

# **AFRICAN CONTINENTAL FREE TRADE AGREEMENT (AfCFTA) ON SOLVING THE SUPPLY CHAIN MANAGEMENT CHAL- LENGES AND LEVERAGING OPPORTUNI- TIES: A CASE STUDY OF KENYA**

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## Abstract

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Abstract  <p>This study conducts a comprehensive assessment of the implications of the African Continental Free Trade Area (AfCFTA) for supply chain management in Kenya, with a particular emphasis on the associated challenges and opportunities. The AfCFTA, a landmark agreement aimed at creating a single continental market for goods and services, has significant potential to reshape regional trade dynamics and supply chain strategies across Africa. By adopting a mixed-methods approach, this study provides a multifaceted exploration of how the AfCFTA influences supply chain management in Kenya. The research begins by evaluating stakeholder awareness and understanding of the AfCFTA's provisions and objectives. This involves gathering insights from a diverse range of participants, including policymakers, business leaders, trade associations, and logistics providers. Through surveys, interviews, and focus groups, the study assesses the level of knowledge among these stakeholders regarding the agreement's impact on trade barriers, tariffs, and regulatory frameworks.</p> <p>The results indicate a varied awareness of the AfCFTA among stakeholders, with differing views on its effectiveness in reducing trade barriers and harmonizing customs procedures. Businesses are progressively adopting strategies like diversifying supply chains, integrating digital technologies, and refining logistics operations to exploit the new trade environment. Despite these advancements, several challenges such as inadequate infrastructure, bureaucratic delays, and persistent non-tariff barriers continue to impede optimal benefits from the AfCFTA.</p>		
Keywords  AfCFTA, supply chain management, trade barriers, regional integration, Kenya.		

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## 1 Introduction

### 1.1 Research Background

The African Continental Free Trade Area Agreement (AfCFTA), initiated as a component of the African Union's Agenda 2063 and officially established in 2018, aims to establish the largest free trade area in the world, addressing economic, and logistical challenges to foster a unified market for goods, services, and capital across Africa (African Union 2015). By eliminating high tariff barriers and enhancing trade logistics and infrastructure, AfCFTA is designed to facilitate smoother goods movement and leverage digital technology for trade processes, thereby improving supply chain efficiency (Barrie et al. 2022; African Development Bank 2020). Despite facing hurdles due to diverse economic conditions and infrastructural differences, the successful implementation of AfCFTA is anticipated to significantly increase intra-African trade, stimulate industrial growth, and contribute to the continent's economic development and poverty alleviation, reflecting Agenda 2063's goals for a prosperous Africa (Campbell 2019; Obeng-Odoom 2020).

In the contemporary globalized world, regional trade agreements (RTAs) have become instrumental in fostering economic integration and development. The African Free Trade Agreement (AfCFTA) was established in 2018, (African Union 2015), which represents a monumental stride in this direction. An important turning point in the dynamics of international commerce is expected to be reached when the world's biggest free trade area is established, surpassing that of the World Commerce Organization. (Schneider-Petsinger 2020.)

The establishment of AfCFTA is based on the African Union's Agenda 2063, which is a long-term plan for the economic and social development of the continent-spanning 50 years from 2013. The objective of the agreement is to establish a unified marketplace for products and services, unrestricted mobility of people, and the flow of money throughout Africa (African Union 2015). This aspiration is in line with the wider global tendency towards regional economic integration, exemplified by organizations like the European Union and the North American Free Trade Agreement (NAFTA).

The motivation behind AfCFTA stems from the distinctive economic and logistical challenges Africa confronts. Historically, the continent has grappled with issues of economic destruction, logistical inefficiencies, and relatively underdeveloped infrastructure. These factors have significantly obstructed intra-African trade and economic growth. The conti-

ment's trade dynamics have been characterized by low levels of intra-regional trade compared to other regions, like Europe and Asia. (Joseph 2022.) AfCFTA seeks to transform the African economy by addressing these systemic issues, one of its core objectives is to dismantle the high tariff barriers that have long muted intra-continental trade. By creating a tariff-free continent, AfCFTA aims to increase market access for African countries, fostering a more integrated market. This is particularly significant for Supply Chain Management (SCM), as lower tariffs and simplified customs procedures can drastically reduce the cost and complexity of cross-border trade. (Babatunde et al. 2020.)

Another critical aspect of AfCFTA is its focus on improving trade logistics. The agreement recognizes the need to streamline border administration and enhance transport infrastructure to facilitate smoother movement of goods across the continent. This includes improving road, rail, and port facilities, which are crucial for efficient SCM. Poor infrastructure has been a significant bottleneck for African trade, with transportation costs in Africa being among the highest globally. (African Development Bank 2020.) The agreement also acknowledges the role of digital technology in modernizing SCM. AfCFTA aims to leverage digital platforms to improve trade facilitation, enabling electronic documentation and payments, which can further reduce trade costs and time. (Kaczmarek 2022.)

However, the implementation of AfCFTA is not without its challenges. The diverse economic profiles of African countries, varying levels of infrastructure, and differing trade policies pose significant hurdles to harmonization. (Okechukwu 218.) Furthermore, the agreement needs to address non-tariff barriers effectively, such as bureaucratic red tape and inconsistent regulatory standards, which can impede trade even in the absence of tariffs (Onwuka & Udegbonam 2019). Despite these challenges, the potential benefits of AfCFTA are enormous. The United Nations Economic Commission for Africa (2019) estimates that AfCFTA could increase intra-African trade by 50% with the largest gains in industrial goods. This is expected to foster industrialization, attract foreign direct investment, and create employment opportunities, ultimately contributing to the continent's economic development and poverty reduction.

The African Continental Free Trade Agreement (AfCFTA) represents a transformative initiative in the context of regional trade agreements and globalization. Its successful implementation has the potential to significantly reshape Africa's economic landscape, particularly in the realm of Supply Chain Management. By addressing key challenges such as high tariffs, poor infrastructure, and logistical inefficiencies, AfCFTA stands to enhance trade efficiency, foster economic integration, and contribute to the socio-economic development of the continent. (Obeng-Odoom 2020.)

## 1.2 Objectives and Research Questions

To assess the impact of the African Continental Free Trade Agreement (AfCFTA) on the supply chain and its implications for social and economic aspects in each of the member countries. The specific objectives are:

To discover how supply chain management issues are addressed by the African Continental Free Trade Area (AfCFTA).

To find out what the main goals of the African Free Trade Agreement are to make Africa better connected through roads, rail, and waterways.

To evaluate the effectiveness of the AfCFTA in resolving cross-border issues related to the movement of goods and services within the African market.

### Research Questions

This study's central research question is:

How does the African Free Trade Agreement influence supply chain management, particularly in addressing existing challenges and leveraging opportunities in Kenya?

To comprehensively address this overarching question, the study will delve into the following sub-questions:

What are the challenges in the supply chain management process? Has AfCFTA solved these challenges?

What is the essence of the African free trade agreement in curbing the challenges in the African market links like roads, railroads, and sea routes?

Has the AfCFTA solved the cross-border issues relating to the African market in the movements of goods and services?

### Limitations

This research, while comprehensive in its scope, recognizes several characteristic limitations that must be considered. Foremost among these is the geographical concentration of Kenya. While Kenya is a key case study due to its strategic position in East African trade and relatively advanced infrastructural landscape, this focus may inadvertently narrow the lens through which the broader, continent-wide economic contexts and variances are viewed. The diverse economic landscapes, varying levels of infrastructural development, and distinct trade policies across the African continent mean that the findings derived from

the Kenyan context may only be partially generalizable or reflective of the entire African experience under the African Continental Free Trade Agreement (AfCFTA). In addition, the temporal reach of this study aligns with the current implementation phase of AfCFTA, which adds a separate limit. It is growing and changing constantly, with new policies and strategies being created. So, the conclusions will be connected to this time in its lifespan. This has major significance because those policies' long-term consequences and maturation might give different outcomes than one can see now. This study aims to look deep into the matter to see how well AfCFTA works on supply chain management in Kenya. However, these limits must be considered when applied outside of that reach.

### 1.3 Theoretical Framework

This section will investigate the theoretical foundations and research methodologies that will guide this study on the impact of the African Continental Free Trade Agreement (AfCFTA) on supply chain management and its broader socio-economic implications within participating nations.

#### **Theory**

This research draws upon a multifaceted theoretical framework that encompasses concepts from international trade, economic integration, logistics, and socio-economic development. The central theoretical foundation rests on the premise that regional trade agreements, such as AfCFTA, play a pivotal role in shaping economic dynamics within participating regions. (Schneider-Petsinger 2020.)

The study adopts theories of economic integration, akin to those observed in the European Union and NAFTA, to comprehend how the African Continental Free Commerce Area (AfCFTA) seeks to establish a unified market for products and services, promoting intra-African commerce (African Union 2015). Additionally, theories related to logistics and supply chain management will be employed to assess the agreement's impact on trade efficiency, particularly in terms of reducing high tariffs and improving infrastructure (Babatunde 2020; African Development Bank 2020). Moreover, the study will incorporate socio-economic development theories to evaluate how AfCFTA's goals align with broader objectives of industrialization, job creation, inclusive growth, poverty reduction, and inclusive policy.

