quick urbanization, with 40 percent of the population living in urban areas according to the 2017-2018 Somalia High Frequency Survey. Agriculture and livestock are key pillars of the Somali economy, with livestock contributing 40% to the GDP. The economy is primarily driven by livestock, remittances, and telecoms. External trade in Somalia totals USD 2,458 million yearly, with Ethiopia, Oman, and Saudi Arabia as the main trading partners. Exports amount to USD 545 million and imports to USD 1,913 million.

Perkins (2011) reported that Somalia's transportation infrastructure consisted of around 22,100 km of roads in 2002, with only 2,608 km being paved. A road funded by China and constructed

with Chinese labor in 1978 connected the northern and southern regions of the nation for the first time. The number of motor vehicles in operation in 1995 was 24,000, with a 50-50 split between passenger cars and commercial vehicles. Somalia does not have any railways or commercial water transport services.

A study by Pradhan and Bagchi (2013) explored the link between transportation infrastructure and trade activities, focusing on the relationship between transportation infrastructure (road and rail), trade activities, and gross capital formation in India from 1970 to 2010. The study found bidirectional causality between transportation infrastructure and trade activities. Road transport infrastructure was identified to have bidirectional causality with economic growth and gross domestic capital formation, while railway infrastructure showed a unidirectional causality with economic growth and gross domestic capital formation. Developed countries have seen more significant contributions from transport infrastructure to their economic growth compared to developing countries, reflecting the level of investment they put into their infrastructural development (Dinh & Dinh, 2016). Overall, these studies suggest that economic growth is a result of various factors coming together to create an environment conducive to seizing opportunities to enhance a country's income. However, some studies suggest that infrastructure development has limited impact on economic growth. This viewpoint questions the government's approach to infrastructure development, as issues like delays, capacities, and capabilities can pose challenges to the economy (Achour & Belloumi, 2016; Badalyan, Herzfeld, & Rajcaniova, 2014).

1.2 Statement of the problem

Before the conflict, Kismayo would have had a strongest commerce infrastructure; however, the civil war that has been raging in Somalia for more than two decades has had a major influence on the country's political and economic systems, as well as causing instability and poor governance that have resulted in the total collapse of institutions (Badalyan, et al., 2014). The existing trade infrastructure suffers from deficiencies such as inadequate port facilities, poorly maintained road networks, cumbersome customs procedures, and unreliable telecommunications services. Without adequate road, port and airport infrastructure, it would not be possible to expedite high value economic commodities for export and supply around Somalia. This means that the socio-

economic consequences of potential high value commodities need consideration when selecting, rehabilitating and reconstructing airport infrastructure(infrastructure cluster report, 2006).

According to ISSE (2022)The main infrastructure-related trade barriers is lack of product standardization, lack of access to roads, frictions in cross-border trade, lack of supporting trade policy, and underdeveloped financial intermediation pose severe challenges to trade. Lack of transport infrastructure has impeded movements of goods, services, and access to markets in local, regional, and international. Numerous roadblocks have worsened trade activity in Somalia and make it prohibitively costly to engage in trade. There is a dire need for physical infrastructure in Somalia in the form of roads, ports, airports, access to water, access to electricity, and airline networks to get better and improved infrastructure is required to move goods, services, and people across Somalia. These shortcomings hamper trade efficiency, increase transportation costs, and limit the competitiveness of businesses operating in the region. The trade landscape in Kismayo District, Somalia, reveals critical gaps hindering its full potential. Firstly, inadequate port infrastructure limits the port's capacity to handle increasing trade volumes efficiently (Pradhan & Bagchi, 2013). Lastly, unreliable telecommunications infrastructure inhibits effective communication and information exchange crucial for trade operations (Interministerial Public Works Coordination & Mechanism, 2018). These gaps collectively undermine the competitiveness and growth prospects of Kismayo's trade sector, necessitating urgent attention and targeted interventions to foster sustainable economic development in the region. By addressing these gaps and problems, the study seeks to contribute to the development of effective strategies and policies that promote sustainable trade growth and economic development in Kismayo District, Somalia. Hence a need for a focus on the relationship between transport infrastructure and trade activities in Kismayo district, Somalia.

1.3 Purpose of the study

The purpose of this study was to investigate the effect of transport infrastructure on trade activities in Kismayo district, Somalia.

1.4 Objectives of the study

The specific objectives of this study are to;

1. Examine the effect of road transport on trade activities in Kismayo district.
2. Evaluate the effect of sea transport on trade activities in Kismayo district.
3. Assess the effect of air transport on trade activities in Kismayo district.

1.5 Research questions

1. What is the effect of road transport on trade activities in Kismayo district?
2. What are the effects of sea transport on trade activities in Kismayo district?
3. What is the effect of air transport on trade activities in Kismayo district?

1.6 Scope of the Study

1.6.1 Geographical scope

This research was centered on Kismayo district, which is a port city located in Lower Juba, Somalia, and has an approximate population of 420,000 (Kismayo District Report, 2022). Kismayo is known as the economic hub of the autonomous Jubaland region due to its large seaport. Positioned 528 kilometers southwest of Mogadishu, it is close to the mouth of the Jubba River. The key urban areas within Kismayo include Kismayo City, Goobweyn, Yoontoy, Bulugudud, Abdila-birole, Beerhani, Farjano, Alanley, Guulwade, and Faanoole. The climate in Kismayo is semi-arid, characterized by hot temperatures throughout the year, with sporadic monsoon showers and irregular rainfall (Government of Somalia et al., 2017). The study will be conducted from Kismayo's district because Kismayo is a major port city with a large seaport, making it a crucial hub for trade activities. Ports are key nodes in transportation networks, facilitating the movement of goods and serving as important centers for economic activities. It plays a role as the commercial capital of Jubaland, diverse economic landscape, geographical location, climatic conditions, and the availability of relevant reports make it a suitable and justified choice for studying the effect of transport infrastructure on trade activities in Somalia.

1.6.2 Content scope

The researcher conducted the study in Kismayo district, the transport infrastructure on trade activities in Kismayo district, Somalia. The study focuses on Kismayo transport infrastructure because, here are where the most civil war and terrorist groups are effected and destroyed the public and private sectors and deteriorated situation in Kismayo district, Somalia.

1.6.3 Time scope

The study covered information 2010 – 2023 about on the effect of transport infrastructure on trade activities in Kismayo district, Somalia. The researcher conducted the study in a period of 4 months and that will be from April 2023 up to December 2023 because the process involves data gathering and editing, but questions were asked retrospectively.

1.8 Significance of the study

This research will prove beneficial for the government of Somalia and stakeholders especially in Jubaland state. Transport infrastructure, including roads, ports, and airports, facilitates the movement of goods and people, providing connectivity between different regions and countries. Efficient transport networks enable businesses to reach new markets, suppliers, and customers, thus enhancing trade activities. Reduced costs and time; well-developed transport infrastructure helps in reducing transportation costs and time. This is essential for businesses as lower transportation costs increase profit margins and enable competitive pricing of goods. Moreover, reduced transit time allows for faster delivery, enabling businesses to respond quicker to market demands and customer expectations. Trade facilitation; efficient transport infrastructure contributes to the ease of doing business by facilitating trade processes. It ensures smooth movement of goods, reduces trade barriers, and improves customs clearance, documentation, and logistics services. This results in streamlined trade activities and enhanced competitiveness. Economic development, transport infrastructure acts as a catalyst for economic development. It attracts investments, promotes industrialization, and creates employment opportunities. As trade activities expand due to improved transport networks, economies flourish, and living standards improve.

In summary, transport infrastructure has a significant impact on trade activities by promoting connectivity, reducing costs and time, enhancing access to resources, driving regional integration, facilitating trade processes, and contributing to overall economic development.

1.9 Definition of key terms

Transport infrastructure consists of permanent installations, constructions, and systems that establish a foundation for transporting individuals and products. Within urban areas, transport infrastructure can be classified into five main categories: Roads, Bridges and tunnels, as well as Rail and trams.

Trading Activities: refer to all measures taken by Grantor or its Affiliates to hedge and protect prices related to any Products, raw materials, interest rates, or currency exchanges. These activities include, but are not limited to, forward sale and/or purchase contracts, spot-deferred contracts, option contracts, speculative purchases and sales of forward, futures and option contracts, both on and off commodity exchanges. The outcomes of these Trading Activities, whether profitable or not, will be considered when calculating royalties owed to Royalty Holder, as part of determining price, sale date, or royalty payment date.

Road transport: Transportation by road involves the movement of goods or individuals via motor vehicles or alternative methods like bicycles or motorcycles. Essentially, it entails traveling from the starting point to the intended destination along a designated road route or path.

Sea transport: Sea transportation can be conducted using different types of vessels such as boats, ships, sailboats, or barges, over various bodies of water like oceans, lakes, canals, or rivers. The purpose of shipping can range from business, leisure, to military activities. Although inland shipping is less crucial nowadays, the significant waterways, including numerous canals, remain vital components of the global economy. Essentially, any goods can be transported via water, yet it may not be suitable for urgent deliveries of perishable items. Despite this limitation, water transportation is a cost-efficient option for consistent shipments like trans-oceanic delivery of consumer goods, especially for heavy or bulky cargo such as coal, ores, or grains. It is argued that the introduction of cheap water transport during the industrial revolution, through canals, water navigation, and different types of watercraft, greatly influenced cost-effective bulk transportation.

Air transport is an activity that allows people, goods and mail to be transported by air. That is why we are talking about air traffic that goes through airports. Aviation is an important enabler of economic growth and development. Air transport facilitates integration into the global economy and provides important connections at national, regional and international levels. It helps create business, promote tourism and create jobs.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presented the conceptual review, theoretical review and empirical review that related literature on transport infrastructure and trade activities. This section also presented the research gaps which this study will fill.

2.2 Theoretical review

This study is based on the New Business Theory of Krugman (1979). The new trade theory in contrast to the neoclassical trade theory, the reasons why trade between two countries does not depend on comparative advantage in the new trade theory. Krugman (1979) developed a model in which countries trade even when there is no comparative advantage, but trade continues to do well. A new theory of trade began to develop because much of international trade is between countries with similar factors. Thus, while the neoclassical theory predicts interindustry trade, the new classical theory predicts especially interindustry trade. Since it often happens that countries with the same factors are located in the same region, greater intra-industry trade usually leads to intra-regional trade as well.

Krugman developed a model where business results from economies of scale within a firm in a monopolistically competitive market structure. Another very important assumption in this model is "love to order" in consumer preferences. In other words, consumers always prefer more varieties of a given product to less. These two open-to-trade assumptions ensure that trade will occur and that it will improve welfare. In short, when a variety opens up for business, production increases because the market is larger and this makes the increased production profitable. Therefore the price of each variety will decrease. At the same time, Krugman emphasizes that the total factor stock and the total market sum of two countries cannot change together. In other words, it is not possible to increase the productivity of all varieties at the same time. However, if fewer varieties are produced with trade than without trade, there is still a positive effect on welfare. First, lower prices due to higher production means that workers receive higher wages. Second, if without trade both countries produced three varieties and with trade four varieties, the

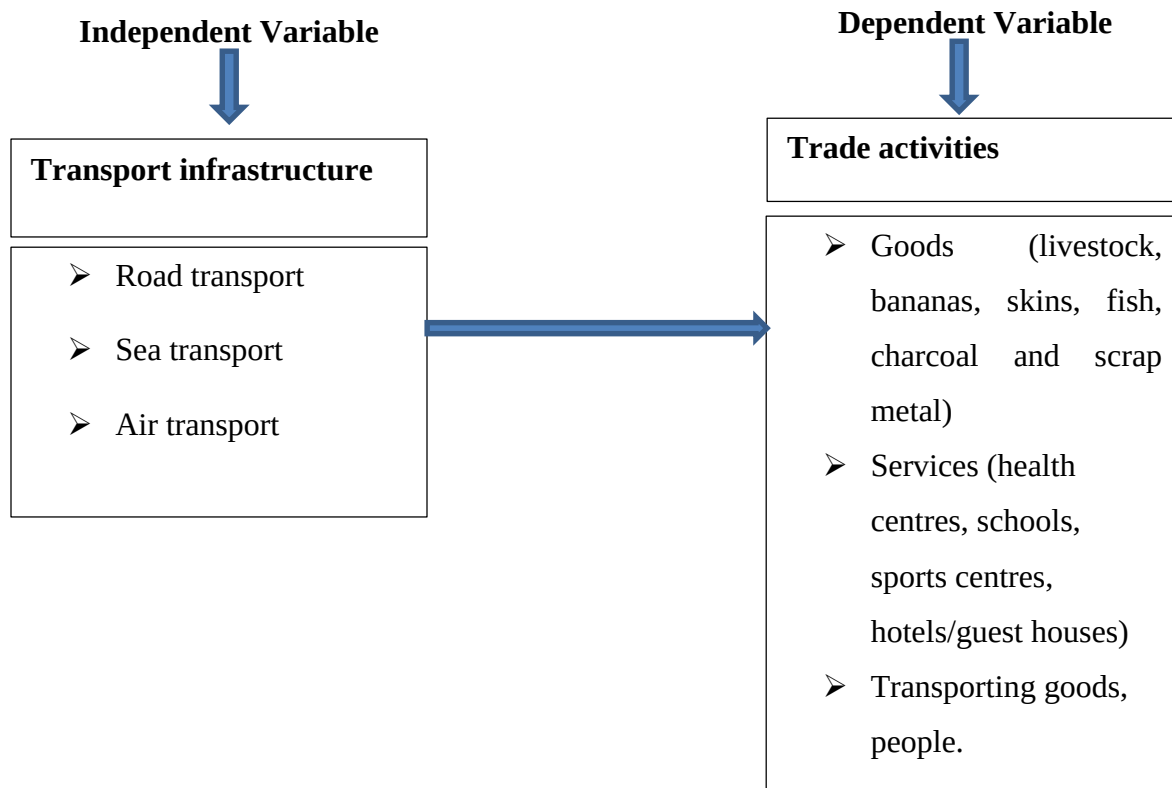
consumer has more varieties to choose from and this increases welfare through the love-diversity effect.