#### 1.4 Research Methodology and Data Collection

Using a mixed-methods research methodology, the effect of AfCFTA will be thoroughly investigated. To give a comprehensive study, this strategy will combine qualitative and quantitative research methodologies.

##### **Qualitative Research**

For qualitative insights, this study will conduct an in-depth content analysis of existing literature, reports, and documents. These sources will include scholarly articles, government publications, policy documents, and reports from international organizations. The study will concentrate on acquiring a thorough knowledge of the attitudes, experiences, and issues connected with AfCFTA as regarded by key stakeholders, including government officials, business leaders, and trade and logistics specialists. Qualitative data obtained through content analysis will contribute to a nuanced comprehension of the multifaceted issues concerning AfCFTA's implementation and its impact on supply chain management.

##### **Quantitative Research**

The quantitative component of this study will rely on secondary data obtained from reputable sources, including the World Trade Organization (WTO), the Central Bank of Kenya, and the International Monetary Fund (IMF). This secondary data will encompass trade patterns, logistics performance metrics, and various economic indicators. To analyze this quantitative data, it will be subjected to rigorous statistical analyses, aligning with a conceptual framework developed for the study. These statistical analyses will allow for the assessment of the statistical significance of AfCFTA's impact on supply chain management and its broader implications for socioeconomic factors. By utilizing secondary data from these authoritative sources, this research ensures a robust and empirical foundation for its quantitative findings, contributing to a comprehensive understanding of AfCFTA's effects.

##### **Mixed Method**

This mixed-methods approach, incorporating both qualitative insights from content analysis and quantitative data analysis utilizing secondary sources, aims to provide a holistic and evidence-based examination of AfCFTA's influence on supply chain management and socio-economic development within participating nations, with a specific focus on Kenya.

## 1.5 Thesis Structure

This study will be structured into several chapters to ensure a coherent and systematic presentation of the research findings. Figure 1 below is an outline of the thesis structure:

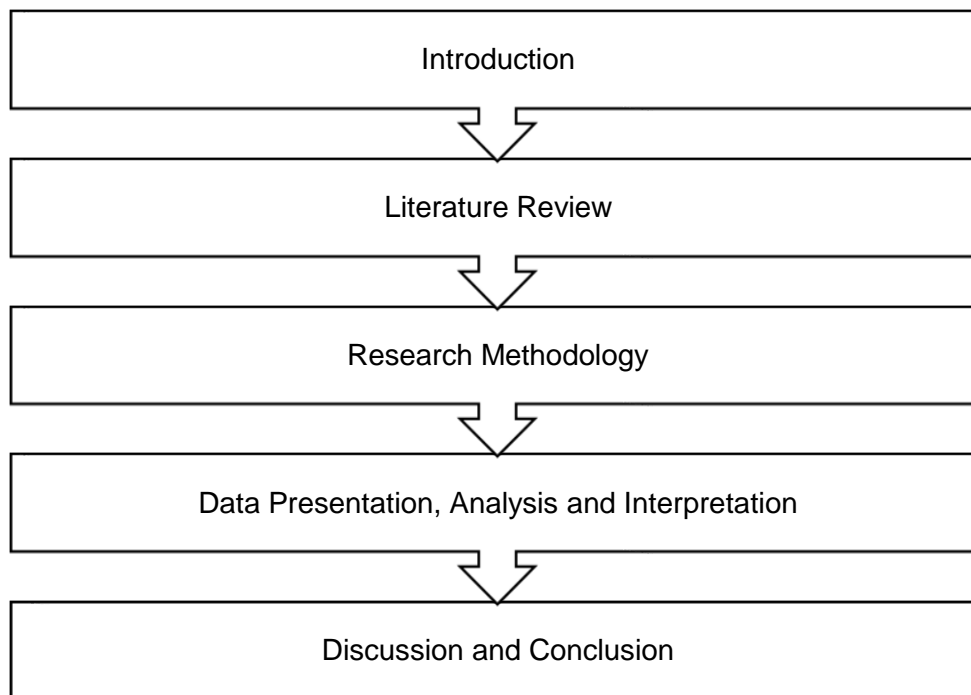


Figure 1. Thesis Structure

In conclusion, this chapter establishes the foundation for the study, highlighting the significance of AfCFTA in the context of economic integration and SCM. It positions Kenya as a key case study and outlines the objectives, research questions, limitations, and significance of the research, setting the stage for a comprehensive exploration of AfCFTA's impact in subsequent chapters.

## 2 Literature Review

### 2.1 Theoretical Review

#### Theory of Regional Integration

This chapter will discuss the theoretical and empirical evidence surrounding the African Continental Free Trade Area (AfCFTA) and how it affects supply chain management in Kenya. This two-part chapter will cover a theoretical review and an empirical review. The empirical review will examine what existing studies have to say about AfCFTA and its findings that relate to this current study.

Regional Integration Theory, as pioneered by economists like Drysdale, allows us to understand the potential benefits and dynamics of countries in the same area coming together to form a single, larger political or economic entity (Drysdale 2022). For example, this theory is particularly relevant to the African Continental Free Trade Agreement (AfCFTA) and how this significant trade deal will reshape Africa's economic landscape.

When it comes to regional integration, the theory underlines how important it is to reduce trade barriers and combine policies among participating nations. Doing so will enhance trade flows, promote economic development, and create a more integrated and robust regional economy. The AfCFTA shows how powerful this theory can be with their single market goal since it is an example of what can happen when people work together.

This theory also shows how the AfCFTA can transform Africa regarding Supply Chain Management (SCM). Making cross-border transactions easier through streamlined procedures, harmonized regulations, and reduced tariffs, will not only fix the logistical inefficiencies on the continent but will also open many doors as well. Now, African nations are going to have a better competitive edge on the global stage when it comes to supply chains (Asche 2021). If the significance of the AfCFTA's impact is not yet fully appreciated, consider that the creation of such an economic union extends beyond merely enhancing GDP growth rates. It cultivates an environment conducive to comprehensive socio-economic development (Freund & Ornelas, 2010) This includes job creation, improved living conditions, and enhanced regional stability – all of which are extremely important if we want long-term sustainability and prosperity for the African continent.

After taking all that in from Regional Integration Theory, it becomes clear that the African Free Trade Agreement is not something small; no way, shape, or form at all. It is another big step towards Africa becoming more unified and prosperous. Using the principles of this

theory, AfCFTA is ready to tackle some of the biggest challenges that face the continent and cover a road that only leads to economic integration, regional cohesion, and shared growth (Freund & Ornelas 2010).

## 2.2 Supply Chain Management Network Theory

Supply Chain Management Network Theory, as Harland (2006) and others have said, looks at the complex connections and interactions involved in supply chains. This perspective of how supply chains work within a networked structure can be very useful for AfCFTA. It shows how to optimize those networks to increase their efficiency and overall effectiveness.

At the core of this theory is the idea that supply chains are not simple, consecutive events. They are complex, interwoven networks involving many different stakeholders like manufacturers, suppliers, distributors, and customers. Each one of these stakeholders is connected to all the others. Because the actions and decisions of each one affect the whole network. In AfCFTA's case, this emphasizes how working together is important for progress.

One strength of using network theory with AfCFTA is its view of supply chains. This means it acknowledges that there are many challenges African countries face in terms of logistics, infrastructure limitations, and regulatory disparities among them. Enhanced collaboration between all entities involved in working together on a more integrated network will help overcome these challenges (Luke & Walters 2022).

Information Technology plays a large role in present-day supply chains, too, according to Network Theory. Moreover, with AfCFTA comes an increased opportunity for deploying advanced technologies such as blockchain, IoT (Internet of Things), and AI (Artificial Intelligence). Implementing these technologies can boost real-time data exchange across supply chain networks through improved transparency, which leads to better decision-making.

Lastly, this theory also states that having adaptable and flexible supply chains is vital in dynamic market environments like Africa's, which is still rapidly evolving today. Being able to respond quickly to changes gives businesses an upper hand over their competitors when it comes to meeting consumer demands, for example. With AfCFTA creating a space for collaboration and cooperation between all African nations, that can collectively work towards stronger response times from supply chain networks too. (Bowersox et al 2020.)

## 2.3 Empirical Review

According to a study conducted by Babatunde et al. (2020) on the effects of AfCFTA on supply chain management in Africa, AfCFTA has the potential to reduce trade costs and

improve logistics performance. This study found that across multiple African countries, AfCFTA can provide noticeable improvements in enhancing supply chain efficiency by simplifying customs procedures and reducing trade barriers. It observed how AfCFTA functions as a streamlining tool for supply chain processes, which is also a part of this study's investigation.

The current research stemmed from Babatunde's (2020) study, which inspected how effective the agreement is at streamlining supply chain processes. Nevertheless, even then, they still noticed a need for more information when looking at the specific impacts of AfCFTA on individual countries' supply chains like Kenya's, something this study aims to address.

An investigation by Saygili et al. (2018) explored what else AfCFTA could do for African markets. A diverse range of African countries, including Kenya, were used for this study. AfCFTA is likely to boost trade between African countries by making importing and exporting cheaper. The fact that the findings are directly related to the current study is very important. They further highlight the potential of AfCFTA in reshaping the trade landscape in Africa, which has significant implications for supply chain management. However, the study's gap was in its exploration of the direct impact of AfCFTA on the logistical and supply chain-specific challenges, offering an avenue for further research in this area.

### 3 Methodology

#### 3.1 Research Design

This study employs a mixed-methods case study research design, combining both quantitative and qualitative approaches, to investigate the impact of the African Continental Free Trade Agreement (AfCFTA) on supply chain management challenges and opportunities in Kenya. The case study design is well-suited for an in-depth and contextual analysis of the research problem, allowing for a comprehensive exploration of the complex issues surrounding the implementation and effects of the AfCFTA on supply chains in Kenya (Yin 2017).

The mixed-methods approach involves collecting and analyzing both quantitative and qualitative data, providing a more complete understanding of the research problem than either approach alone (Plano Clark 2017). The quantitative component will involve analyzing trade data, supply chain performance metrics, and survey data to assess the impact of the AfCFTA on factors such as trade flows, logistical costs, and supply chain efficiency. The qualitative component will utilize interviews, focus groups, and document analysis to gain deeper insights into the perspectives, experiences, and strategies of supply chain stakeholders navigating the opportunities and challenges presented by the AfCFTA.

Kenya was selected as the case study focus due to its significant economic influence and active participation in the AfCFTA as a member state. As a major regional hub for trade and logistics, Kenya represents a critical case for understanding the practical implications and potential of the AfCFTA for supply chain management on the African continent. By examining the Kenyan context in-depth, this study aims to generate valuable insights and lessons that can inform policy, practice, and future research related to AfCFTA and supply chain management across Africa.

#### 3.2 Data Collection

This study utilizes a mixed-methods approach, combining both primary and secondary data collection methods, as well as quantitative and qualitative techniques. The incorporation of multiple data sources and analytical approaches is intended to provide a more comprehensive and robust understanding of the research problem (Creswell & Creswell 2017).

Primary data will be collected through surveys, semi-structured interviews, and focus group discussions with key stakeholders in the Kenyan supply chain industry, including logistics providers, manufacturers, retailers, and relevant government agencies. The surveys will

gather quantitative data on factors such as trade volumes, logistical costs, and supply chain performance metrics before and after the implementation of the AfCFTA. The interviews and focus groups will capture qualitative insights into the perspectives, experiences, and strategies of supply chain actors in navigating the opportunities and challenges presented by the AfCFTA. Secondary data will be obtained from various sources, including trade databases, industry reports, academic literature, and government publications. This will involve analyzing quantitative data on trade flows, logistical performance indicators, and supply chain efficiency measures, as well as qualitative information from relevant documents and prior research studies. The quantitative data analysis will involve statistical techniques such as descriptive statistics, regression analysis, and time-series analysis to assess the impact of the AfCFTA on trade volumes, logistical costs, and supply chain performance metrics. The qualitative data analysis will employ thematic coding and content analysis methods to identify patterns, themes, and insights from the interviews, focus groups, and document analysis.

### 3.3 Primary Data Collection

Primary data will be collected through a survey questionnaire that incorporates both open-ended and closed-ended questions. The questionnaire has been specifically designed for this study to capture a multifaceted perspective on the impact of the African Continental Free Trade Agreement (AfCFTA) on supply chain management in Kenya.

The closed-ended questions in the questionnaire will gather quantitative data on various aspects of supply chain performance such as trade volumes, logistical costs, lead times, and efficiency metrics. These questions will enable statistical analysis and comparisons of supply chain performance before and after the implementation of the AfCFTA.

Complementing the quantitative data, the open-ended questions in the questionnaire will elicit qualitative insights from respondents. These questions will delve into the experiences, perspectives, and strategies of supply chain stakeholders in navigating the opportunities and challenges presented by the AfCFTA. Respondents will have the opportunity to provide detailed responses, share their narratives, and offer nuanced perspectives on the impact of the trade agreement on their supply chain operations.

The questionnaire will be administered to a diverse range of supply chain stakeholders in Kenya, including logistics providers, manufacturers, retailers, and relevant government agencies. This approach ensures the capture of perspectives from various actors within the supply chain ecosystem, enhancing the comprehensiveness and validity of the findings.

The combination of closed-ended and open-ended questions in the questionnaire allows for the collection of both quantitative and qualitative data within a single instrument. The mixed methods approach to primary data collection is designed to provide a holistic understanding of the research problem, leveraging the strengths of both quantitative and qualitative techniques in a complementary manner. Through the careful design and implementation of this survey questionnaire, the study aims to generate rich and multidimensional insights into the impact of the AfCFTA on supply chain management in Kenya, informing both theoretical understanding and practical strategies in the context of this significant trade agreement.

### 3.4 Qualitative Data Collection

The qualitative component involved semi-structured interviews with key informants, including government officials involved in the negotiation, implementation, and monitoring of the AfCFTA, supply chain managers and logistics professionals in Kenyan companies operating within the AfCFTA region, and representatives from industry associations, trade unions, and civil society organizations related to supply chain management and trade in Kenya.

To identify and recruit potential interviewees, a purposive sampling approach was employed. Over approximately two months, targeted emails were sent to relevant individuals and organizations, inviting them to participate in the study. The email included a brief introduction to the research, an explanation of the selection criteria, and a request for their voluntary participation. Recipients were asked to indicate their category (e.g., government representative, private sector player, or member of the public) to facilitate the recruitment process.

Additionally, physical visits were made to select government offices, corporate headquarters, and organizational premises within the Nairobi metropolitan area. During these visits, the researcher directly approached potential participants, explained the study's objectives, and requested their involvement in the interviews. This multi-pronged approach aimed to ensure a diverse and representative sample of key informants, capturing a range of perspectives and experiences related to the research objectives.

The semi-structured interviews explored participants' perceptions, experiences, and insights related to the challenges and opportunities presented by the AfCFTA, the strategies and initiatives undertaken to address supply chain issues, and the overall impact on social and economic aspects. An interview guide was developed to ensure consistency across interviews and to cover the key themes of the study while allowing flexibility for probing and follow-up questions based on participants' responses.

Through this qualitative data collection approach, the study gathered rich, in-depth insights from individuals and organizations directly involved in or affected by the implementation of the AfCFTA in Kenya. Their perspectives and experiences contributed valuable context and nuance to the quantitative findings, enabling a more comprehensive understanding of the research problem.

### 3.5 Quantitative Data Collective

The quantitative component will involve a survey questionnaire administered to a sample of Kenyan businesses engaged in international trade and supply chain activities. The questionnaire will collect data on various aspects of supply chain performance, such as lead times, logistics costs, inventory levels, and delivery reliability, as well as the perceived impact of the AfCFTA on these indicators. The survey will also gather information on the strategies and technological innovations adopted by businesses to address supply chain challenges.

Sampling for the qualitative component, a purposive sampling technique will be used to identify and select key informants for the interviews. The sample will be selected based on the participant's knowledge, experience, and involvement in the implementation of the AfCFTA and supply chain management in Kenya. The researcher will aim to achieve a diverse and representative sample, including participants from the public sector, private sector, and civil society organizations.

For the quantitative component, a random sampling approach will be used to select a representative sample of Kenyan businesses engaged in international trade and supply chain activities. The sample size will be determined based on statistical power calculations to ensure the reliability and generalizability of the survey results.

### 3.6 Secondary Data Collection

Secondary data will be collected from various sources, including government reports, policy documents, and official statements from the Kenyan government, the African Union, and other relevant regional bodies related to the AfCFTA and its implementation in Kenya; academic journal articles, books, and industry reports from databases such as Web of Science, Scopus, and Google Scholar on the AfCFTA, supply chain management, and trade facilitation in Africa; news articles, media reports, and industry publications from outlets like The East African, Business Daily Africa, and industry-specific trade journals covering the progress, challenges, and impact of the AfCFTA in Kenya and other member countries; and

statistical data from national sources such as the Kenya National Bureau of Statistics (KNBS) and the Central Bank of Kenya (CBK), as well as international organizations like the United Nations Conference on Trade and Development (UNCTAD), and the African Development Bank (AfDB) on trade, investment, and supply chain indicators. The secondary data will be used to corroborate and supplement the findings from the primary data collection, as well as to provide a broader context for understanding the research problem.