First, Krugman (1979) argued that increases in market size of trade openness do not lead to increasing returns at the firm level. In fact, business only happens because of the effect of the love of diversity. The assumption is that every good is produced in only one country, and the gains from trade come from the world economy producing more varieties than any one country alone. An important addition to this model is the transportation cost of business. These shipping costs are the tip of the iceberg. Another adaptation of the model is that demand by variety is no longer symmetrical because countries differ in market size. Combined with transportation costs, this makes countries want to produce the varieties that are most in demand in their country. Consequently, countries export the product for which there is the highest demand in their own country, the so-called domestic market effect (Muuse et al., 2010).

Evidence on the import and export of goods and services between different countries shows the importance of transport infrastructure as a complement to other factors of production (Hummels, 2009). He argued that this link to cross-border activity would increase economic growth and lower production costs. For example, Hummels (2009) argued that trade experts consider shipping costs to be a barrier to trade because transport services vary in dollars at different small ports. Hummels (2009) further noted that although trade is growing and becoming easier, exports are expanding mainly through reaching new markets with smaller flows, and fragmented production networks are becoming the norm.

Research on transportation infrastructure encouraged other factors in the production process and found that it lowered production costs (Fedderke and Garlick, 2008, p. 5). In addition, transportation infrastructure can also increase the productivity of other inputs in the production process. This view was also echoed by Brooks (2008, p. 1), who argued that effective infrastructure services reduce transaction costs, increase value added and increase potential profitability, increasing and expanding the links of producers to global supply chains and distribution networks.

2.3 Conceptual framework



Source: Researcher, 2023

The conceptual framework shows that the independent variable is transport infrastructure, while the dependent variable is commercial activity. Three types of transport are considered: road, sea and air. Regarding the operation of the store, the study examines goods and services according to the above model.

2.4 Review of related literature

2.4.1 Conceptual review

The conceptual is defined as a concept in terms of operations or techniques the researcher uses to measure or manipulate it. He further argues that conceptual definition forces researcher(s) to discuss abstract concepts in concrete terms. Conceptual definition helps to avoid misconception to the users of a particular study, Based on the above elucidation, the key concepts that have been presented in this study include road infrastructure and economic growth(Shield, 2022).

2.4.1.1 Transport

Transportation is an integral part of the economy that allows people and goods to move from one area to another. The development of transport in Africa is best understood by applying a historical approach. Three eras are distinguished (Tchanche, 2021): pre-colonial, colonial and post-colonial. The pre-colonial period is characterized by poor infrastructure development. The colonial period saw the emergence of isolated regions, cities where the rulers stayed, and suburban and rural areas where most of the indigenous people live. During this period, most of the transport infrastructure was built, and the general planning of cities in some countries still follows the plan drawn up by the colonial masters decades ago. Most of the roads were built around official residences and few connected residential areas and farms. Exploitation of natural resources was one of the main reasons for colonization, and as such, workers and transport infrastructure were also necessary. Then railways were built to transport cotton, rubber, diamonds, gold, etc. from the mines and farms of the mainland to the coastal areas, from where they could be transported to Europe.

The extent and efficiency of transport systems in Africa varies considerably from country to country and from region to region. For example, while Chad has only 60 km of paved roads per million inhabitants, Tunisia, Algeria, Namibia and Botswana have more than 2000 km for the same population (UNECA, On-Line A). Regionally, sub-Saharan Africa (including South Africa) has a population-to-road ratio of less than 500 km, while the corresponding statistic for North Africa is more than 1,000 km (Ibid).

Most of the transport infrastructure in sub-Saharan Africa dates back to the colonial era. This is because governments in the region have made very little, if any, effort to increase the transport stocks inherited from their pre-colonial predecessors. Thus, inter-regional connections are still non-existent. Thus, traveling from one country to another on the continent is problematic at best (Marchant, 2019).

Transport services are essential in any effort to strengthen the position of a country or region in the global economic system. According to Rodney Slater, US Secretary of Transportation under President Bill Clinton, transportation not only has a major impact on globalization, but is the reason why many emerging economies are not doing well in the international global economic

system (Slater, 2018). There are four elements in transport which are roads, ports, railways and airport. According to Slater (2018, On-Line), this is because many emerging economies "are not connected to the main global trade routes - the roads, ports, railways and airports that move the resources that support world growth". To understand the importance of transportation in the current globalization process, it is necessary to understand that the global economy today is fifteen times larger than it was 40 years ago (Ibid) (Marchant, 2019).

2.4.1.2 Infrastructure

Infrastructure, defined as a set of technical structures, equipment and facilities used by households and various productive sectors of the economy and with a long service life, is essential for economic growth and integration. As noted, there is a positive relationship between income levels and the quality of infrastructure across countries. The implicit assumption about the direction of causality shifts from infrastructure to growth, although this issue continues to be debated in the literature. Investments in European cross-border transport infrastructure are seen as creating a true pan-European market, connecting the periphery to the core of the EU, opening European markets to candidate countries and generally promoting social cohesion and social cohesion. job creation The argument to increase investment in transport infrastructure (both domestic and cross-border) to reduce business costs is one of the most common in the literature. In developing countries, the lack of adequate infrastructure accounts for at least 40 percent of transport costs, indicating the need to improve the quantity and quality of existing infrastructure to promote value-added trade. In addition, the benefits of investment in transport infrastructure are enumerated: it increases well-being by saving time and facilitating contacts and movement, expands the size of the market for labour, goods and services by reducing transport and communication costs, and allows the exploitation of economies. of scale because agents can choose their location more freely (Cárcamo- Diaz and Goddard, 2017).

As a definition of infrastructure, the most common term for infrastructure is the material foundation, which comes from the Latin word *infra*, meaning below. Most modern discourses define it as "the basic foundation or framework of a system or organization." In public discourse, this underlying foundation usually refers to the material aspects of civil engineering, such as roads and bridges. In workplace discourse, it often refers to the material aspects of IT, such as hardware, software and networks. However, infrastructure has also been developed as a

theoretical construct in the fields of economics, information technology and information science, among others. Because the general concept of infrastructure is so strongly tied to economics, it is useful to see how economists have developed the concept. In economics, it usually meant something close to the general definition: "the necessary economic and organizational base (transportation network, workforce, etc.) of a highly developed economy" (Lue, 2019)..

Poor transport infrastructure or inefficient transport services result in higher direct transport costs and longer delivery times. Improving the country's infrastructure can have a significant impact on the cost of doing business. A study by Limão and Venables (2021) shows that if the infrastructure of a country were to improve so that a country would move from the middle (middle) of 64 countries to the top 25% of those countries, it would reduce traffic. costs 481 kilometers of land travel and 3989 kilometers of sea travel. It would also increase cargo volumes by 68 percent, which equates to being 2,005 kilometers closer to other countries. Inefficient transport services are also associated with higher total transport costs (Services, 2022).

Lack of infrastructure is a major obstacle to economic growth and development in many poor countries. Especially in sub-Saharan Africa, only 16 percent of roads are paved and less than one in five Africans have access to electricity. Transport costs are the highest in the world and significantly limit the growth of trade. In Rwanda, farmers receive only 20 percent of the price of their coffee when it is loaded onto ships at Monbasa; the other 80 percent is lost due to the cost of bad roads (and bureaucracy) between Rwanda and Kenya. To alleviate these limits on growth and poverty reduction, several observers recommended a large increase in public investment in infrastructure along the lines of the "Big Push" vision of Rosenstein-Rodan (1943). 1 The general argument is therefore that infrastructure services have a strong pro-growth effect through their impact on production costs, private sector input productivity and the rate of return on capital - especially when the stock of infrastructure assets is initial. are relatively low. However, recent studies have highlighted that infrastructure can also affect economic growth indirectly through several channels, particularly by affecting health.2 Access to clean water and sanitation services improves health and thus productivity. By reducing the cost of boiling water and reducing the need to use smoky traditional fuels (such as wood, crop residues and charcoal) for cooking, the availability of electricity also helps to improve hygiene and health - in the latter

case by reducing the use of indoor spaces. premises air pollution and respiratory diseases (Agénor, 2023).

Infrastructure The term "infrastructure" usually means physical resource systems prepared by humans for public use. A list of known examples includes: (1) transportation systems such as highway systems, railroads, airlines, and ports; (2) communication systems such as telephone networks and postal services; (3) administrative systems, such as legal systems; and (4) basic public services and facilities such as schools, sewage and water systems. In any case, Africa has the slightest created foundation with noteworthy most elevated fetched of related administrations, which significantly offsets the competitive advantage of Africa's commodities.

2.4.1.3 Goods of Trade

A commodity can be defined as a physical object that is usable and thus transferable between economic units. to the conditions. Most of the objects of ordinary human experience can be commodities, because it is not easy to think of tangible objects that cannot be assimilated. Objects that cannot be goods are mostly those that are beyond human experience or control; for example, extraterrestrial objects or other extreme microorganisms or particles (T.P. Hill, 1977). Trade is estimated at nearly \$25 trillion (about 10 percent more than in 2021). In the third quarter of 2022, the value of world trade in developing and developed countries was significantly higher than in the third quarter of 2021. Trade between developing countries (South-South) was about 13 percent higher than in the same period in 2021. South-South trade excluding East Asian economies grew by 19 percent (Asian et al., 2022).

As defined by Marad (2022), entrepot commerce is the importation of products into one nation and their exportation to another. In this case, products are imported for re-export to a third nation rather than for consumption or sale. Thus, enterprise commerce refers to the import of commodities from abroad with the intention of exporting them. Foreign commerce is regulated by the government in every nation. It permits imports, and exports have the power to sway the choices of nations with which commerce occurs.

2.4.1.4 Services of Trade

In developing nations, services are essential to economic development and employment growth, but their impacts differ from those of industry or agriculture (Hoekman & Willem Te Velde, 2017). Value chain organisation is becoming a more important factor in explaining changes in trade patterns than shifts in consumption patterns alone. Services both directly contribute to productivity development and the transformation of economies in emerging nations, as well as by "embedding" value added into other industrial inputs.

The initial focus of our examination is on the relative significance of services in the overall trade performance of low-income countries (LICs). It is worth noting that the share of trade in services has witnessed a notable increase in LICs over the past few decades. Subsequently, we delve into the role of services in the overall productivity change, which is measured by the alterations in value addition per employee. Our findings suggest that services have been the primary contributors to aggregate productivity change in LICs since 1991 in many instances. Consolidating these findings, we establish a positive correlation between the growth of service exports and aggregate productivity change. Consequently, trade in services is assuming an increasingly crucial role in the economic transformation of LICs, as previously defined in this paper, by supporting exports, driving productivity change, and facilitating value chain development. Our analysis reveals that exporting firms in the services sector exhibit a 28% higher productivity compared to non-services exporting firms. The integration of services into value chains introduces an additional layer of complexity that is pertinent to trade policy considerations (Suryavanshi, 2020).

According to Hill, (1977) Consider a series of examples of different kinds of services-the shipment of goods by a transport firm; the repair of a vehicle or redecoration of a house; the cleaning of a house by a servant. What is the common factor shared by all these two kinds of service and goods that enables them to be readily identified and classified as services? In examples of services affecting goods are the transportation of goods, postal deliveries, repairs, cleaning and maintenance. In each case goods which already belong to some economic unit are transformed in some way as a result of the activity of the producer unit. Normally, the two economic units are different from each other, but the production of services on own account is always a real possibility; for convenience of exposition, however, it will be assumed that the

producer and consumer are different economic units, as this is the typical case. Transformations of goods must be physical in nature, so that the production of services affecting goods consists of processes of physical transformation which are not intrinsically different from those used to produce goods.

Openness,(1995) (1995), assert that services are the fastest growing sector of the world economy, and over the past decade, trade and foreign direct investment in services have grown faster than goods. Services include such diverse activities as freight and passenger transportation, financial intermediation, communications, distribution, hotel and restaurant, education, health care, construction and accounting. Unlike business, services are often intangible, invisible and perishable, and usually require simultaneous production and consumption. The need for proximity between consumer and producer requires in many cases that one of them moves to enable international trade..

2.4.2 The effect of road transport on trade activities

Roads dominate traffic in most African countries, carrying 80 to 90 percent of passenger and freight traffic. In addition, they are the only way to access most rural communities. This predominance is achieved despite the fact that the network density of the region, both per person and per square kilometer of land, is lower than other regions of the world. The condition of the road system is poor even by international standards. However, the per capita tax burden of the road network is relatively high - due to the combination of low population density and low gross domestic product (GDP) per capita. In these difficult circumstances, obtaining reliable funding for road maintenance and effective implementation of maintenance is critical to the efficiency of the sector. Although reforms in both sectors over the past 15 years have improved performance, much remains to be done. In addition, road use must be efficient. Unfortunately, there is still a lot of work to be done in this area as well. Road freight transport is heavily cartelized and controlled and generates high profits despite high costs. Road passenger transport - especially in urban areas - has suffered from harmful price regulation, so that most services are now provided by the informal sector, which is largely self-regulated (Gwilliam, n.d.).

The generally accepted view is that there is a relationship between the number of vehicles per capita and wealth with gross domestic product (GDP) or, more precisely, income per capita (Pojani and Stead, 2023). High incomes are likely to encourage the purchase of household vehicles. However, incomes in developing countries are generally low compared to those in developed countries. In developing countries, more than 70% of journeys are made on foot and sometimes by animal carts. This reality must be taken into account when planning roads (Tchanche, 2021).

In East Africa, despite the creation of the East African Community (EAC), 80% of trade flows originated or ended outside the region. Mombasa is the region's main port, handling more than 13 million tonnes of cargo annually and serving Kenya and Uganda, as well as Burundi, the Democratic Republic of Congo and Rwanda via the northern route. Dares Salaam's main road is a contrast to Zambia and the Democratic Republic of Congo. South Africa has four major trade routes: the main route from Durban, the North-South Corridor, is a regional trade route connecting Zambia, southeastern Democratic Republic of Congo, western Malawi and Botswana, Zimbabwe and South Africa (Gwilliam, n.d.).

Roads are the main transport sector in most African countries, carrying 80-90% of passengers and vehicles. According to the World Bank, about \$200 billion of African trade is transported through the region's main road network, which includes strategic trade routes connecting deep sea ports and rural economies. Most rural areas in Africa are entirely dependent on roads for connectivity. However, the road network per capita and per square kilometer of land in Africa is less dense than in other regions. Road transport is the dominant transport mode in the region, accounting for more than four-fifths of all vehicles and passengers in sub-Saharan Africa, reflecting the limited number of rail routes in the country (David et al., 2018).

According to Africa Review (2019), road transport is the most important mode of motor transport on the African continent, accounting for 80% of passenger vehicles and 90% of passenger cars. Although the road-to-population ratio for the country as a whole is 26 kilometers per 10,000 inhabitants, there is considerable variation between sub-regions. Most African countries face high costs associated with transport. On average, Africa's transport and insurance costs to foreign markets account for 30% of the total value of exports, this compares poorly with 8.6% for all developed countries. While most countries face the problem of high transportation

costs, landlocked countries face the problem of land transportation costs. 1.2 million people die worldwide from traffic accidents. Of these, more than 225,000 (19%) died on African roads. In addition, Africa has the highest number of traffic accidents per capita. Approximately 85% of total transport sector energy consumption occurs in developing countries, with the remainder of transport sector energy consumption shared by rail, sea and aviation. Much of Africa's road transport capacity can be attributed to old and inefficient vehicles.

David et al. (2018) assert that there is a close relationship between the process of economic expansion and the development of infrastructural networks. Transport infrastructure links areas of industry and consumption and promotes commerce and economic integration. The Trans-African Highway road network, which is made up of nine groupings of road linkages serving various subregions of the continent, is given top priority. The sections, which connect 15 landlocked nations with enhanced regional ties and sea access, go from Cairo to Dakar, Tripoli to Windhoek, and Lagos to Mombasa. One of the top financial institutions that has made regional integration the core of its activities is the African Development Bank. The growth and integration of the continent are given top importance by the bank. At the behest of the NEPAD Heads of State Implementation Committee, it has taken on a leadership role for regional infrastructure, banking, and financial norms, which has bolstered its activities in recent years. According to the New Partnership for Africa's Development (NEPAD), regional integration and infrastructure are key components of economic growth and poverty alleviation across the continent. Building markets, developing strong and varied economies, expanding development prospects, and drawing in new investment funding sources all depend on regional integration.

2.4.3 The effect of sea ports transport on trade activities

Africa's international trade and marine infrastructure are highly dependent on one another. According to estimates, 90 percent of Africa's foreign trade is handled via maritime means; this is equivalent to international norms. Approximately 80% of global trade and two thirds of energy supplies are transported by sea, according to UNCTAD. Africa boasts a coastline of 30,725 km, with over 90 main ports and several smaller ports offering fishing and tourism services (David et al., 2018).

Compared to other ports worldwide, the majority of the ports in Africa are tiny. Very few are able to handle the biggest ships. African ports are often underproductive, ill-equipped, and unprepared for the swiftly changing international commerce and shipping trends. Comparing them to ports in other areas, they nevertheless lag behind in the development of contemporary port-management structures, even if they are gradually transitioning from public ownership and operation to the landlord port management model (Gwilliam, n.d.).

Only a few international ports handle significant cargo quantities due to the scarcity of suitable locations for deep water ports, which cause lengthy wait times at the ports. The lack of proper infrastructure in African sea ports limits the region's ability to compete, as 80 percent of global trade is carried out through sea ports connected to road and rail networks. Africa's marine infrastructure needs more innovation and improvement as a result of the anticipated rise in seaborne trade in the area (David et al., 2018).

95% of global trade is thought to travel by water, either entirely or in part (Farthing and Brownring, 1997; Michaelowa and Krause, 2020). The seaborne commerce between the Far East and Europe is growing at an alarming rate, indicating a radical shift in global commercial patterns. According to Harding et al. (2017), ports are under increasing pressure to provide more and better infrastructure, more dredging, and a significant boost in efficiency as global trade patterns change. Turnaround time at ports has grown in importance as a determining factor for shipping lines when choosing which port in the globe to call at (Harding, Pálsson, & Raballand, 2022). Studies have indicated that ports play a crucial role in enabling the smooth and economical transportation of cargo in contemporary international logistics networks. Due to their crucial roles in international supply chains, they face growing pressure from shippers, who are influenced by the rising demands of their own clientele. The advantages that shippers receive from efficient port operations and clearance procedures are immeasurable, and as a result, numerous shipper expectations have been placed on ports and the organizations responsible for running them. Better on-time performance, increased document correctness, more in-transit visibility, and improved information flows are a few of these needs (Caesar, 2011).

When it comes to transporting freight into and out of Africa, maritime travel dominates. More than 92% of all trade with Africa is through it. Africa has a total coastline length of 30,725 km. It is home to 90 major ports as well as several smaller ports that offer fishing and tourism services.

Merely 6% of worldwide traffic is handled by African ports, out of which around 6 ports—3 in South Africa and Egypt and 1 in Egypt—manage 50% of the continent's container traffic. Africa is also blessed with a large number of lakes and rivers that have the potential to be low-cost, low-energy, and environmentally beneficial inland waterways. There are navigable bodies of water in twenty-nine African nations, but few of them have been extensively exploited for transportation services (UNESCO, 2019).

2.4.4 The effect of Airport Transport on trade activities

Rodrigue & associates (2019). A facility, either on land or in the water, where aircraft may take off and land, is an area of land or water that is used or planned to be utilized for the landing and takeoff of aircraft. It comprises its structures and facilities that are typically used by conventional, fixed-wing aircraft. comprises of hangars, hard-surfaced landing strips, a control tower, and passenger and freight cabins. a runway that airplanes often use to land and take off people or goods. Travel is made easier by air travel, which is an essential component of global trade. Globalizing supply chains and related investment has increased trade flows by lowering transportation costs and enhancing connectivity (David et al., 2018).

An essential component of the globalization of transportation networks is air travel. Of the energy used for transportation, 8% comes from the aviation sector. Because of its high speeds, air travel uses a lot of energy. Fuel makes around 13–20 percent of overall costs, making it the second most significant expense for the aviation sector. This equates to around 1.2 million barrels daily. Every new generation of aircraft has seen a constant improvement in energy efficiency due to technological advancements such improved aerodynamics and efficient engines (Rodrigue et al., 2019).

The performance of the aviation sector in Africa is not up to par with the global average. The African Development Bank (AfDB) estimates that air travel may contribute to an economy's growth at a rate that is more than seven times that of road travel. Despite the fact that there are more than 4,000 airports and airfields throughout Africa, many of them do not adhere to the criteria and suggested procedures set forth by the International Civil Aviation Organization (ICAO). Furthermore, only 25% of these airports have runways that are asphalt. The development of intra-African air travel has been restrained mostly by inadequate infrastructure

and in part by the absence of an appropriate liberalization strategy among African countries. The African aviation sector has a number of obstacles, such as inadequate airport infrastructure, a shortage of people and physical resources, insufficient connection, and a lack of transit facilities. Although Africa's portion of the global aviation sector is still relatively tiny in comparison to other areas, the International Air Transport Association (IATA) says that it supports 6.8 million employments and adds US\$ 72.5 billion to the continent's economy (David et al., 2018).

Policymakers, among others, proposed the notion of liberalization and deregulation to enhance the smooth process of globalization and bring competition into the market (Cullinane and Song, 2012; Chauduri, 2013). As a result, market forces—rather than regulators—now decide how commerce flows. Notteboom (2014) pointed out that the removal of trade obstacles brought about by market liberalization and deregulation has aided global commerce. Different strategies used by nations to control markets, safeguard their citizens and local businesses, and discriminate against imports in favor of native goods are known as trade barriers (Pollard et al., 2003). According to Caesar (2011), the most prevalent ones are tariffs, quotas, subsidies, and dumping.

2.5 Gap in Literature

Analyzing the conceptual and theoretical foundation for the study was the first step in this investigation. It evaluated research on the relationship between transportation infrastructure and economic growth and emphasized trade activities as inputs for the development of transportation infrastructure. Based on actual data from several studies conducted globally, it was determined from the review that there is a connection between trade activity and transportation infrastructure. There is lack of improved transport infrastructure on trade activities in local communities in Kismayo, such as employment generation, income distribution, and overall quality of life improvements. Exploring the role of informal trade networks and markets in Kismayo, which often operate outside formal regulatory frameworks but significantly contribute to local economic activities.

Consistent with the findings of Estache and Garsous (2012), the majority of research projects carried out by Harris, Wang, & Wang, 2015, Kumo 2012, and Pradhan & Bagchi, 2013 focused on the impacts of infrastructure development on growth and productivity. The primary finding

was that major long-term commercial operations are significantly facilitated by infrastructural development in Africa. It was also determined that infrastructure stocks and services have a good impact on trade operations in developing nations. Overall, the results showed a relationship between trade activity, infrastructure stocks, and the caliber of infrastructure services. Deficiency of Infrastructure Planning and Investment studying future trends in infrastructure planning and investment in Kismayo, particularly focusing on the prioritization of transport projects and their potential impact on trade growth and economic development.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The analytical framework used for the investigation was presented in this chapter. By outlining the topic area, research design, data collecting process, data analysis, and, ultimately, research quality, it emphasized the technique that this study used.

3.2 Research design

Analyzing the impact of transport and trade infrastructure in the Kismayo region of Somalia, this study adopted a descriptive research design. The choice of a descriptive research design for analyzing the impact of transport and trade infrastructure in the Kismayo region of Somalia is justified by its suitability for providing a comprehensive overview and understanding of the current situation. Descriptive research allows for the systematic collection and analysis of data to describe the characteristics of a phenomenon or situation. In the context of this study, such an approach enables the researchers to document and analyze the existing transport and trade infrastructure in Kismayo, including port facilities, road networks, customs procedures, and telecommunications systems, without manipulating variables or imposing interventions (Creswell, 2018). This design was chosen because it appears to be the best way to achieve our goals. Research design helps researchers plan and conduct a study in a way that achieves the desired results, thereby increasing the chances of obtaining information about the characteristics of the world (UNISA, 2001). According to Igwenagu (2016), research methodology is a systematic set of methods used in research in describing the conduct of research and analytical methods. An integrated (triangular) approach was used, i.e. qualitative and quantitative methods of data collection were used to complement each other. Quantitative methods were used for data collection and analysis and general information about the project was collected from the various stakeholders in the study. Qualitative methods provided in-depth descriptions, while quantitative methods provided the data needed to test hypotheses.

3.3 Target Population

According to UNISA (2001), the population under study is the aggregate or totality of all objects, subjects, or members that meet a certain set of requirements. According to the available documents from Ministry of Public Works in Somalia Kismayo district management has 265 employed staff who in this research was our target population. Because of costs, time and additional restraints, the researcher will use a sample of the population in the study. The target from the ministry of public works, Somalia MoPW, Somalia infrastructure fund, Somalia urban resilience project phase these respondents was Kismayo district.

3.4 Sample size

Determining the number of observations or repetitions to include in a statistical sample or sample size. The mathematical calculation of the number of participants or units to be included in a research is known as sample size determination (Kaur, 2017).

The study used Sloven's formula to estimate the sample size of the respondents. Sloven's

formula states: $n = \frac{N}{1+N(\alpha)^2}$

Where; **n** = sample size; **N** = target population; and **α** = 0.05 level of significance

$$n = \frac{265}{1 + 265(0.05)^2}$$

$$n = \frac{265}{1 + 265(0.0025)}$$

$$n = \frac{265}{1 + 0.66}$$

$$\mathbf{n = 160}$$

3.4.1 Quantitative Sample

Table 3.1: The selected sample size for Quantitative

Category	Target population	Sample size	Sampling Techniques
Staffs and same of the local traders in kismayo districts.	249	144	Random sampling
TOTAL	249	144	

Source: Primary Data, 2023

3.4.2 Qualitative Sample size

Category	Target population	Sample size	Sampling Techniques
Officers from The ministry of pub works-Somalia (MOPW)	4	4	Purposive sampling
Officers from Somali infrastructure fund	4	4	Purposive sampling
Officers and engineers Chongqing overseas construction corporation	4	4	Purposive sampling
Supervisors and techical workers	4	4	Purposive sampling
Total	16	16	

Source: Primary Data, 2023

The sample size for Quantitative is 144 with combined together for 16 sample sizes for qualitative.

3.5 Sampling Techniques

The study employed probability and non-probability sampling techniques. Each citizen of Kismayo district lower juba Somalia has an equal opportunity of being selected to be included in the study. Probability sampling techniques provide reliable and better estimate of the respondents this helped to ensure that the sample is representative of the larger population and reduced potential bias in the data collected while non-probability sampling techniques were not rigorous as simple probability sampling in terms of representativeness and generalizability, they can still provide the researcher valuable insights and suitable for specific research study design.

3.6 Source of Data

In this section the researcher provides that source of data are data that is already collected and the data that was collected during study.

3.6.1 Primary data

A primary data source provides firsthand evidence that the data was collected from the field by using the difference methods of collecting data instruments such of interview, observations and questionnaires which gave to the respondents. The primary data are always authentic and were obtained by the researcher or investigator directly from the respondents. This was accomplished by first ascertaining the total number of respondents and then physically visiting them to obtain their consent to have them respond to the questionnaire's predetermined questions. This was accomplished by using both random and non-random sampling techniques on the respondents who were initially chosen and subsequently contacted.

3.6.2 Secondary data

This secondary data source it's a secondhand or existing data which collected another person or investigator that came from to answer the question and this type of data has already collected and completed. The researcher sourced by reviewing of documented resources as newspapers, government's reports, journals, reports from organizations, publishing on the internet, periodicals, and presentations. In order to prevent bias, the investigator does this in order to first determine the information that is already available on the research problem and to gauge the respondent's level of knowledge on the study topic.