### 3.7 Data Analysis

The qualitative data collected through the interviews will be analyzed using a thematic analysis approach. The interviews will be transcribed, and the transcripts will be coded to identify recurring themes, patterns, and relationships. The quantitative data collected through the survey questionnaire will be analyzed using statistical methods, such as descriptive statistics, regression analysis, and hypothesis testing. The analysis will aim to identify the key supply chain performance indicators, the factors influencing these indicators, and the perceived impact of the AfCFTA on the businesses' supply chain operations. The findings from the qualitative and quantitative analyses will be integrated to provide a comprehensive understanding of the research problem and to triangulate the results.

### 3.8 Ethical Considerations

The study will adhere to ethical research practices, including obtaining informed consent from all participants and ensuring their voluntary participation, ensuring the confidentiality and anonymity of participants, as well as the secure storage and protection of data, avoiding any potential harm or risk to participants and prioritizing their well-being, and maintaining objectivity and transparency in the research process and reporting of findings.

### 3.9 Limitations

The study may face some limitations, including potential biases or subjectivity in the participants' responses due to their personal or professional affiliations, difficulty in accessing certain government or corporate data due to confidentiality concerns or limited availability (Rowley, 2004; Saunders et al. 2009), and challenges in generalizing the findings beyond the Kenyan context. The implementation and impact of the AfCFTA may vary across different member countries and potential changes in the political, economic, or regulatory environment during the study, which may affect the relevance and timeliness of the findings.

## 4 Data Analysis

### 4.1 Introduction

This chapter presents the findings from a survey assessing the impact of the African Continental Free Trade Agreement (AfCFTA) on supply chain management and related economic aspects across member countries. It begins with an overview of the response rate and participant demographics. The analysis and discussion examine how the AfCFTA addresses supply chain issues, including awareness of the agreement, perceptions of its impact on reducing trade barriers, and strategies adopted by businesses to leverage the AfCFTA for improving supply chain efficiency.

Additionally, it focuses on the AfCFTA's goals to enhance regional connectivity through infrastructure development, surrounding aspects such as the quality and availability of transportation infrastructure, utilization of multimodal transportation systems, and the importance of improved regional connectivity for supply chain operations. Furthermore, it evaluates the effectiveness of the AfCFTA in resolving cross-border trade challenges, exploring issues faced by businesses, the impact of addressing differences in customs and border management procedures, and strategies employed by businesses to navigate cross-border issues within the AfCFTA region. Throughout, the findings are interpreted and compared to previous studies, providing insight into the AfCFTA's impact, challenges, and opportunities for supply chain operations and stakeholders in the region.

#### 4.1.1 Response Rate

Table 1 displays the response rate for the survey conducted in this study. Out of the total 90 questionnaires distributed, 80 respondents (88.89%) completed and returned the questionnaires, while 10 respondents (11.11%) did not participate or return the incomplete questionnaires. This high response rate of nearly 89% suggests that the survey results are likely to be representative of the target population, providing a reliable basis for analysis and interpretation. According to Mugenda and Mugenda (2003) a 50% response rate is considered adequate, 60% good and above 70% response rate very good. The response rate is shown in Table 1 below. The high response rate was attributed to the fact that the researcher obtained the data on face-to-face contact.

Table 1. Response rate according to Mugenda and Mugenda (2003)

Response	Frequency	Percentage
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Complete questionnaire	80	88.89
Incomplete questionnaire	10	11.11
Total	90	100.0

The questionnaire response rate encompassed the entire sample size, comprising both individuals who completed and returned the distributed questionnaires and those who did not participate in the survey as shown above.

#### 4.2 Demographic Information

##### Gender Distribution

Figure 2 illustrates the gender distribution of the respondents who participated in the survey. The data reveals that 42 respondents (52.5%) were male, while 38 respondents (47.5%) were female. This relatively balanced representation of both genders in the sample enhances the diversity of perspectives and ensures that the findings are not skewed toward a particular gender.

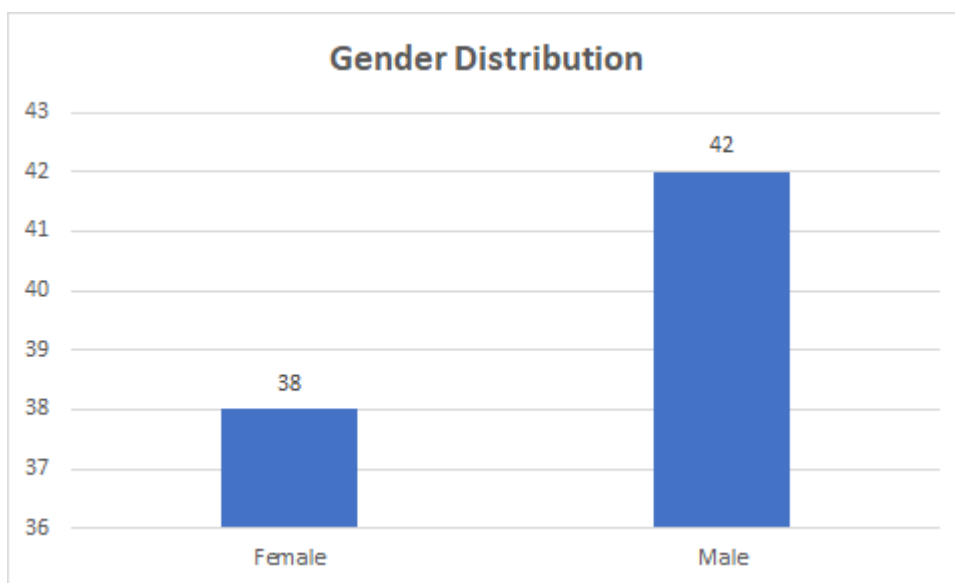


Figure 2. Gender Distribution

##### Education Level

Figure 3 presents the educational level of the respondents. The largest group comprises 27 respondents (33.8%) with a master's degree, followed by 21 respondents (26.3%) with a secondary education level. Additionally, 14 respondents (17.5%) hold a bachelor's degree, 12 respondents (15%) have a Diploma, and 6 respondents (7.5%) possess a PhD. This

distribution of educational levels suggests a diverse sample, encompassing respondents with varying levels of academic qualifications and potentially diverse perspectives on the research topic.

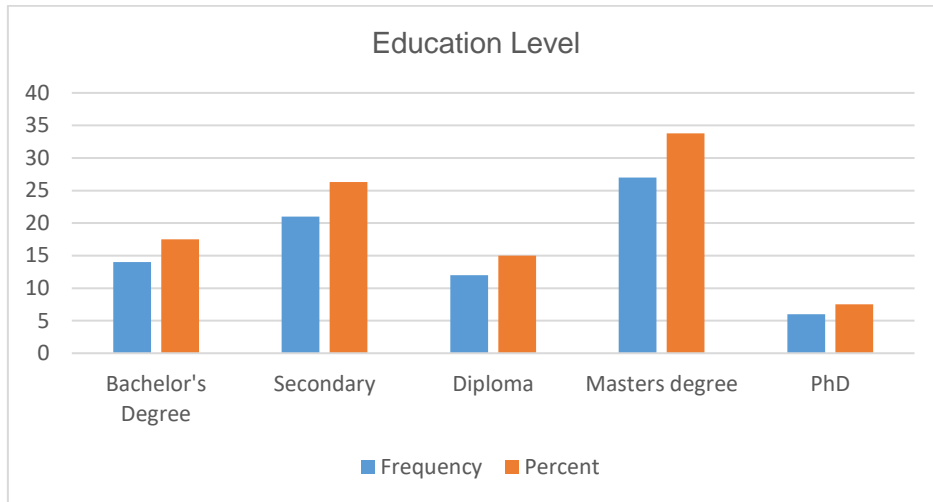


Figure 3. Education Level

#### Respondents Category

Figure 4 categorizes the respondents based on their affiliation or representation. The largest group comprises 34 respondents (42.5%) from the public, while 23 respondents (28.7%) represent the private sector, and another 23 respondents (28.7%) are government representatives. This balanced representation of different stakeholder groups ensures that the findings capture a comprehensive understanding of the research topic from various perspectives, including the public, private sector, and government entities.