3.7 Data collection instruments

Data collection is a systematic process that collects data from the field and the instruments that we use is questionnaire and interview:

3.7.1 Questionnaire

A questionnaire is a research tool that consists of a set of written or printed questions and possible responses. It is intended to be completed by respondents and is used to gather data from recipients. It comprises of a predetermined list of questions on a form that are mailed or personally handed to the respondents together with a form that has the questions in a predefined sequence. In this study, the questionnaire respondents included owners or proprietors of trade activities that is with goods businesses and services as indicated in the conceptual framework.

3.7.2 Key Informant Interviews

An interview is a direct, in-depth discussion between the interviewer and the responder that is used as a data collecting tool. In order to gather information and data for a survey, study, or other reason, one-on-one interactions between the two parties are conducted. Using oral-verbal stimuli and oral-verbal replies for presentation and reply, the researcher employed this strategy. Because they provide a two-way information exchange—the interviewer learns about the respondent, and the respondent learning about the interviewer's questionnaire requirements—they were regarded as one of the greatest instruments for gathering data. And the interview was personal or telephonic interview. The study interviewed Officers from the ministry of public works-Somalia (MOPW), Officers from Somali infrastructure fund, Officers and engineers Chongqing overseas construction corporation (COCC), Supervisors and local traders.

3.8 Validity and Reliability of Data

Two factors that enhance the quality of the questionnaire are validity and reliability:

3.8.1 Validity

According to UNISA (2001), validity is a measure of the veracity or untruth of the data collected using the research instrument. The degree to which a measure truly measures what it is supposed to measure is known as its validity. When evaluating a questionnaire, there are several types of

validity to consider, such as construct validity, face validity, content validity, statistical validity, ecological validity, and internal and external validity (Rozali et al., 2022). My supervisor examined the study's instruments (questionnaire and key informant interviewee guide), ensuring that the construct validity and content were met. Following the questionnaire's evaluation, the appropriate modifications were made while keeping the study's objectives in mind. The following formula was utilized to determine the instrument's validity:

$$CVI = \frac{\text{no of items declared valid}}{\text{total no of items}}$$

A CVI was acceptable if it is above 0.7 (Amin, 2005). Rating used in the formula are presented in the following table.

Table 3.2: Validity of questionnaire

Raters	Items rated relevant	Items rated not relevant	Total
Rater	29	8	37
Rater	23	14	37
Total	52	22	74

Thus, applying the formula $CVI = \frac{52}{74} \approx .8125$

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The CVI of the findings was .8125, and because it was above 0.7 as advised by Amin (2005), the instrument was deemed genuine and could be relied upon to yield reliable results.

3.8.2 Reliability

The consistency or reproducibility of a result is referred to as reliability. Internal consistency, or the extent to which groups of items on an instrument act consistently, is the most significant kind of dependability for multi-item instruments. This is significant because the items on your instrument scale should have appropriate intercorrelations as they should be evaluating the same underlying construct (Amin, 2005). Cronbach's alpha (α) values, which vary from 0 to 1, are used to measure the internal consistency of a scale. Optimal values fall between .7 and .9 (Rozali et al., 2022). The two most used reliability tests to assess the internal consistency of scales—which gauge how much groups of items behave similarly—are factor analysis and Cronbach's alpha. The average and quantity of elements affect Cronbach's alpha. Consequently, strong dependability was indicated by a high Cronbach's alpha value. It also suggested that the

responses can have an impact on one another since the respondent would strive to be consistent by remembering their prior response. A low number, on the other hand, may suggest poor dependability, which was also seen to mean that the constructions weren't being measured (Creswell & Creswell, 2018).

Table 3.3: Reliability of variables in questionnaire

Variable	Alpha crombach	No. of items
Road transport	.749	12
Sea transport	.712	6
Air transport	.703	5
Trading activities	.734	14

The alpha coefficients exceeded Amin's (2005) suggested threshold of .70. The questionnaire was therefore appropriate for gathering data.

3.9 Data analysis

After collecting the data, the researcher used different methods to analyse it. The data got using the questionnaire was, sorted, coded and entered into the statistical package for the social scientists (SPSS) version 15.

The data was analyzed and the study's conclusions were evaluated using the statistical package for social scientists, or SPSS. This study used a variety of statistical techniques, but the most common one was descriptive and inferential statistics, which summarize sample statistics as they are assessed in questionnaire formats. These metrics include relationships, mean, standard deviation, frequency, and percentages for various tolls. Descriptive and inferential statistics are those that are summarized and contain average scores as well as their average deviance.

Analysis of the frequencies and descriptive statistics of respondents in each of the demographic categories—age, sex, marital status, cost of service, and education—was used to create the sample demographics. When it came to data analysis, the data was generally arranged both chronologically and categorically. The second quantitative data sets are assembled, assessed, and condensed via the use of methods like tabulation, relevant statistical graphs, charts, and percentages.

Data in form of recorded interviews from key informants were analyzed using interpretational analysis, a process by which sense and meaning are made of the data gathered in qualitative research. First, the interviews were transcribed and following immersion into the data, it was analysed thematically (Castleberry & Nolen, 2018). Through thematic analysis, common patterns in the data were analysed and the data separated into different groups according to found similarities or themes, in line with the study objectives.

3.10 Limitation of the study

There were problems of collecting data from the respondents although some of them did not understand the language and translation was needed. Also, it was difficult to gauge the community members' sentiments since, presumably for reasons of secrecy, several participants in the focus groups refrained from speaking throughout the talks.

There was also a resource limitation when the researcher was collecting data and, transportation was also a problem due to the distance to some areas. Despite the restricted resources, the researcher made an effort to ensure that the whole questionnaire was administered at a convenient time.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

The findings in this part were discussed in relation to the goals of the research project. Following the data input phase, SPSS software was used to collect the data, which was then examined in light of the study's objectives. The research objectives were: To examine the effect of road transport on trade activities in Kismayo district, to determine the effect of sea transport on trade activities in Kismayo district, to analyses the effect of air transport on trade activities in Kismayo district and how it can be effective in trade activities.

4.1 Response rate

The response rate of a survey is a measure of how many people approached, 'sampled' actually completed the survey (expressed as a percentage from 0% to 100%). It is usually assumed that the higher the response rate, the more likely the results are representative of the population, provided the sampling is appropriate in the first place and that people who don't respond are roughly the same in their opinions as the people who do respond (Am J Eval, 2018).

Table 4.1: Response rate

Questionnaires distributed	Questionnaires returned	Response rate
160	150	$\frac{150}{160} * 100\% = 93.75\%$

Source: Primary Data, (2024)

The table above indicates that out of 160 questionnaires distributed, only 150 of them were returned and this implies that the response rate was 93.75% which is relatively good. This implies that the response rate was high. However 10 respondents with a response rate of 6.25% didn't return the questionnaires due to some unbearable circumstances. While an 89.2% response rate is indeed relatively good, it's crucial to acknowledge the 10.8% of respondents who didn't return the questionnaires.

These 43 individuals may have faced circumstances beyond their control that prevented them from participating, such as illness, personal emergencies, or logistical issues. It's essential to consider the reasons why these respondents couldn't participate before making any judgments about the response rate.

4.2. Demographic Characteristics of the Respondents

The respondents in this study were categorized based on their job experience, gender, age range, education level, marital status, religion, and category of employment. In every instance, participants were requested to disclose the details of their individual profiles so that the investigator could categorize them appropriately. The researcher used a closed-ended questionnaire to collect data on the participants' personal profiles. The results were then evaluated using frequency and percentage distributions, which are shown in table 4.1 below.

4.2.1 Gender of respondents

Table 4.2: Showing the Gender of respondents

Variables	Frequency	Percent
Male	100	66.7
Female	50	33.3
Total	150	100.0

Source: Primary data, 2023

According to Table 4.1's data, 50 (33.3%) of the respondents were female, and 100 (66.7%) of the respondents were male. This is due to the fact that Kismayo, Somalia's transportation system mostly operates in a remote area of the country. Given their access to social media, advantages of living in a city, and family ties, many women are unwilling to labor in Kismayo's distant areas. This demonstrated the need of obtaining trustworthy data for the conclusions. In Kismayo, men employees now make up the majority of the transport workforce. This suggests that men predominated in the sample, which allowed the researcher to collect data efficiently.

4.2.2 Age Bracket

Table 4.3: Showing the Age Bracket of respondents

Variables	Frequency	Percent
18-30 Years	31	21%
31-40 Years	27	18%
41-45 years	49	33%
46-50 years	34	23%
51 and above	9	6%
Total	150	100.0

Source: Primary data, 2023

The study's age-branching results also revealed that, of the respondents who were contacted, 31 (21%) were between the ages of 18 and 30; 27 (18%) were between the ages of 31 and 40; 49 (33%) were between the ages of 41 and 45; and 34 (23%) were between the ages of 46 and 50. Six percent of the respondents were 51 years of age or older. This represents the remaining proportion of respondents. Most of the responders were, on average, between the ages of 41 and 45. The findings suggest that most of the participants were of a mature age and have a sufficient and critical comprehension of the evolution of infrastructure. Age may indicate experience and a crucial comprehension of topics, providing the researcher with a means of gaining experience and unquestionable data.

4.2.3 Job Description

Table 4.4: Showing the Job Description of respondents

Variables	Frequency	Percent
Border Guards	36	24.0
Customs Officials	81	54.0
Port Operators	33	22.0
Total	150	100.0

Source: Primary data, 2023

The job positions of officers in Kismayo's transport infrastructure were observed, as indicated by the results above. Based on these observations, the researcher was able to determine that the majority of these officers—81, or 54%—were Customs Officials, who made it possible for the researcher to gather pertinent data on the occurrences of trade activities. The port operators, on the other hand, made up the minority—33, or 22%. Furthermore, the study found that 36 border guards, or 24% of the total, contribute to the improvement of commercial operations at the harbor. This indicates that most employees at the harbor were sufficiently aware of the controversies involving commercial activity.

Results from the interview where the researcher interacted with customs officials, and this is what he mentioned:

“Trade activities instances are more practiced by those importing at times illegal goods, this is always not observed by the transport infrastructure”.

4.2.4 The Education of respondents

Table 4.5: Showing the Education of respondents of respondents

Variables	Frequency	Percent
Diploma	56	37.3
Degree holders	64	42.7
Masters	30	20.0
Total	150	100.0

Source: Primary data, 2023

In terms of education, the majority of the personnel consists of 64 degree holders (42.7%), followed by 56 diploma holders (37.3%), and 30 masters holders (20%). This suggests that the majority of educated people (those with degrees) are aware that trade scandals involving Kismayo's transportation infrastructure occurs frequently enough. The research took use of the chance to speak with experts about the methods they employ to conduct trade operations, which improved the results.

4.2.5 The Working period of respondents

Table 4.6: Showing the Working period of respondents of respondents

Variables	Frequency	Percent
1 – 2 years	9	6.0
3 - 5 years	48	32.0
6 - 8 years	61	40.7
9 and above	32	21.3
Total	150	100.0

Source: Primary data, 2023

According to Table 4.6 above, the plurality of respondents—61, or 40.7%—had served for six to eight years. Additionally, respondents with three to five years' worth of work experience were represented by 32%, while the least number had only worked for one to two years. This suggests that they are in possession of information on commercial activities using the transport infrastructure in Kismayo.

4.3 Effects of road transport on trade activities in Kismayo district, Somalia

The first objective of the study was to identify the impact of road transport on the trade activities in Kismayo district, Somalia.

First talk about the roads in Kismayo. How do these roads look like, how many key roads are there? How many highways for example?

The items displayed the average response from the participants for each question on the impact of road transportation on trade activity performance in Somalia's Kismayo area. The five-point Likert scale was used to score each item, with the options being strongly disagree, disagree, agree, disagree, and not sure. Table 4.2 following presents the results:

Table 4.7: descriptive statistics of the effects of road transport on trade activities in Kismayo district, Somalia

	Statement	Mean	Std Dev	Response mode	Interpretation
B1	The quality of road infrastructure in Kismayo impact the volume of trade activities in the region	4.74	2.01	Strongly agree	Very high
B2	The efficiency of road transport services influence the timeliness and reliability of goods delivery in Kismayo	4.65	2.10	Strongly Agree	Very high
B3	Improved road infrastructure contributes to the reduction of transaction costs for traders in Kismayo	4.31	2.02	Strongly agree	Very high
B4	Road transport facilitates cross-border trade and regional economic integration in Kismayo.	4.45	2.71	Strongly agreed	Very high
B5	The availability and accessibility of road transport influences the establishment and growth of small businesses engaged in trade in Kismayo	4.01	2.70	Agree	High
B6	Road transport accessibility influences the establishment of new markets and trading routes in and around Kismayo.	4.39	2.06	Strongly agree	Very high
B7	Road transport contributes to the cultural exchange and diversity of goods in the Kismayo district	4.21	2.30	Agree	High
	Average mean	4.39	2.27	Strongly Agree	

Source: Primary Data, (2023)

According to the study finding in table 4.2 on the effects of road transport on trade activities in Kismayo district, Somalia revealed that, the quality of road infrastructure in Kismayo do impact the volume of trade activities in the region and had a mean of (mean=4.74), standards deviation of 2.0, the response mode was strongly agree and was interpreted as very high. This implies that proper planning of road transport right from regional, district and community level are strengthened the capacity and success of the trade activities, Somalia.

Based on the research results shown in Table 4.7 on the effects of road transport on trade activities in Kismayo district, Somalia indicated that the efficiency of road transport services influence the timeliness and reliability of goods delivery in Kismayo results were presented with (mean= 4.65) and standards deviation of 2.10, response mode was strongly agree and was interpreted as very high. This implies that success and achievements progress was tracked across all areas and also given enough time with aim of completing all the activities. Also based on the study findings in table 4.2 on the effects of road transport on trade activities in Kismayo district, Somalia revealed that does improved road infrastructure contribute to the reduction of transaction costs for traders in Kismayo, this was shown as having a mean of 4.31 and a standard deviation of 2.02, indicating a highly agreed response mode that was considered to be quite high. This suggests that road infrastructure may be used as a means of bridging the gap that exists between development operations and commerce.