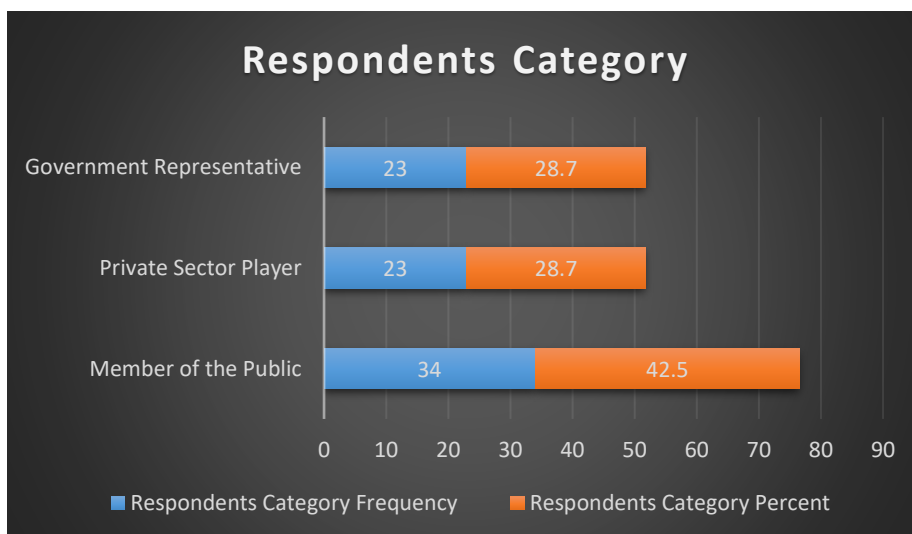


Figure 4. Respondents Category

### 4.3 Objectives

#### 4.3.1 Objective one

##### Awareness

Figure 5 reveals the level of awareness among respondents regarding the African Continental Free Trade Agreement (AfCFTA) and its objectives related to supply chain management. The data indicates that a slight majority of respondents, constituting 52.5%, are cognizant of the AfCFTA and its supply chain management goals. Conversely, a sizable proportion of 47.5% of respondents expressed a lack of awareness concerning this pivotal agreement and its implications for supply chain operations. The mixed levels of awareness observed in this study underscore the importance of effective communication strategies to ensure that all relevant stakeholders are well-informed about the opportunities and challenges presented by the AfCFTA.

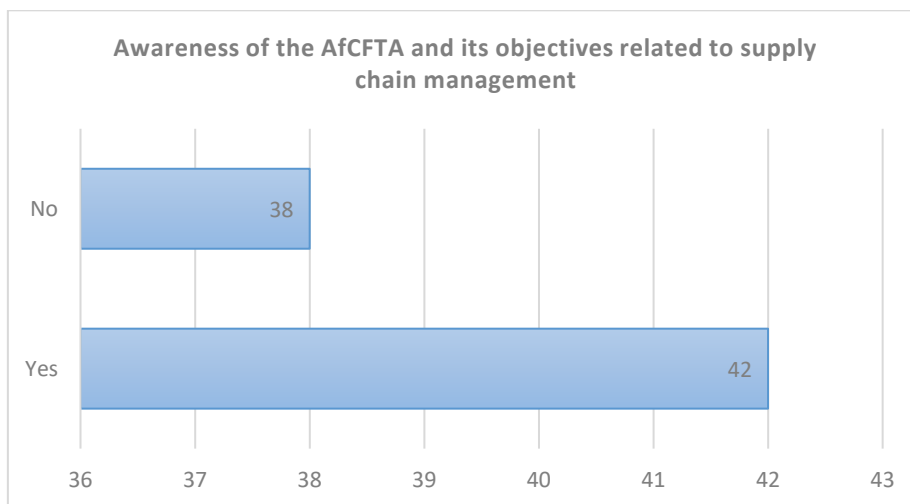


Figure 5. Awareness

##### Rate the impact of the AfCFTA on reducing trade barriers

As shown in Figure 6, delves into the respondents' perceptions of the AfCFTA's impact on reducing trade barriers, such as tariffs and non-tariff barriers, for their respective businesses. The results reveal a diverse range of viewpoints, with 33.8% of respondents perceiving a positive impact, 36.3% holding a neutral stance, and 30% expressing a negative perception. These varied perspectives align with findings from previous research, which suggest that while the AfCFTA aims to facilitate intra-African trade by reducing barriers, the extent and effectiveness of such measures may vary across different sectors and regions. The mixed perceptions observed in this study highlight the need for continued efforts to

address trade barriers and ensure that the benefits of the AfCFTA are equitably distributed across businesses and industries.

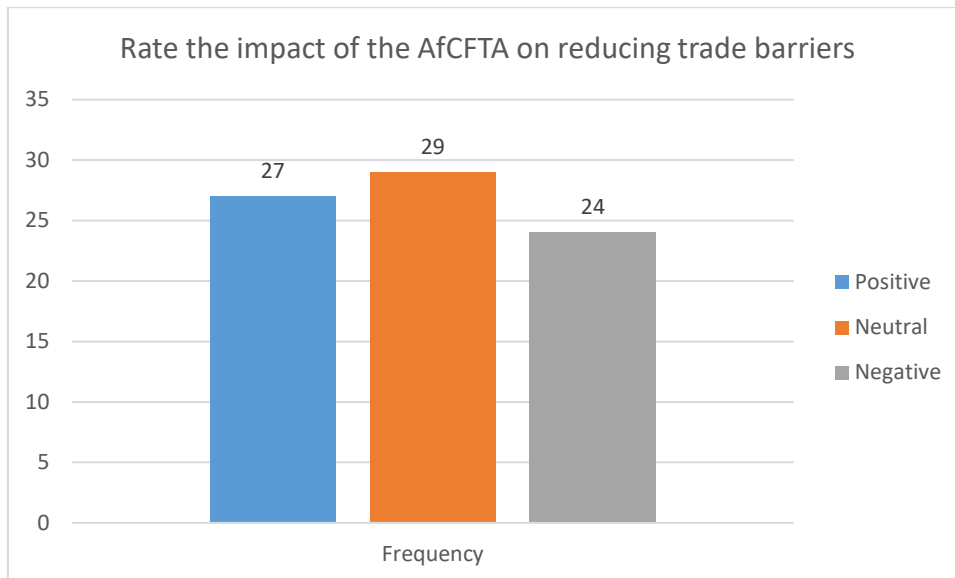


Figure 6. Rate the impact of the AfCFTA on reducing trade barriers

#### Effectiveness of AfCFTA in harmonizing customs and border management procedure

As demonstrated in Figure 7, assesses the respondents' views on the effectiveness of the AfCFTA in harmonizing customs and border management procedures, a crucial aspect of facilitating seamless cross-border trade. The results indicate that 36.3% of respondents find the AfCFTA effective in this regard, while 37.5% hold a neutral stance, and 26.3% perceive it as ineffective. The substantial proportion of respondents expressing neutral or negative perceptions suggests that further efforts are required to streamline and standardize customs procedures within the AfCFTA region, enabling more efficient cross-border trade and supply chain operations.

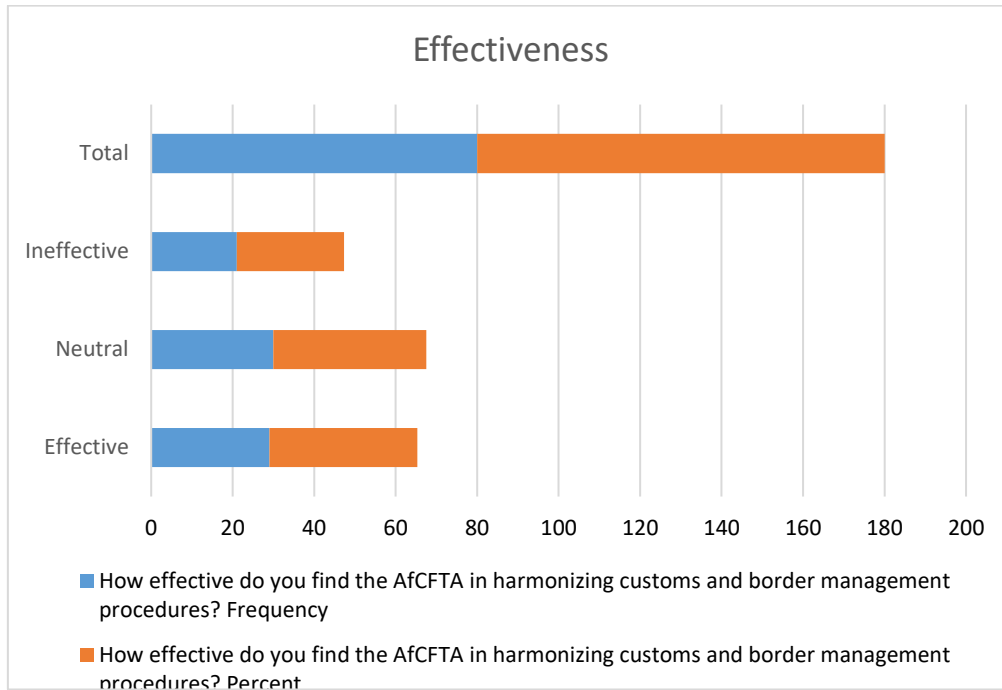


Figure 7. Effectiveness of AfCFTA in harmonizing customs and border management procedure (data, 2024)

#### Maximizing AfCFTA for Supply Chain Efficiency

As illustrated in Figure 8, explores the strategies adopted by businesses to leverage the AfCFTA for improving supply chain efficiency. The results indicate that 23.8% of respondents have diversified their supplier base, 16.3% have invested in digital technologies, 22.5% have optimized logistics, 18.8% have expanded to new markets, and 18.8% have not implemented any specific strategies. The adoption of these strategies by businesses highlights their proactive efforts to navigate the evolving trade landscape and maximize the potential benefits of the AfCFTA.

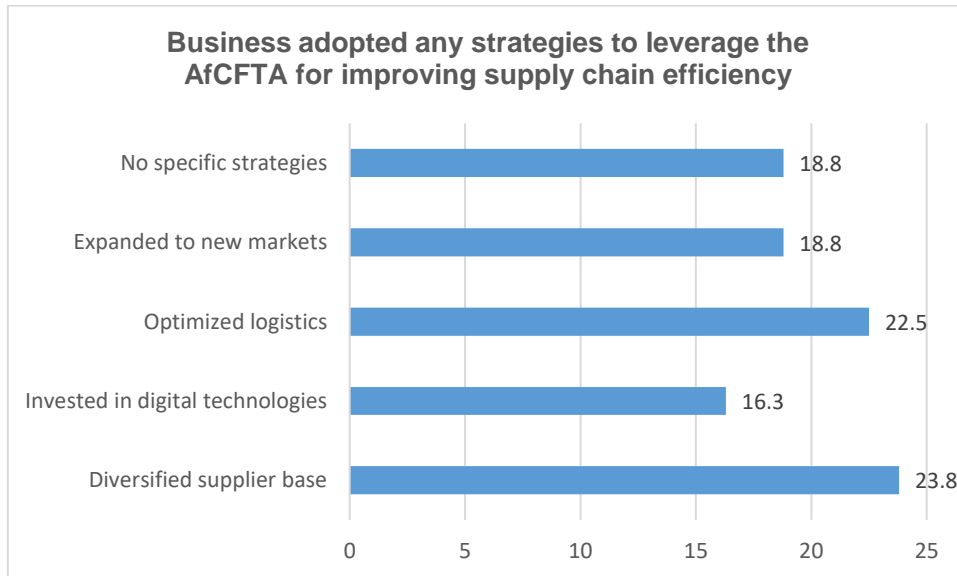


Figure 8. Maximizing AfCFTA for Supply Chain Efficiency

#### 4.3.2 Objective two

Quality and availability of transportation infrastructure (roads, rails, ports) in your business operations

Table 2 presents the respondents' assessment of the quality and availability of transportation infrastructure, encompassing roads, rails, and ports, in their business operations. The results reveal that 30% of respondents consider the infrastructure to be good, while a substantial 43.8% perceive it as average, and 26.3% deem it poor. The substantial proportion of respondents expressing dissatisfaction with the transportation infrastructure underscores the need for concerted efforts and investments to enhance regional connectivity and facilitate efficient movement of goods and services within the AfCFTA region.

Table 2. Quality and availability of transportation infrastructure (roads, rails, ports) in your business operations.

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How would you describe the quality and availability of transportation infrastructure (roads, rails, ports) in your business operations?

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	Frequency	Percent
Good	24	30
Average	35	43.8
Poor	21	26.3

Total

80

100

### Frequency of Multimodal Transportation Usage

Figure 9, delves into the frequency with which businesses utilize multimodal transportation systems, involving the integration of road, rail, and maritime modes. The results indicate that 23.8% of respondents never utilize multimodal transportation, 38.8% occasionally utilize it, and 37.5% frequently rely on this approach. The relatively low proportion of businesses frequently utilizing multimodal transportation suggests a need for further infrastructure development, regulatory harmonization, and capacity building to facilitate the adoption of this approach within the AfCFTA region.

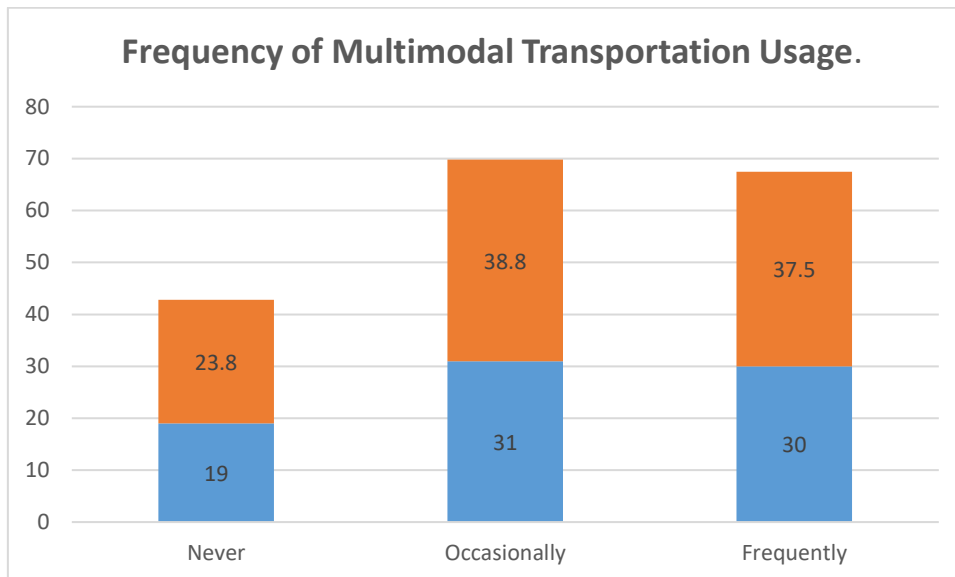


Figure 9. Frequency of Multimodal Transportation Usage

### Significance of Regional Connectivity for Supply Chain Operations

The result from Figure 10, evaluates the importance of improved regional connectivity, encompassing roads, rail, and waterways, for the respondents' supply chain operations. The results reveal that 41.3% of respondents consider improved regional connectivity as important, 30% find it moderately important, and 28.7% do not perceive it as important. The substantial proportion of respondents acknowledging the importance of improved connectivity underscores the need for continued investment and development of regional infrastructure projects within the AfCFTA framework.

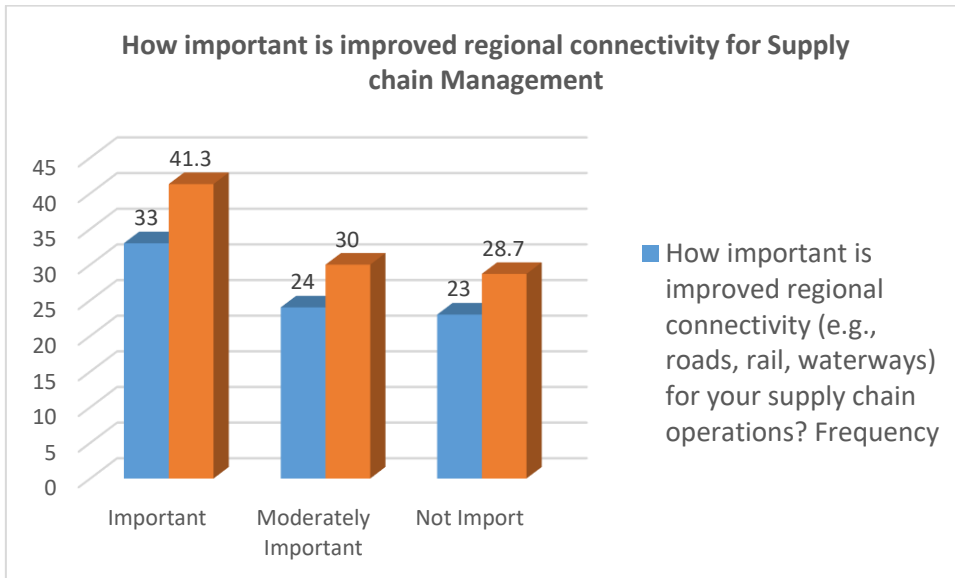


Figure 10. Significance of Regional Connectivity for Supply Chain Operations

#### AfCFTA Infrastructure Development Awareness

The data shown in Figure 11, measures the respondents' awareness of specific infrastructure development projects or initiatives under the AfCFTA. The results indicate that 37.5% of respondents are not aware of such projects, 37.5% are somewhat aware, and 25% are aware. The lack of widespread awareness observed in this study suggests that more effective communication strategies may be required to ensure that stakeholders are well-informed about ongoing and planned infrastructure projects, enabling them to better align their supply chain strategies and operations accordingly.