According to the study finding in table 4.7 on the on the effects of road transport on trade activities in Kismayo district, Somalia indicated that does road transport play in facilitating cross-border trade and regional economic integration in Kismayo had a (mean=4.45), standards deviation of 2.71, response mode of strongly agree and was interpreted as very high. This suggests that scope planning is taken into account in Kismayo trading activities in Somalia. Participatory and integrative planning and decision-making processes facilitate the inclusion of vulnerable populations and disadvantaged groups while also assisting in reducing tensions between host and international communities through the implementation of community infrastructure. According to the study finding in table 4.7 on the effects of road transport on trade activities in Kismayo district Somali. Does the availability and accessibility of road transport influence the establishment and growth of small businesses engaged in trade in Kismayo this had a (mean=4.01), standards deviation of 2.70, response mode of agreed and was interpreted as high. The study's findings suggest that Somalia's trade activities work in tandem with internationally established road infrastructures to bolster humanitarian-development programs, addressing the paradigm shift away from traditional humanitarian response and toward long-term, sustainable effects.

Also according to the study finding in table 4.7 on the effects of road transport on trade activities in Kismayo district, Somalia. Road transport accessibility influences the establishment of new

markets and trading routes in and around Kismayo, this was represented with (mean= 4.39), standards deviation of 2.06, response mode of strongly agree and was interested as very high. The findings suggest that one of Somalia's activities, road transportation planning, builds a portfolio of best practices and lessons learned through normative trading activities, including resources and advising tools.

As per the research results presented in Table 4.7, the effects of road transport on trade activities in Kismayo district, Somalia. Road transport contributes to the cultural exchange and diversity of goods in the Kismayo district, and had a (mean=4.21), standards deviation of 2.30, response mode of agree and was interpreted as high. Results imply that road transport contributes to the cultural exchange and diversity of goods in the Kismayo district. Depending on the nature of the activity and the estimating method, it can also be used as an input for cost estimation.

According to table 4.2 the averages mean 4.39 strongly agreed which was a strong figure from the respondent's on as far as effects of scope on the trade activities in Kismayo district, Somalia was concerned.

Qualitative findings

From the field one of the business retail traders in Kismayo had this to say;

"Having a clear road infrastructure definition increases the likelihood of success by ensuring that all parts of trading operations are in line with the objectives and helps to manage traders' expectations efficiently. What you should know about road transport definition is provided below." (Kismayo Trader, 2023).

From the field a key informant from MOPW official revealed;

"Road transport provides a thorough description of every facet of trade operations, including the borders of trading activities and all associated actions such as purchasing, shipping, and delivering goods and deliverables. Along with outlining the main players, procedures, presumptions, and limitations, a road transport also describes the nature of the trading operations and what is and isn't included. A scope declaration contains all of this important information." (Officers from Somali infrastructure fund, 2023)

“In order to address the commitments made to communities, Kismayo Trading Activities and several partners in Somalia use a wide range of planning, trading, and tool-sharing techniques to bring together diverse solutions. These include developing long-term, sustainable solutions as part of multi-actor, comprehensive responses to ensure the most vulnerable populations are protected and promoted, as well as investigating ways to support the paradigm shift toward the integration of refugee and host communities in combined programming.” (Market vendor supervisor, 2023).

One of the managers revealed from the field;

“Along with outlining the main players, procedures, presumptions, and limitations, a road transport also describes the nature of the trading operations and what is and isn't included. A scope declaration contains documentation for all of these crucial information.” (Kismayo MOPW official, 2023)

“Determine if the specifications for your trading activity have changed. This is an essential phase since the aims of the trade operations and other associated activities are directly impacted by these changes. Determine the effects of the adjustments on trade activities. You must comprehend where and how alterations affect the result before you may modify the extent of the trading actions.” (Kismayo Supervisor, 2023).

“Road transportation facilitates trade by removing the dos and don'ts that might cause delays in economic activity. This helps traders and trading activities team members understand what is included in the trading activities and helps prevent misunderstanding.” (Somali infrastructure fund officer, 2023).

4.4 Effects sea transport on trade activities in Kismayo, Somalia.

The second objective is to determine how maritime transportation affected trade in Kismayo, Somalia. The official seaport of Kismayo, which is located in southern Somalia, is the Port of Kismayo, sometimes referred to as the Kismayo Port. It is under the main class port category. It features a pier that juts into the Somali Sea in addition to a harbor. The port serves as a major export port for agricultural products, particularly bananas. The only vessels accepted were those with "very shallow draft"; deep-water ships had to use lighters in the open roadstead.

The chosen respondents were asked to rate their level of agreement with the marine transport components in order to help accomplish this goal. A five-point Likert scale was used to score their answers, with 5 denoting highly agree, 4 agree, 3 representing not sure, 2 representing disagree, and 1 representing severely disagree..

Table 4.8: descriptive statistics of the effects of sea transport on trade activities in Kismayo, Somalia.

	Statement	Mean	Std. Dev	Response mode	Interpretation
C1.	Only a small number of deep water ports handle significant cargo quantities due to the scarcity of suitable sites, which causes lengthy wait times at the ports.	4.45	1.23	Agree	High
C2.	In Somalia, international trade and marine infrastructure are highly dependent on one another.	4.74	3.01	Strongly agree	Very high
C3.	The availability and accessibility of sea transport influence the establishment and growth of small businesses engaged in trade in Kismayo.	4.65	2.10	Strongly agree	Very high
C4.	Improved maritime infrastructure contributes to the reduction of transaction costs for traders in Kismayo	4.45	2.32	Strongly agree	Very high
C5.	Sea transport contributes to sustainable development and resilience in the face of environmental challenges in Kismayo.	4.72	2.65	Strongly agreed	Very high
C6.	Information about marine transporters has to be recorded. Investors place a high importance on the company's historical, present, and expected financial performance when determining whether to finance trading operations.	4.22	2.71	Strongly Agree	Very high
C7.	Shipping costs and tariffs influence the pricing and competitiveness of goods in the local market in Kismayo.	4.33	2.19	Strongly Agree	Very high
C8	Sea transport accessibility influences the establishment of new markets and trading routes in and around Kismayo.	4.10	2.01	Strongly agree	Very high
	Average mean	4.45	2.28	Agree	

Source: Primary Data, (2023)

Based on the research results shown in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia indicated that sea transport was a primary function which ensured that traders have enough supplies that meet their expectations and goals had a (mean=4.45), standards deviation of 1.23, a response mode of strongly agree and was interpreted as very high. According to the study's findings, Somalia's maritime trade was essential to ensuring that plans are carried out with clinical accuracy and little to no variation.

There is a strong correlation between maritime infrastructure and foreign trade in Somalia, as shown by the study findings in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia. The study's response mode was strongly agree, with a mean score of 4.74, standards deviation of 3.01, and interpretation of very high. This suggests that Kismayo district, Somalia, primary objective was to have a proper sea transport for all the maritime trading activities scheduled in all areas of Kismayo city.

Based on the research results shown in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia revealed that the availability and accessibility of sea transport influence the establishment and growth of small businesses engaged in trade in Kismayo had a (mean= 4.65), standards deviation of 2.10, response mode of strongly agree and was interpreted as very high. This imply that the availability and accessibility of sea transport influence the establishment and growth of small businesses engaged in trade in Kismayo which enable successful trading activities execution and they comprise the following: create and oversee the team responsible for the trade activity. carry out maritime transportation, suggest modifications, bug fixes, preventative and corrective measures from process groups that plan, carry out, monitor, and control processes, and communicate with all stakeholders in a timely manner, executed authorized modifications to the plans, paperwork, and procedures; team-building activities, among other things.

Based on the research results shown in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia revealed that improved maritime infrastructure contributes to the reduction of transaction costs for traders in Kismayo had a (mean= 4.45), standards deviation of 2.32, response mode of strongly agree and was interpreted as very high, This imply that the once a sea transport is in place, the improved maritime infrastructures leads to reduction of transaction costs

among traders locally and internationally. A sea transport permits the buying managers to decide how much of the available cash may be devoted to the individual trading operations' components. Based on the research findings shown in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia indicated that sea transport contribute to sustainable development and resilience in the face of environmental challenges in Kismayo had a mean (mean=4.72), standards deviation of 2.65, response mode of strongly agree and was interpreted as very high, This suggests that cost-benefit analysis is aided by large-scale maritime trade. It is advisable to assess the trading activity' viability before launching significant trading operations. The viability of the commercial activity is verified by marine transport. It encourages making plans for the future. According to the study result in table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia indicated that, it was important to have documented sea transportations information had a (4.22), standards deviation of 2.71, response mode of strongly agree and was interpreted as very high. This is the case because the trading activities traders follow necessary steps to obtain the goods and supply needed to improve on their needs and urgency of the trading activities. Based on the agreements and acquisitions made with the participating business units and trading pool, trading calendars are created and sea transportation for trading operations is carried out;

Based on the research results shown in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia revealed that shipping costs and tariffs influence the pricing and competitiveness of goods in the local market in Kismayo had a (mean 4.33), standards deviation of 2.19, response mode of strongly agree and was interpreted as very high. The team in charge of revising the trading activities strategy is known as the trade activities team. For the trading activities manager, the trading activities plan is several things. It serves as a record of the trading operations that have taken place. It is an example of what is now occurring with trade activity.

Additionally, by outlining what's to come, it gets the trade activities team ready. The trading activities manager's (or trading activities administrator's) primary responsibility is to maintain the plan's currency. Updates on trading activities center on the three trade activity constraints: scope, cost, and time. A competent trader is aware that adjustments made to one of these variables also affect the other two. The impact of these modifications on trading activities overall will be displayed in a current trading activities plan.

Based on the research findings shown in Table 4.8 on the effects of sea transport on trade activities in Kismayo, Somalia indicated that does sea transport accessibility influences the establishment of new markets and trading routes in and around Kismayo had a (mean 4.10), standards deviation of 2.01, a response mode of strongly agree and was interpreted as very high. This implies that at any time, the sea transport accessibility influences the establishment of new markets and trading routes in and around Kismayo. It can readily track the deviation in great detail. The management gives the subordinates instructions based on this consideration.

According to the study results displayed in Table 4.8, the average mean and std division is 4.45 and 2.28 agree was noteworthy in terms of the effects of sea transport on trade activities in Kismayo, Somalia was concerned.

Qualitative findings

A key respondent from trading activities revealed;

“To properly monitor and control of trading activities your need to implement a range of trading activities sea transport procedures. You can manage time, money, quality, change, risks, and challenges with the use of these procedures. Additionally, they support you in handling communications, consumer acceptance, and procurement.” (Traders supervisor, 2023).

“The ability to determine the primary goals of a trade enterprise is made possible by maritime transportation. Certain trade operations aim to achieve too much and can be overly comprehensive. Having sea transport in place, however, restricts an organization's or its trade activities manager's first possibilities. If these limitations on maritime transportation are not put in place, trade operations could not be finished on time or at all in the event that money runs out. Rather, maritime transportation enables dealers to ascertain their spending limits for each specific facet of their trading operations.” (Traders supervisor, 2023).

“Having access to sea transportation has the benefit of enabling you to give different aspects of commercial activity priority. A sea transport will enable you to prioritize which trading activities can be completed first while other parts are put on hold, even though it may be desirable to complete all of the trading activities at once if the available

funds indicate that there may not be enough money to complete all aspects of the trading activities as desired.” (MOPW official, 2023).

One important responder from said;

“In the event that the sea transport shows funding to be inadequate to cover the necessary costs to complete the entire trading activities, having a sea transport in place will make easier to plan for future trading costs. For instance, if the sea transport shows that only four of the five turns of goods can be purchased with the available funds, you should know how much additional money you will need to raise to complete the entire trading activities because you know how much money should be allocated to each part” (Traders Supervisor, 2023).

One important responder disclosed;

“In the event that the sea transport shows finance is insufficient to pay the expenditures necessary to complete the trading operations, having a sea transport in place will make it easier to budget for future trading expenses. For instance, if the sea transport shows that only four of the five turns of things can be obtained with the current cash, you will know how much more money you need to earn to fulfill the entire trade operations since you know how much money should be allocated to each section.” (Government official, 2023).

“The trading operations are influenced by several unknown variables. Providing for unforeseen expenses is a necessary component of optimal maritime business activity. It won't hurt the organization's profitability and will aid in better planning. The proportion of contingency will be determined by historical trading activity.” (MPOW, 2023)

“The top-level management team should be informed of the maritime transport once it is ready so they may offer feedback. Additionally, it aids in verifying the authenticity of the maritime transportation” (Somali infrastructure fund coordinator, 2023).

“Occasionally, the initial allotted amount of funding is insufficient to finish the trade operations. The maritime trade will assist in determining which portion of the transportation network is critical and in need of urgent delivery of the products.” (Somali infrastructure fund staff, 2023).

4.5 Effects of air transport on trade activities in Kismayo, Somalia.

The five-point Likert scale was used to score the items, with the options being strongly disagree, disagree, agree, disagree, and not sure. Table 4.9 following presents the results: The chosen respondents were asked to rate their level of agreement with the items in order to accomplish this goal. A five-point Likert scale was used to score their answers, with 5 denoting highly agree, 4 agree, 3 representing not sure, 2 representing disagree, and 1 representing severely disagree.

Table 4.9; descriptive statistics of the effects of air transport on trade activities in Kismayo, Somalia

	Statement	Mean	Std. Dev	Response mode	Interpretation
D1.	Air transportation costs influence the pricing and competitiveness of goods in the local market in Kismayo.	4.32	2.34	Strongly agree	Very high
D2.	The reliability of air transport schedules affect the timeliness of goods delivery and trade transactions in Kismayo	4.31	2.32	Strongly agree	Very high
D3.	Air transportation conditions impact the decision-making process of traders in selecting markets and suppliers. This means you can react as quickly as possible, too.	3.65	2.10	Agree	High
D4.	Air transport play in fostering job creation and income generation within the trade sector in Kismayo.	4.42	2.32	Strongly agree	Very high
D5.	In addition to being essential in promoting tourism, air transportation guarantees fair access for all parties involved in international trade.	4.33	2.69	Strongly agree	Very high
	Average mean	4.22	2.35	Strongly agree	

Source: Primary Data (2023)

Based on the research results shown in Table 4.9 on the effects of air transport on trade activities in Kismayo, Somalia revealed that, air transportation costs influence the pricing and competitiveness of goods in the local market in Kismayo had a (mean=4.32), standards deviation of 2.34, response mode of strongly agree and was interpreted as very high. This suggests that air transportation aids in keeping costs and timetables under control in Kismayo, Somalia, where economic operations take place. The initiation, planning, monitoring, managing, communicating, and closing down of trading operations and timetable are among the tasks of air transport trade activities.

According to the study findings in table 4.9 on effects of air transport on trade activities in Kismayo, Somalia indicated that the reliability of air transport schedules affect the timeliness of goods delivery and trade transactions in Kismayo had a (mean= 4.31), standards deviation of 2.32, a response mode of strongly agree and interpreted as very high. The study results imply that trading activities in Kismayo helps professionals to better understand the status of a trading activities and identify areas of improvement while keeping stakeholders involved in the trading activities plan.

Based on the research results shown in Table 4.9 on effects of air transport on trade activities in Kismayo, Somalia indicated that an air transport conditions impact the decision-making process of traders in selecting markets and suppliers had a (mean 3.65), standards deviation of 2.10, response mode of agree and was interpreted as high. The study's findings suggest that trade in Kismayo, Somalia, influences decision-making processes by fusing several performance reports, contrasting them, and extracting pertinent data from earlier reports.

Based on the research results shown in Table 4.9 on effects of air transport on trade activities in Kismayo, Somalia indicated that Air transport play in fostering job creation and income generation within the trade sector in Kismayo had a (mean 4.42), standards deviation of 2.32, response mode of strongly agree and was interpreted as very high. The study's findings also suggest that dealers in Somalia's air transport market spend less time creating strategies and setting goals for their teams. As a result, teams, sponsors, and stakeholders spend less time modifying the project's scope and implementation procedure. Maintaining composure and facilitating trade operations may be achieved by implementing simple and straightforward

change management procedures and maintaining a clear focus on the overall picture, even when some aspects alter.

Based on the research results shown in Table 4.9 on effects of air transport on trade activities in Kismayo, Somalia indicated that Air transportation ensures equitable access for various stakeholders and traders in international trade and plays a critical role in facilitating tourism had a (mean 4.33), standards deviation of 2.69, response mode of strongly agree and was interpreted as very high. The results also suggest that changes occur almost at every stage of the lifespan of trade operations. The greatest trading activity managers are able to take more flexible approaches to planning and execution because they acknowledge that changes are unavoidable and frequently helpful aspects of the process. The quickest approach to keep everyone focused on the goal despite what may occasionally seem like continual direction changes is to have plans in place for how to deal with changes as they arise.

From table 4.9 the total means from the frequency on effects of air transport on trade activities in Kismayo, Somalia was 4.22 which were significant.

Qualitative findings

“A commercial enterprise Air travel offers a comprehensive itinerary for your trading endeavors. It outlines all of the duties and their respective deadlines so that everyone on your team is aware of when each step is due and when the trade activities will come to an end.”

“Trading activities air transports give your team an action plan, boost accountability, and help you steer around any potential roadblocks. And that’s only scratching the surface on the advantages your trading activities air transport offers” (Somali infrastructure fund coordinator, 2023)

“In the context of trading operations, you can use image-based formats, such as tables and charts, or text-based documents, such as spreadsheets and graphs, to construct performance reports. To make research results easier for stakeholders to grasp, their specialists prefer to combine many forms in their reports, such as a chart and graph.” (Somali infrastructure fund coordination, 2023).

“Staying the course is one of the main advantages of air transportation for commercial transactions. Breaking things down makes it simpler to track progress and identify any gaps or discrepancies. You can be certain that your trade activity will go behind schedule if even one component is late.” (Somali infrastructure fund Coordinator, 2023).

4.6 Regression analysis for Study Variables

4.6.1 Regression analysis for road transport and trade activities

Table 4.10: effects of Road transport on trading activities In Kismayo district, Somalia

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.197 ^a	.037	.034	.20214

a. Predictors: (Constant), Road transport

b. Dependent Variable: Trading activities

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.567	1	.567	14.304	.000 ^b
	Residual	14.356	159	.040		
	Total	14.924	160			

a. Dependent Variable: Trading activities

b. Predictors: (Constant), Road transport

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.362	.271		12.904	.000
	Road transport	1.122	.059	.197	3.772	.000

a. Dependent Variable: Trading activities

Source: Field data, 2023

Road transport positively influenced trading activities at a rate of 3.7%, according to table 4.5's regression analysis results in the model summary table. This was indicated by an r-squared of

0.037, suggesting that road transport and trading activities had a moderately significant relationship in the Kismayo district of Somalia.

The ANOVA table revealed that road transport has a positive significant effect on trading activities. This was supported by the positive F-value = 14.304 and Sig-value = .000, as the significance level of 0.000 was less than 0.05, which is the highest level needed to declare a positive significant effect.

This suggests that trade in the Kismayo area of Somalia was greatly affected by road transportation. According to the coefficients table, road transport has a considerable impact on trading operations in the Kismayo area of Somalia when standard error is taken into account ($\beta = 3.362$, Sig = 0.000). This shows that the data are correctly fitted by the regression equation. This suggests that enhanced commercial activity would follow a favorable improvement in road transportation.

4.6.2 Regression analysis for sea transport and trade activities

Table 4.11: Results of the effects of sea transport on trading activities in Kismayo district, Somalia.

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.075 ^a	.007	.003	.20248

a. Predictors: (Constant), Sea transport

b. Dependent Variable: Trading activities

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.082	1	.082	2.023	.156 ^b
	Residual	14.842	159	.041		
	Total	14.924	160			

a. Dependent Variable: Trading activities

b. Predictors: (Constant), Sea transport

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.153	.144		28.889	.000
	Sea transport	.037	.033	.075	1.424	.047

a. Dependent Variable: Trading activities

Source: Field data, 2023

Table 4.6 presents the results of the regression analysis in the model Summary table. The results show that sea transport positively influenced trading activities at a rate of 0.7%, as indicated by the r-squared of 0.007, suggesting a moderately significant relationship between sea transport and trading activities in Kismayo district, Somalia.

The ANOVA table revealed a substantial positive relationship between sea transport and trade activities, as evidenced by the positive F-value = 2.023 and Sig-value = .000. However, because of the sig. value of 0.156, the relationship would typically be regarded as not statistically

significant at a significance threshold of 0.05. This would imply that marine transportation has little effect on trade activity.

This implies that sea transport highly influenced trading activities, in trading activities in Kismayo district, Somalia. The coefficients table indicated that considering the standard error, sea transport significantly affect the Trading activities in Kismayo district, Somalia ($\beta=3.362$, $\text{Sig}=0.000$). This suggests that the regression equation is properly fitted the data.

4.6.3 Regression analysis for activities air transport and trade activities

Table 4.12: Effects of Air transport on trading activities in Kismayo district, Somalia

Model summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.669 ^a	.448	.440	2.17548

a. Predictors: (Constant), Air transport

b. Dependent Variable: Trading activities

Analysis Of Variance (ANOVA ^a)					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	272.633	1	272.633	57.606	.000 ^b
Residual	336.024	159	4.733		
Total	608.658	160			

a. Dependent Variable: Trading activities

b. Predictors: (Constant), Air transport

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.285	2.339		5.680	.000
Air transport	1.299	.171	.669	7.590	.000

a. Dependent Variable: Trading activities

Source: Field data, 2022

Regression analysis results in the model Summary table, as shown in table 4.7, suggested that air travel positively influenced trading activities at a rate of 44.8%. This was supported by an r-squared of 0.448, suggesting a significant relationship between air travel and trading activities in the Kismayo district of Somalia.

The results of the ANOVA table demonstrated that air travel has a positive significant impact on trading activities. This was demonstrated by the positive F-value = 57.606 and Sig-value = .000, as the significance level (0.000) was less than 0.05, which is the highest level needed to declare a positive significant effect.

This suggests that trade in the Kismayo area of Somalia was greatly impacted by air travel. According to the coefficients table, air transport has a considerable impact on commercial operations in Kismayo district, Somalia, when standard error is taken into account ($\beta = .669$, Sig = 0.000). Therefore, an improvement in air transport commerce would result in an improvement in trade activity.

4.7 Regression analysis for Road transport, Trading activities sea transport and Trade activities

The table 4.8 below regression analysis of Road transport, sea transport and air transport

Table 4.13: Regression analysis for Road transport, Trading activities sea transport and Trade activities

Model	Un-standardized coefficients		Standardized coefficients	Trade activities	
	B	Std. Error	Beta	t	Sig
Constant	1.041	.304		2.504	.000
Road transport	1.122	.059	.197	3.772	.000
Sea transport	.037	.033	.075	1.424	.047
Trading activities air transport	1.299	.171	.669	7.590	.000
R = .616, R Square = .379, Adjusted R Square = .366, F = 1.912, Sig = .000					

Source: Primary data computed, (2023)

- Dependent variable: Trading activities*
- Predictors: (constant), **Road transport, sea transport and Air transport***

Table 4.8 presents the study results. The model summary table indicates that the correlation value, denoted by R, indicates the strength of the relationship between the independent and dependent variables. The results of this investigation indicate a significant positive linear relationship between the independent and dependent variables ($R = .616$).

The R squared from the model summary table 4.13 represents the study's coefficient of determination, which indicates how well changes in the independent variables—road, sea, and air transportation—can explain changes in the dependent variable, or trading activities. In this study, the coefficient of determination is 61.6%. Put another way, this suggests that 38.4 percent of the volatility in management in Kismayo district, Somalia, is undefined and that the combined predictor factors predicted 61.6% of the variance ($R = .616$). The model's modest predictive

power is shown by its R-squared of 0.379, which is less than the 60% and above threshold that is considered sufficient for a model's reliability.

36.6% of the variance in trade activity can be explained by these factors (Adjusted R Square = 0.366). Sea transport was the most significant predictor of trading activities, with $\beta = 0.426$, Sig.0.013; road transport came in second, with $\beta = 0.321$, Sig.0.022; and trading activities air transport, with $\beta = 0.315$, Sig.0.01, was less likely to have an impact on trading activities due to its lower value and lack of significance in the model. Based on the threshold of Significant (F=.912, Sig =.000), the regression model was found to be significant.

The study findings have yielded a prediction model using the formula $EP = .426R + .321ER + .315CM$. Thus, based on the results, it can be said that trade operations may be enhanced by combining road, sea, and air transportation with trade activities; however, sea transportation accounts for a greater portion of the variation.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter covered the findings, conclusions, and recommendations derived from the study's objectives, which were to determine the impact of air travel, sea transportation, and sea transport on trade activities in Kismayo, Somalia, as well as the extent to which they affected trade activities in the district.

5.1 Discussion of findings

5.1.1 Demographic characteristics of respondents

It was discovered from the field that 64 (47.1%) of the respondents were women and 72 (52.9%) were men. This demonstrates that there were more men than women in the population. Given that they take charge of their families and are deeply concerned with the happiness and well-being of family members, the study's findings suggest that the male respondents were engaged in the research and had positive opinions. It also demonstrates Kismayo District, Somalia's interest in gender parity, which may guarantee appropriate family planning and management.

Results from the field also showed that the largest group of respondents, or 44% of the total, were between the ages of 20 and 29. These were followed by 30% of respondents who were between the ages of 30-39, 16% of respondents who were between 40 and 49, and, last but not least, 2% of respondents who were 19 years of age or less and 8% of respondents who were 50 years of age and above.

Additional results from the field study showed that 15 (11.0%) of the participants held certificates, 20 (14.7%) held diplomas, 62 (45.5%) held bachelor's degrees, 31 (22.7%) held master's degrees, and only 8 (5.6%) were classified as others had completed their tertiary education and had experience from working in Kismayo trading activities for a significant amount of years.

Furthermore, the study's findings revealed that, of the 136 respondents, 60 (44.1%) said they were single, 52 (37.2%) said they were married, 04 (2.9%) said they were widowed, and 20 (14.9%) said they were separated. According to the results, the respondents' marital status was covered throughout all categories, and the majority of them were single, as evidenced by the greatest proportion (44.1%).

The findings from the field indicate that 46% of the respondents had worked in Kismayo, Somalia for one to three years. These were followed by 34% of respondents who had worked in Kismayo, Somalia for four to six years, 13% of respondents who had worked in the trading sector for less than a year, and 7% of respondents who had worked for six years or more at the study organization. 70% of respondents were determined to be beneficiaries, 20% to be regular personnel at trade, and 10% to be executive members. These respondents made up the largest group of respondents.

5.1.2 Objective One: Effects of road transport on trade activities in Kismayo district, Somalia

The quantity of commerce activity in the area is impacted by the quality of Kismayo's road infrastructure, according to field research findings. This suggests that Kismayo's road infrastructure quality has an influence on the amount of trade activity in the area. The response mode was strongly agree, with a mean of 4.74 and a standard deviation of 2.0, indicating a very high level of quality. This suggests that effective road transport planning at the regional, district, and local levels enhances Somalia's ability to do business. The results supported the assertions made by Pojani and Stead (2015) that there is a generally acknowledged relationship between the number of automobiles per resident and wealth, which is determined by the GDP, or more specifically, per capita income. Having a large income would probably encourage households to buy cars. Revenues, however, are often lower in developing countries than in developed ones. Over 70% of travel in poor nations is done on foot, with animal carriages being used sometimes. This reality must be taken into consideration while constructing highways (Tchanche, 2019).