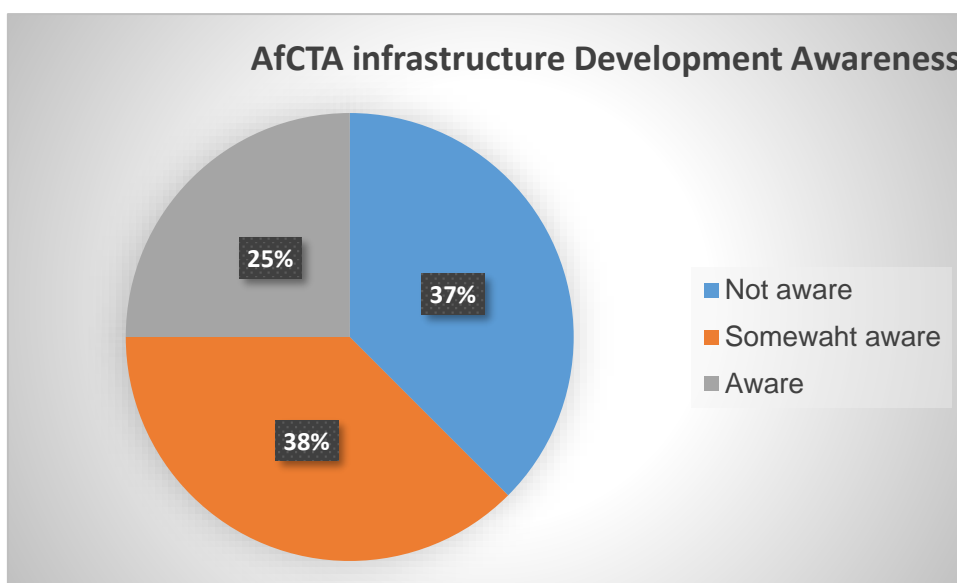


Figure 11. AfCFTA Infrastructure Development Awareness

### 4.3.3 Objective three

Challenges in cross-border trade and the movement of goods within the AfCFTA regions

Table 3 examines the challenges faced by businesses in cross-border trade and the movement of goods within the AfCFTA region. The results indicate that 23.8% of respondents face significant delays, 20% experience excessive bureaucracy, 17.5% cite high logistics costs, 21.3% report a lack of harmonized regulations, and 17.5% encounter corruption. The persistence of these challenges within the AfCFTA region underscores the need for concerted efforts to streamline cross-border procedures, enhance regulatory harmonization, and address issues such as corruption and bureaucratic inefficiencies.

Table 3. Challenges

Does your business face challenges in cross-border trade and the movement of goods within the AfCFTA region?		
	Frequency	Percent
Significant delays	19	23.8
Excessive bureaucracy	16	20
High logistics costs	14	17.5
Lack of harmonized regulations	17	21.3
Corruption	14	17.5
Total	80	100

### AfCFTA Impact on Customs and Border Management Effectiveness

The results shown in Figure 12 evaluate the effectiveness of the AfCFTA in addressing differences in customs and border management procedures, a crucial aspect of facilitating seamless cross-border trade. The results indicate that 23.8% of respondents find the AfCFTA effective in this regard, while 43.8% hold a neutral stance, and 32.5% perceive an increase in differences. The substantial proportion of respondents expressing neutral or negative perceptions suggests that further efforts are required to streamline and standardize customs procedures within the AfCFTA region, enabling more efficient cross-border trade and supply chain operations.

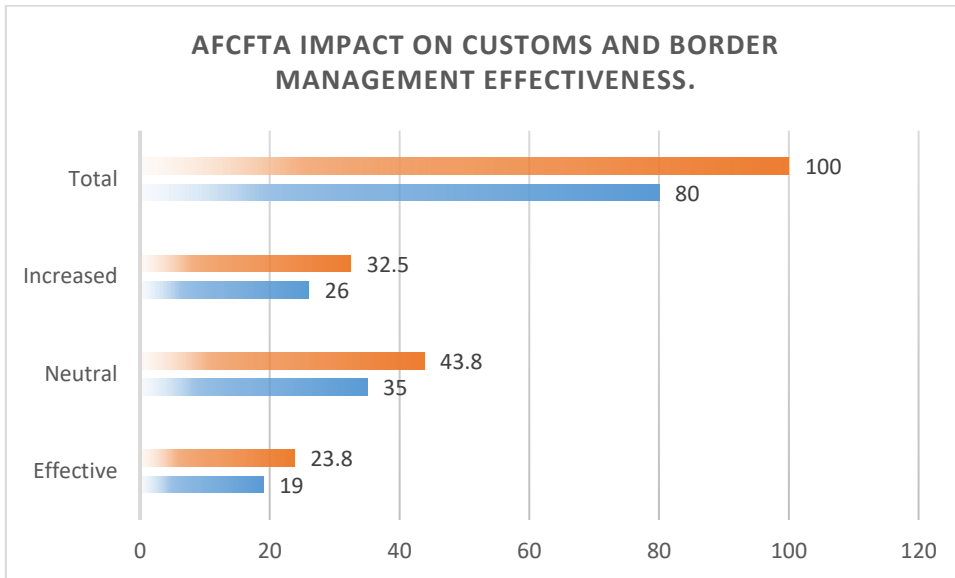


Figure 12. AfCFTA Impact on Customs and Border Management Effectiveness

**AfCFTA Impact on Non-Tariff Barrier Reduction at Borders**

The survey results (Figure 13) judge the impact of the AfCFTA on reducing non-tariff barriers, such as bureaucratic delays and corruption, at border crossings. The results reveal that 37.5% of respondents perceive a reduction in non-tariff barriers, 27.5% observe no change, and 35% report an increase in such barriers. The substantial proportion of respondents reporting an increase or no change in non-tariff barriers highlights the need for continued efforts to address these persistent challenges and ensure the effective implementation of the AfCFTA's provisions related to non-tariff barrier reduction.

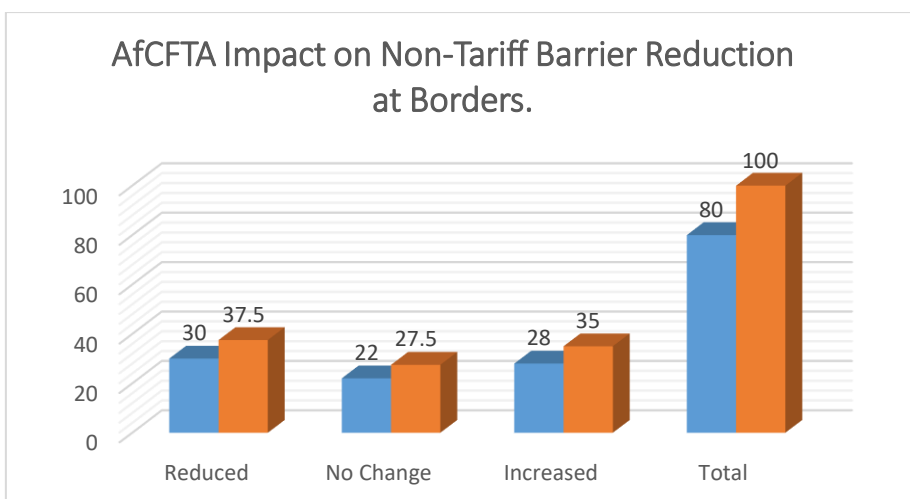


Figure 13. AfCFTA Impact on Non-Tariff Barrier Reduction at Borders

**Cross-Border Strategies within the AfCFTA Region**

Table 4 examines the strategies adopted by businesses to navigate cross-border issues within the AfCFTA region. The results indicate that 20% of respondents have established regional distribution centers, 17.5% have leveraged digital platforms, 22.5% have diversified transportation modes, 21.3% have engaged with government/industry associations, and 18.8% have not adopted any specific strategies. The adoption of these strategies by businesses highlights their proactive efforts to navigate the evolving trade landscape and overcome the persistent challenges associated with cross-border trade within the AfCFTA region.

Table 4. Cross-Border Strategies within the AfCFTA Region

Has your business adopted any strategies to navigate cross-border issues within the AfCFTA region?		
	Frequency	Percent
Established regional distribution centers	16	20
Leveraged digital platforms	14	17.5
Diversified transportation modes	18	22.5
Engaged with government/industry associations	17	21.3
No specific strategies	15	18.8
Total	80	100

#### 4.4 Summary of the Objectives

In this chapter, the survey results were presented, analyzed, and discussed the three main objectives of the study. The findings revealed a mixed level of awareness among respondents regarding the AfCFTA and its objectives related to supply chain management, underscoring the need for increased outreach and education efforts. Respondents expressed diverse perceptions regarding the impact of the AfCFTA on reducing trade barriers and harmonizing customs and border management procedures, with some positive views but also concerns about persistent challenges. Additionally, businesses reported adopting various strategies, such as diversifying supplier bases, investing in digital technologies, optimizing logistics, and expanding to new markets, to leverage the opportunities presented by the AfCFTA.

Concerning regional connectivity and infrastructure development, the results highlighted the importance of improved transportation infrastructure and multimodal transportation systems for efficient supply chain operations. However, respondents expressed varying levels of satisfaction with the current infrastructure quality and awareness of specific development projects under the AfCFTA. In terms of cross-border trade and the movement of goods, the study revealed several challenges faced by businesses, including delays, excessive bureaucracy, high logistics costs, lack of harmonized regulations, and corruption. While some respondents acknowledged the AfCFTA's efforts in addressing these issues, others reported an increase or no change in non-tariff barriers at border crossings.

To navigate cross-border challenges, businesses adopted strategies such as establishing regional distribution centers, leveraging digital platforms, diversifying transportation modes, and engaging with government and industry associations. Overall, the findings highlighted the potential of the AfCFTA to enhance supply chain efficiency and regional connectivity but also underscored the need for continued efforts to address persistent challenges, harmonize regulations and procedures, and develop infrastructure to fully realize the agreement's benefits for businesses and stakeholders across the African continent.