Results showed that the effectiveness of road transport services influences the punctuality and dependability of goods delivery in Kismayo (mean=4.65) with a standard deviation of 2.10. The response mode was strongly agree, which was interpreted as very high. These results were

consistent with those of Pojani and Stead (2015). This suggests that progress and success in all areas were monitored, and that adequate time was allotted to do all of the tasks. The results corroborated the claim made by Gwilliam (n.d.) that 80–90% of all passenger and freight traffic in most African nations travels on roadways. Moreover, they are the only means of access to most rural communities. In addition, they provide the majority of rural villages with the sole access. Even though the region's network density is lower than that of other globe areas—per person and per square kilometer of geographical area—it nonetheless manages to attain this domination. In addition, the state of the road network is subpar by global standards. However, as a result of both low GDP per capita and low population density, the road network's budgetary load is comparatively large per capita. The sector's ability to function effectively in these challenging times depends on the availability of stable financing for road maintenance and the proper execution of such maintenance. In addition, they provide the majority of rural villages with the sole access. Even though the region's network density is lower than that of other globe areas—per person and per square kilometer of geographical area—it nonetheless manages to attain this domination. In addition, the state of the road network is subpar by global standards. However, as a result of both low GDP per capita and low population density, the road network's budgetary load is comparatively large per capita. The sector's ability to function effectively in these challenging times depends on the availability of stable financing for road maintenance and the proper execution of such maintenance.

Furthermore, it was discovered that better road infrastructure lowers transaction costs for Kismayo traders. This was demonstrated by a mean of 4.31 and a standard deviation of 2.02, indicating good agreement and a very high response mode. This suggests that road infrastructure may be used as a means of bridging the gap that exists between development operations and commerce. This was in line with the findings of David et al. (2018), who claimed that 80–90% of passenger and freight traffic in most African nations travels on roadways. According to estimates from the World Bank, the trunk road network that connects deep sea ports to the continent's economic hinterlands carries around US\$ 200 billion in trade in Africa. In Africa, the majority of rural regions rely only on highways for communication. Despite this, compared to other regions, Africa has a far lower road network density per person and per square kilometer of geographical area. Due to the scarcity of railroad lines throughout the continent, road transportation dominates

the motorized transportation sector in the area, making up more than four-fifths of both freight and passenger traffic in Sub-Saharan Africa (David et al., 2018).

Further research indicated that road transportation is crucial for promoting cross-border commerce and regional economic integration in Kismayo. This conclusion was based on a response mode of strongly agree (mean=4.45), standards deviation of 2.71, and interpretation of very high. This suggests that scope planning is taken into account in Kismayo trading activities in Somalia. Participatory and integrative planning and decision-making processes facilitate the inclusion of vulnerable populations and disadvantaged groups while also assisting in reducing tensions between host and international communities through the implementation of community infrastructure. The results were consistent with the findings of David et al. (2018), who claimed that there is a close relationship between the process of economic expansion and the development of infrastructural networks. Transport infrastructure links areas of industry and consumption and promotes commerce and economic integration. The Trans-African Highway road network, which is made up of nine groupings of road linkages serving various subregions of the continent, is given top priority. The sections, which connect 15 landlocked nations with enhanced regional ties and sea access, go from Cairo to Dakar, Tripoli to Windhoek, and Lagos to Mombasa. One of the top financial institutions that has made regional integration the core of its activities is the African Development Bank.

The field results showed that the development and expansion of small enterprises involved in trade in Kismayo are influenced by the accessibility and availability of road transportation. This was indicated by a (mean=4.01), standards deviation of 2.70, answer mode of agreed, and was considered high. The study's findings suggest that Somalia's trade activities work in tandem with internationally established road infrastructures to support humanitarian-development programs, addressing the paradigm shift away from traditional humanitarian responses and toward long-term, sustainable effects. The results differed from the African Review Report (2009). In this survey, it was reported that road transportation accounted for 90% of passenger traffic and 80% of cargo traffic on the continent, making it the most popular form of motorized transportation in Africa. There is a significant subregional difference in the average road-to-population ratio across the continent, which is 26 km per 10,000 people. The majority of African nations incur exorbitant transportation expenses. Africa's transport and insurance expenses account for 30% of

export value on average when entering outside markets, a much higher percentage than the 8.6% average for all developing nations. Landlocked nations experience the highest travel costs on the continent, despite the fact that most share this issue. Notably, it was discovered that the development of new markets and trade routes in and around Kismayo is influenced by the accessibility of road transportation; this was demonstrated by a mean of 4.39, a standards deviation of 2.06, a response mode of strongly agree, and a very high level of interest. The findings suggest that one of Somalia's activities, road transportation planning, builds a portfolio of best practices and lessons learned through normative trading activities, including resources and advising tools. The results supported Tchanche's (2019) assertion that households with higher incomes would be more inclined to purchase cars. Revenues, however, are often lower in developing countries than in developed ones. Over 70% of travel in poor nations is done on foot, with animal carriages being used sometimes. This reality must be taken into consideration while constructing highways (Tchanche, 2019).

Additional research showed that road transportation has a positive impact on the diversity of commodities and cultural exchange in the Kismayo area. It was deemed to have a high response mode (mean = 4.21, standards deviation = 2.30), and an agree response mode. The findings suggest that the Kismayo district's cultural interchange and product diversification are enhanced by road transportation. Depending on the nature of the activity and the estimating method, it can also be used as an input for cost estimation. The results supported the claim made by Gwilliam (n.d.) that, notwithstanding the establishment of the East African Community (EAC), 80% of economic flows in East Africa originate or finish outside the continent. Mombasa is the primary port for the area, processing about 13 million tons of cargo annually and providing service to Burundi, the Democratic Republic of the Congo, Rwanda, and Kenya via the northern route. In addition to serving Zambia, the central corridor from Dares Salaam also goes via the Democratic Republic of the Congo. There are four major trading routes in southern Africa. The primary route, the north-south corridor from Durban, connects Zambia, the southeast Democratic Republic of the Congo, and western Malawi to Botswana, Zimbabwe, and South Africa as an intraregional commerce route (Gwilliam, n.d.).

5.1.3 Objective Two: Effects of sea transport on trade activities in Kismayo, Somalia.

Sea transport was identified as a main role from the field results, ensuring that traders had adequate goods to satisfy their expectations and ambitions. The answer mode was strongly agree, with a mean score of 4.45, a standards deviation of 1.23, and an interpretation of very high. According to the study's findings, Somalia's maritime trade was essential to ensuring that plans are carried out with clinical accuracy and little to no variation. The results were consistent with David et al.'s (2018) emphasis on the close relationship between marine infrastructure and international trade in Africa. Sea transport was identified as a main role from the field results, ensuring that traders had adequate goods to satisfy their expectations and ambitions. The answer mode was strongly agree, with a mean score of 4.45, a standards deviation of 1.23, and an interpretation of very high. According to the study's findings, Somalia's maritime trade was essential to ensuring that plans are carried out with clinical accuracy and little to no variation. The results were consistent with David et al.'s (2018) emphasis on the close relationship between marine infrastructure and international trade in Africa.

Additional research showed that Somalia's marine infrastructure and international trade are very interdependent. This was indicated by a mean score of 4.74, a standards deviation of 3.01, a strongly agree response mode, and an interpretation of very high. This suggests that having a suitable marine transportation system for all of the scheduled maritime commerce operations in all parts of Kismayo city was the main goal of the Kismayo district in Somalia. According to Gwilliam (n.d.), there are several ports in Africa, the majority of them are little in comparison to other ports worldwide. Very few are able to handle the biggest ships. African ports are often underproductive, ill-equipped, and unprepared for the swiftly changing international commerce and shipping trends. Comparing them to ports in other areas, they nevertheless lag behind in the development of contemporary port-management structures, even if they are gradually transitioning from public ownership and operation to the landlord port management model (Gwilliam, n.d.).

Field research showed that the development and expansion of small enterprises involved in trade in Kismayo are influenced by the availability and accessibility of sea transportation, with a mean score of 4.65, a standards deviation of 2.10, a response mode of strongly agree, and an

interpretation of very high. This suggests that the accessibility and availability of sea transportation have an impact on the development and expansion of small businesses involved in trade in Kismayo. These factors include, but are not limited to, the following: creating and managing a team to work on trading activities; executing sea transportation; suggesting changes and bug fixes; preventing and correcting actions arising from Planning, Executing, Monitoring, and Controlling process groups; timely communication with all stakeholders; and implementing approved changes to documentation, plans, and processes. The results corroborated Caesar's (2010) assertion that, as vital components of international supply chains, they face mounting pressure from shippers, who are in turn motivated by the always rising demands of their own clientele. The advantages that shippers receive from efficient port operations and clearance procedures are immeasurable, and as a result, numerous shipper expectations have been placed on ports and the organizations responsible for running them. Better on-time performance, increased document correctness, more in-transit visibility, and improved information flows are a few of these needs (Caesar, 2010).

The field's results showed that enhanced marine infrastructure lowers transaction costs for Kismayo's traders; this was indicated by a mean of 4.45, a standards deviation of 2.32, a strongly agree response mode, and an interpretation of very high. This suggests that once sea transportation is established, better maritime infrastructure lowers the cost of transactions for both domestic and foreign businesses. Purchasing managers can decide how much of the available cash can go toward the individual components of trade activity when using a marine transport. The results contradicted the assertions made by David et al. (2018) that only a small number of international ports handle significant cargo quantities, leading to lengthy wait times at the ports, because there are few suitable locations for deep water ports. The lack of proper infrastructure in African sea ports limits the region's ability to compete, as 80 percent of global trade is carried out through sea ports connected to road and rail networks. Africa's marine infrastructure needs more innovation and improvement due to the anticipated rise in seaborne trade in the area (David et al., 2018).

Results also showed that maritime transportation promotes resilient development and sustained growth in the face of environmental difficulties. Has a highly agree response mode, a mean of 4.72, a standards deviation of 2.65, and was considered extremely high in Kismayo. This

suggests that cost-benefit analysis is aided by large-scale maritime trade. It is advisable to assess the trading activity' viability before launching significant trading operations. The viability of the commercial activity is verified by marine transport. It encourages making plans for the future. The results were consistent with the UNESCO (2009) research, which suggested that the most common form of transportation for carrying cargo into and out of Africa is marine transit. More than 92% of all trade with Africa is through it. Africa has a total coastline length of 30,725 km. It is home to 90 major ports as well as several smaller ports that offer fishing and tourism services. Merely 6% of worldwide traffic is handled by African ports, out of which around 6 ports—3 in South Africa and Egypt and 1 in Egypt—manage 50% of the continent's container traffic. Africa is also blessed with a large number of lakes and rivers that have the potential to be low-cost, low-energy, and environmentally beneficial inland waterways. There are navigable bodies of water in twenty-nine African nations, but few of them have been extensively exploited for transportation purposes (UNESCO, 2009).

5.1.4 Objective Three: Effects of Air transport on trade activities in Kismayo, Somalia.

Air transportation costs had an impact on the price and competitiveness of items in the local market in Kismayo, according to the field study. The results showed that this impact was quite significant, with a mean of 4.32, a standards deviation of 2.34, and a response style of strongly agreeing. This suggests that air transportation-based trade with Somalia helps to maintain budgets and timelines in Kismayo. When trading operations are carried out by air, the following tasks are performed: starting, planning, monitoring, regulating, communicating, and concluding trading activities' expenses and schedule. The results were consistent with the assertions made by Rodrigue et al. (2019) that it is an area of land or water that is used or intended to be used for aircraft landing and takeoff, including buildings and facilities used primarily by conventional, fixed-wing aircraft; that is, a facility where aircraft can land or take off. comprises of hangars, hard-surfaced landing strips, a control tower, and passenger and freight cabins. a runway that airplanes often use to land and take off people or cargo.

The results of the study also showed that the timeliness of commercial transactions and the delivery of products in Kismayo are impacted by the dependability of air transport schedules, with a mean of 4.31, a standards deviation of 2.32, a strongly agree response mode, and an

interpretation of very high. According to the study's findings, trade activities in Kismayo assist experts in assessing the state of trading activities and pinpointing areas for development while including stakeholders in the trading activities plan. The results corroborated the claims made by David et al. (2018) that air travel is a crucial component of global trade and aids in the promotion of tourism. Globalizing supply chains and related investment has increased trade flows by lowering transportation costs and enhancing connectivity.

Furthermore, the study found that the state of air transportation influences traders' decision-making when choosing suppliers and marketplaces. The study found that the answer mode of agree, with a mean of 3.65 and a standard deviation of 2.10, was regarded as high. The study's findings suggest that trade in Kismayo, Somalia, influences decision-making processes by fusing disparate performance reports, contrasting them, and extracting pertinent data from earlier reports. The results corroborated the claim made by Rodrigue et al. (2019) that air travel is essential to the globalization of transportation networks. Of the energy used for transportation, 8% comes from the aviation sector. Furthermore, the study found that the state of air transportation influences traders' decision-making when choosing suppliers and marketplaces. The study found that the answer mode of agree, with a mean of 3.65 and a standard deviation of 2.10, was regarded as high. The study's findings suggest that trade in Kismayo, Somalia, influences decision-making processes by fusing disparate performance reports, contrasting them, and extracting pertinent data from earlier reports. The results corroborated the claim made by Rodrigue et al. (2019) that air travel is essential to the globalization of transportation networks. Of the energy used for transportation, 8% comes from the aviation sector.

Additional field research indicated that the role that air travel plays in generating revenue and jobs in Kismayo's commerce sector had a mean score of 4.42, a standards deviation of 2.32, a strongly agree response mode, and was considered to be extremely high. The study's findings also suggest that dealers in Somalia's air transport market spend less time creating strategies and setting goals for their teams. As a result, teams, sponsors, and stakeholders spend less time modifying the project's scope and implementation procedure. Maintaining composure and facilitating trade operations may be achieved by implementing simple and straightforward change management procedures and maintaining a clear focus on the overall picture, even when some aspects alter. The results contradicted those of Notteboom (2004), who pointed out that the

removal of trade obstacles brought about by market liberalization and deregulation had boosted global commerce. Different strategies used by nations to control markets, safeguard their citizens and local businesses, and discriminate against imports in favor of native goods are known as trade barriers (Pollard et al., 2003). According to Caesar (2010), the most prevalent ones are tariffs, quotas, subsidies, and dumping.