## 5 Conclusion

### 5.1 Answers to Research Questions

The study aimed to assess the impact of the African Continental Free Trade Agreement (AfCFTA) on supply chain management and related economic aspects across member countries. The key findings are summarized in the following paragraphs.

There was a mixed level of awareness among respondents regarding the AfCFTA and its objectives related to supply chain management. While 52.5% were aware of the agreement and its goals, 47.5% lacked awareness, highlighting the need for increased outreach and education efforts. Respondents expressed diverse perceptions about the AfCFTA's impact on reducing trade barriers, with 33.8% perceiving a positive impact, 36.3% holding a neutral stance, and 30% expressing a negative perception. Regarding the effectiveness of the AfCFTA in harmonizing customs and border management procedures, opinions varied, with 36.3% finding it effective, 37.5% holding a neutral stance, and 26.3% perceiving it as ineffective.

Businesses adopted various strategies to leverage the AfCFTA, such as diversifying supplier bases (23.8%), investing in digital technologies (16.3%), optimizing logistics (22.5%), and expanding to new markets (18.8%). The quality and availability of transportation infrastructure were perceived differently, with 30% of respondents considering it good, 43.8% average, and 26.3% poor. The utilization of multimodal transportation systems varied, with 23.8% never utilizing it, 38.8% occasionally utilizing it, and 37.5% frequently utilizing it. Improved regional connectivity through roads, rail, and waterways was considered important by 41.3% of respondents, moderately important by 30%, and not important by 28.7%. There was a lack of widespread awareness regarding specific infrastructure development projects or initiatives under the AfCFTA, with 37.5% not aware, 37.5% somewhat aware, and 25% aware.

In terms of cross-border trade challenges, businesses faced significant issues, including delays (23.8%), excessive bureaucracy (20%), high logistics costs (17.5%), lack of harmonized regulations (21.3%), and corruption (17.5%). The effectiveness of the AfCFTA in addressing differences in customs and border management procedures was perceived as effective by 23.8%, neutral by 43.8%, and increased by 32.5%. The impact of the AfCFTA on reducing non-tariff barriers at border crossings was perceived as reduced by 37.5%, no change by 27.5%, and increased by 35%. To navigate cross-border issues, businesses

adopted strategies such as establishing regional distribution centers (20%), leveraging digital platforms (17.5%), diversifying transportation modes (22.5%), and engaging with government/industry associations (21.3%).

## 5.2 Validity and Reliability

The reliability of the study is gauged using Cronbach's Alpha, which stands at .864 for the 12 items included in the survey. This high alpha value indicates a strong internal consistency within the questionnaire, signifying that the items reliably measure the intended variables. The reliability test is critical in ensuring that the findings of the study are dependable and can be confidently used to conclude Iran's foreign policy and its regional impact.

Table 5. Reliability

Cronbach's Alpha	N of Items
.864	12

To ensure the validity of the study, the questionnaire was carefully designed and reviewed by subject matter experts to assess its ability to accurately measure the intended constructs. The questionnaire items were meticulously crafted to align with the research objectives and capture the relevant aspects of the impact of the AfCFTA on supply chain challenges and opportunities. This rigorous process helped to establish the content validity of the instrument, ensuring that the questionnaire comprehensively covered the key domains of interest.

## 5.3 Recommendations

Based on the findings of this study, several recommendations are proposed in the following paragraphs.

First, comprehensive awareness and education campaigns should be implemented to increase stakeholder understanding of the AfCFTA and its objectives related to supply chain management. Information on the potential benefits, challenges, and strategies for leveraging the AfCFTA should be disseminated to businesses, policymakers, and other relevant stakeholders. Efforts should be enhanced to reduce trade barriers, harmonize customs, and border management procedures, and address non-tariff barriers across member countries.

Collaboration among member states is crucial to streamlining cross-border procedures, reducing bureaucracy, and combating corruption. Robust monitoring and enforcement mechanisms should be established to ensure effective implementation of the AfCFTA's provisions.

Investments in transportation infrastructure, including roads, rails, ports, and multimodal transportation systems, should be prioritized to facilitate the efficient movement of goods and services. Regional infrastructure projects should be developed and implemented to enhance connectivity and support supply chain operations within the AfCFTA region. Public-private partnerships and collaboration with international organizations can mobilize resources for infrastructure development.

Capacity-building programs and training should be provided for businesses, particularly small and medium-sized enterprises (SMEs), to equip them with the knowledge and skills to navigate the AfCFTA landscape and leverage its opportunities. Adopting digital technologies, such as e-commerce platforms and supply chain management systems, should be promoted to enhance supply chain efficiency and facilitate cross-border trade. Collaboration between the public and private sectors can foster the development and implementation of digital infrastructure and services to support AfCFTA's objectives.

Active engagement and collaboration among businesses, government entities, industry associations, and civil society organizations should be encouraged to address cross-border challenges and develop strategies for leveraging the AfCFTA. Platforms for dialogue, knowledge-sharing, and coordinated efforts can maximize the benefits of the AfCFTA for businesses, workers, and communities across member countries.

Lastly, robust monitoring and evaluation mechanisms should be implemented to track the progress and impact of the AfCFTA on supply chain operations, regional connectivity, and socio-economic development. Regular review and updating of strategies and policies based on the findings of monitoring and evaluation processes can ensure effective implementation and adaptation to evolving challenges and opportunities.

By addressing these recommendations, member countries and stakeholders can work towards realizing the full potential of the AfCFTA in fostering an integrated and efficient supply chain network, promoting regional connectivity, and driving sustainable economic growth across the African continent.

#### 5.4 Suggestions for Further Research

Based on the findings and summary provided, here are three potential areas for further research. Comparative analysis of AfCFTA implementation and impact across different member countries

The study focused on Kenya as a case study, but further research could investigate the varying levels of implementation, challenges, and opportunities faced by other member countries. A comparative analysis could provide insights into the factors influencing the success or challenges of AfCFTA adoption across different regions, economic contexts, and supply chain landscapes.

In-depth exploration of specific supply chain sectors or industries

The study covered supply chain management in general, but future research could delve into the unique dynamics and implications of the AfCFTA for specific sectors or industries, such as manufacturing, agriculture, or the service industry. This could help identify sector-specific challenges, opportunities, and tailored strategies for leveraging AfCFTA's benefits.

Longitudinal studies on the long-term impact of the AfCFTA

As the AfCFTA is a relatively new agreement, the current study captures a snapshot of its initial impact. Longitudinal studies tracking the evolution of supply chain management practices, regional connectivity, and economic indicators over an extended period could provide valuable insights into the long-term effects of the AfCFTA. Such studies could also assess the effectiveness of strategies and interventions implemented to address the challenges identified in this study.

## 6 Summary

The study revealed that the African Continental Free Trade Agreement (AfCFTA) holds significant potential for enhancing supply chain efficiency and fostering greater regional connectivity across member countries. The elimination of tariffs and reduction of non-tariff barriers facilitated by the agreement could lead to increased trade flows, lower logistical costs, and improved access to markets for businesses operating within the AfCFTA region. Additionally, the harmonization of trade regulations and procedures could streamline cross-border operations, leading to faster and more seamless movement of goods across national borders.

However, the findings also highlighted several persistent challenges that hinder the full realization of the AfCFTA's potential benefits. One notable challenge is the lack of awareness and understanding among businesses and stakeholders about the agreement's provisions, rules, and mechanisms. Many companies, especially small and medium-sized enterprises, struggle to comprehend the intricacies of the AfCFTA and how to leverage its opportunities effectively. Despite the agreement's aim to reduce trade barriers, the study found that various non-tariff barriers, such as complex customs procedures, bureaucratic hurdles, and technical regulations, continue to impede cross-border trade within the AfCFTA region. These barriers not only increase logistical costs but also lead to delays and uncertainties in supply chain operations.

Furthermore, the study identified infrastructure deficiencies as a significant obstacle to seamless regional integration and efficient supply chain management. Inadequate transportation networks, lack of modern logistics facilities, and poor connectivity between member countries pose challenges to the free movement of goods and services across borders. While some businesses have proactively adopted strategies to capitalize on the opportunities presented by the AfCFTA, such as exploring new markets, diversifying supply sources, and optimizing distribution networks, others face challenges in navigating the complexities of cross-border trade and adhering to the agreement's rules and procedures.

The findings highlight the need for continued efforts by member countries, regional bodies, and stakeholders to address these challenges effectively. This includes raising awareness and providing capacity-building support to businesses, harmonizing regulations and customs procedures, investing in infrastructure development, and fostering greater collaboration and coordination among member states. By addressing these issues, the AfCFTA can unlock its full potential and deliver tangible benefits for businesses, supply chain stakeholders, and the broader economies of the African continent.

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