Furthermore, the results showed that air travel has a mean of 4.33, a standards deviation of 2.69, a response mode of strongly agree, and was regarded as very high. Air transportation also ensures equitable access for various stakeholders and traders in international trade and plays a critical role in facilitating tourism. The results also suggest that changes occur almost at every stage of the lifespan of trade operations. The greatest trading activity managers are able to take more flexible approaches to planning and execution because they acknowledge that changes are unavoidable and frequently helpful aspects of the process. The quickest approach to keep everyone focused on the goal despite what may occasionally seem like continual direction changes is to have plans in place for how to deal with changes as they arise. The results corroborated the claim made by David et al. (2018) that paved runways are present in just 25% of these airports. The development of intra-African air travel has been restrained mostly by inadequate infrastructure and in part by the absence of an appropriate liberalization strategy among African countries. The African aviation sector has a number of obstacles, such as inadequate airport infrastructure, a shortage of both people and physical resources, insufficient connection, and a lack of transit facilities. Although Africa's portion of the global aviation sector is still relatively tiny in comparison to other areas, the International Air Transport Association (IATA) says that it supports 6.8 million employments and adds US\$ 72.5 billion to the continent's economy (David et al., 2018).

5.2 Conclusions

5.2.1 Objective One: Effects of road transport on trade activities in Kismayo district, Somalia

Road transportation is clearly necessary for commerce activity, to sum up. To put it briefly, "road transport" refers to a sophisticated mode of transportation that handles various commercial transactions from start to finish. Moreover, "road transportation of supplies and goods is the

tracker that monitors the sequences and tenure of tasks related to trading activities." A schedule of trading activities informs and warns the trading activities team to any delays or questions about whether the trading operations are being directed in the right way. Being a living document, it needs to be updated and recorded on a regular basis.

This study also concludes that the findings underscore the pivotal role of road transport in shaping the trade landscape in Kismayo. The positive perceptions and strong agreement among respondents highlight the importance of continued investment in road infrastructure for economic development, regional integration, and cultural exchange in the region. These conclusions align with existing literature and emphasize the need for strategic planning and maintenance of road networks to support the growing trade activities in Somalia.

5.2.2 Objective Two: Effects of sea transport on trade activities in Kismayo, Somalia.

The study concludes that the vital role of sea transport in Kismayo's trade activities, from supporting small businesses to reducing transaction costs and contributing to sustainable development. The findings underscore the importance of continued investment in maritime infrastructure and planning to address challenges and enhance the effectiveness of sea transport in promoting economic growth and resilience in the region. Key planning components, such as the development of trade activities and the participation of the local community and other pertinent stakeholders, are essential to the success of the commercial operations overall in Kismayo.

Furthermore, the research indicates that maritime transportation was acknowledged as the primary means of transferring cargo into and out of Somalia. The results also point to obstacles associated with the scarcity of suitable sites for deep-water ports and insufficient infrastructure. This emphasizes how important it is for marine infrastructure to innovate and grow. Sea transport was also seen as a tool for feasibility analysis and future planning in the context of trading activities. The ability to check the feasibility of trading activities and promote future planning is crucial for the success and sustainability of sea transport.

5.2.3 Objective Three: Effects of Air transport on trade activities in Kismayo, Somalia.

The study comes to the conclusion that arranging air travel for trade purposes is an essential component of all trading activity. Within the domain of trade activities, air transport is defined as encompassing all essential planning, purchases, design, and trading operations. Trading activities initiation, preliminary engineering, environmental assessment, right of way mapping and acquisition, utility engineering and adjustment, final design, letting (advertising and bidding), contract execution, construction, and trading activities close-out are some of the components of a typical trading activities air transport for transportation trading activities. The approximate dates for when particular jobs will occur are determined by taking into account the unique lengths for each trade activity and the logistical connections between different chores.

The study concluded the multifaceted impact of air transport on trade activities in Kismayo, from influencing pricing and competitiveness to fostering job creation and income generation. The findings suggest the need for continued efforts to enhance the efficiency and reliability of air transport while addressing challenges and promoting equitable access for various stakeholders. All parties involved in commercial operations would greatly benefit from a relatively precise air transport estimate for key products.

5.3 Recommendations

5.3.1 Objective One: Effects of road transport on trade activities in Kismayo district, Somalia

In order to improve the performance of the trade sector and raise its GDP share, the government should focus more on the construction of transportation infrastructure, such as roads, railway lines, airports, and sea ports. This would allow for speedier movement of commodities and other items. In order to achieve the "Big Four Agenda" manufacturing pillar, the government should stop spending money on power connectivity and instead focus on building more roads, railroads, seaports, and air ports, as well as spending money on ICT to foster creativity and innovation and increase trade in goods and other products.

There is need for the government of Somalia to establish a monitoring and evaluation system to regularly assess the effectiveness of road transport initiatives. This includes evaluating the impact of road improvements on trade activities, identifying challenges, and making necessary adjustments for continuous improvement.

The ministry of transport needs to foster partnerships between the public and private sectors to encourage joint investments in road infrastructure. Public-private partnerships can help leverage resources, improve funding mechanisms, and enhance the sustainability of road development projects.

The local authorities and relevant stakeholders in Kismayo, Somalia should invest in the improvement of road infrastructure in Kismayo. This includes maintaining existing roads, constructing new ones where needed, and ensuring that the roads are well-paved and suitable for transportation.

There is also need to plan for improved accessibility to markets and trading routes through strategic road development. Consider the needs of traders and businesses to ensure that road networks effectively connect producers with consumers, both locally and internationally.

5.3.2 Objective Two: Effects of sea transport on trade activities in Kismayo, Somalia.

There is need for the government of Somalia to invest in the development and maintenance of maritime infrastructure, including ports and docking facilities. Ensure that these facilities are well-equipped and capable of handling increasing trade volumes.

The authorities in Kismayo need to implement and enforce stringent safety and security measures within maritime activities. This includes regular inspections of vessels, adherence to international maritime safety standards, and the presence of security personnel to deter illegal activities.

There is need to engage local communities in the planning and decision-making processes related to sea transport. This ensures that the benefits of maritime trade are distributed equitably, and potential negative impacts on local communities are mitigated.

The ministry of trade and development needs to advocate for and participate in regional and international trade facilitation agreements that can enhance the ease of doing business through sea transport. This includes agreements to reduce tariffs, streamline regulations, and facilitate smoother cross-border trade.

There need for the government of Somalia to establish a routine maintenance schedule for maritime infrastructure to address wear and tear. Regular maintenance ensures that ports and docking facilities remain in optimal condition, minimizing disruptions to trade activities.

5.3.3 Objective Three: Effects of Air transport on trade activities in Kismayo, Somalia.

There is a strong need to prioritize safety and security measures within air transport activities. This includes strict adherence to international aviation safety standards, regular maintenance of aircraft, and robust security protocols to instill confidence in passengers and traders.

The study recommends that there is need to embrace modern technology in air transport operations, such as advanced navigation systems, real-time tracking, and efficient communication tools. This ensures accurate information, improves safety, and contributes to the timeliness of trade activities.

There is need to explore the possibility of establishing new air routes to connect Kismayo with emerging markets and trade partners. This diversification can contribute to the resilience of trade activities.

There is a need for traders to embrace modern technology in air transport operations, such as advanced navigation systems, real-time tracking, and efficient communication tools. This ensures accurate information, improves safety, and contributes to the timeliness of trade activities.

It is imperative that you have a wrap-up meeting once your trading operations are over so that you may discuss your achievements and shortcomings. It's a terrific chance to talk about what went wrong and how things may be improved for trade operations in the future. These gatherings assist you in enhancing your task administration, which will be advantageous for upcoming trade operations.

5.4 Contribution to knowledge of the study

The development of upgraded accessibility indicators, which have increased their quality and accuracy in four areas, was made possible by this study. These indicators were created to better capture the benefits of improved transportation infrastructure on trading activities. Findings on the transportation infrastructure in trade activities would facilitate the monitoring of various tasks inside a trade activity and aid in the time management of each trading activity. This would aid in raising staff productivity in addition to offering the advantages of efficient resource use, prompt trading activity completion, and successful outcomes.

Furthermore, the findings of this study will aid in the clarification of roles and duties, trading activities, risks, and time management—all of which are major determinants of the efficacy of trade operations. Therefore, trade operations need to be effective for an organization to function successfully. This would support preserving coordination, organizing the entire working process, completing tasks on schedule, and accomplishing the organization's objectives. This study suggests that successful execution of the timetable management plan should be one of the main goals since transportation infrastructure has a beneficial impact on the efficacy of trade activities.

5.5 Suggestions for Further Study

More investigation is required on the effects of particular transportation subsectors, such as the building of roads and railroads, on the functioning of Somalia's commerce industry. Realizing the true impact of ICT on trade sector performance requires breaking down trading items into consumables and capital goods. It would also be interesting to determine and understand why energy has a negative yet notable impact on Somalia's commerce sector's performance.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

I am student of Kampala International University carrying an academic research in the transport infrastructure and trade activities in Kismayo district Somalia. I would want to ask you some questions on certain matters relate with transport infrastructure, the information you give me will be treated as confidential, academics, and I appreciate your cooperation. May God continue to bless you.

SECTION A, Profile of Respondents

In the area provided below, please check (✓) the appropriate boxes as you see suitable.

SECTION A:

Demographic profiles

1. Gender profile:

Male ☐

Female ☐

2. Age

18-23 ☐

24-29 ☐

30-35 ☐

36-41 ☐

3. Job title

Border Guards ☐

Customs Officials ☐

Port Operators ☐

4. Level Education

Diploma ☐

Bachelor ☐

Master ☐

5. Length of employment:

Less than 1yr ☐

1-5 yrs ☐

6-10 ☐

More than 10 yrs ☐

Response Mode:

Please select the appropriate and suitable answer with your best option in questions below:

SECTION B: EFFECT OF ROAD TRANSPORT ON TRADE ACTIVITIES

Please complete the following statements by ticking (✓) the phrase that matches your feeling most closely.

SA: Strongly Agree

A: Agree

N: Not Sure

D: Disagree

SD: Strongly disagree.

ROAD TRANSPORT					
Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
The quality of road infrastructure in Kismayo impact the volume of trade activities in the region					
The efficiency of road transport services influence the timeliness and reliability of goods delivery in Kismayo					
Improved road infrastructure contributes to the reduction of transaction costs for traders in Kismayo					
Road transport facilitates cross-border trade and regional economic integration in Kismayo.					
The availability and accessibility of road transport influences the establishment and growth of small businesses engaged in trade in Kismayo					
Road transport accessibility influences the establishment of new markets and trading routes in and around Kismayo.					
Road transport contributes to the cultural exchange and diversity of goods in the Kismayo district					

SECTION C: EFFECT OF SEA TRANSPORT ON TRADE ACTIVITIES

Please complete the following statements by ticking (✓) the phrase that matches your feeling most closely.

SA: Strongly Agree

A: Agree

N: Not Sure

D: Disagree

SD: Strongly disagree.

SEA TRANSPORT					
Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Only a small number of deep water ports handle significant cargo quantities due to the scarcity of suitable sites, which causes lengthy wait times at the ports.					
There is a strong interdependence between maritime infrastructure and foreign trade in Somalia.					
The availability and accessibility of sea transport influence the establishment and growth of small businesses engaged in trade in Kismayo.					
Improved maritime infrastructure contributes to the reduction of transaction costs for traders in Kismayo					
Sea transport contributes to sustainable development and resilience in the face of environmental challenges in Kismayo.					
Information about marine transporters has to be recorded. Investors give great weight					

to the company's historical, present, and anticipated financial performance when determining whether to finance trading operations.					
Shipping costs and tariffs influence the pricing and competitiveness of goods in the local market in Kismayo.					
Sea transport accessibility influences the establishment of new markets and trading routes in and around Kismayo.					

SECTION D: EFFECT OF AIR TRANSPORT ON TRADE ACTIVITIES

Please complete the following statements by ticking (✓) the phrase that matches your feeling most closely.

SA: Strongly Agree

A: Agree

N: Not Sure

D: Disagree

SD: Strongly disagree.

AIR TRANSPORT					
Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Air transportation costs influence the pricing and competitiveness of goods in the local market in Kismayo.					
The reliability of air transport schedules affect the timeliness of goods delivery and trade transactions in Kismayo					

Air transportation conditions impact the decision-making process of traders in selecting markets and suppliers. This means you can react as quickly as possible, too.					
Air transport play in fostering job creation and income generation within the trade sector in Kismayo.					
In addition to being essential in promoting tourism, air transportation guarantees fair access for all parties involved in international trade.					

APPENDIX II: KEY INFORMANT INTERVIEW GUIDE

- 1) What are the effects of road transport on trade in Kismayo district?
- 2) How has road transport contributed to trade in goods? What about services such as health, schools, sports etc?
- 3) What are the effects of sea transport on trade in Kismayo district?
- 4) How has sea transport contributed to trade in goods? What about services such as health, schools, sports etc?
- 5) What are the effects of air transport on trade in Kismayo district?
- 6) How has air transport contributed to trade in goods? What about services such as health, schools, sports etc?

APPENDIX III: WORK PLAN

Time resources required for the thesis report.

2022 -2023	Sep	Oct	Nov	Dec.	Jan	Feb	Mar	Apr	May	Jun	Jul
Proposal											
Data Collection											
Data Compiling and Analysis											
Thesis Report Writing											

APPENDIX IV: RESEARCH BUDGET ESTIMATES

ITEM	AMOUNT IN UGX
Stationery	200,000
Accommodation	700,000
Research Equipment	400,000
Consultation expenses	550,000
Meals	600,000
Transport	600,000
Miscellaneous	400,000
GRAND TOTAL	3,450,000