

**THE EFFECT OF TRANSPORT INFRASTRUCTURE  
CONNECTIVITY ON REVENUE COLLECTION IN TANZANIA:**

*A Case of Mtwara Port*

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**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL  
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**2024**

**CERTIFICATION**

The undersigned certify that he has read and hereby recommends for acceptance by the Open University of Tanzania a dissertation entitled *“The effect of transport infrastructure connectivity on revenue collection: A case of Mtwara port”* in fulfilment of the requirement for the award of the Degree of Masters of Business Administration of the Open University of Tanzania.

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(Supervisor)

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Date

**DECLARATION**

I, Elias Stephano Nzunda, hereby declare that this research report entitled “*The effect of transport infrastructure connectivity on revenue collection: A case of Mtwara port*” is my original work and has never been submitted by any student of any university for any academic purpose. It is in this regard I present this in fulfillment of the requirement for the degree of Masters of Business Administration in Accounting and Auditing, Department of Accounting and Finance, Faculty of Business Management of The Open University of Tanzania.

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**DEDICATION**

This dissertation is dedicated to my beloved parents, the late Mwl. Emmeliana Francis Msemwa, Stephano Tuoneye Nzunda, my wife Verediana Amos Mwakipo and my children; Ezekiel, Janelle and Joanna Nzunda.

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May the God bless you all

**LIST OF ABBREVIATIONS AND ACRONYMS.**

BOT:	Bank of Tanzania
COVID:	Coronavirus disease
ERP:	Economic Recovery Program
ESAP:	Economic and Social Action Programs
JDI:	Japan Development Institute
ICT:	Information Communication Technology
IMF:	International Monetary Fund
LGA:	Local Government Authority
MFP:	Ministry of Finance and Planning
MOF:	Ministry of Finance
NBS:	National Bureau of Statistics
SADC:	Southern African Development Community
SMEs:	Small and Medium-size Enterprise
SPSS:	Statistical Package for Social Sciences
TPA:	Tanzania Port Authority
TRA:	Tanzania Revenue Authority
TMEA:	Trade Mark East Africa
URT:	United Republic of Tanzania
VAT:	Value Added Tax

### **ABSTRACT**

The study assessed the effect of transport infrastructure connectivity on revenue collection with a case study of Mtwara port. The study was motivated by a growing demand for reliable transport infrastructure connectivity for smooth operation of international trade and operations for more revenue to finance government operations. The objectives of the study were to assess the effects of organizational capital resources, human capital resources and the role of maritime transport connectivity on revenue collection at Mtwara port.

Three alternative hypotheses were tested based on set objectives. The study adopted the Resource Based Theory to conceptualize the variables used in the study. A cross-sectional case study design was adopted where quantitative data was collected using closed-ended questionnaires. A sample of 115 employees determined using the Yamane (1967) formula out of 161 employees were selected. Using a random sampling method, 120 questionnaires were administered to collect data where only 115 questionnaires were returned, constituting a response rate of 95.83%. Prerequisite tests were carried out for linearity, normality, multicollinearity and homoscedasticity. The analysis was carried out using descriptive statistics and multiple regression analysis. The findings of the study revealed a positive significant effect of organizational capital resources on revenue collection (Beta = 0.165,  $P < 0.004$ ), a positive significant effect of human capital resources on revenue collection (Beta = 0.241,  $P < 0.000$ ) and a positive significant effect of maritime transport connectivity on revenue collection to (Beta = 0.168,  $P < 0.003$ ).

The study recommended that efforts should be made by policy and decision makers to invest significantly in organizational capital resources, human capital resources and maritime transport connectivity to enhance reliable transport infrastructure connectivity and revenue collection in Tanzanian ports.

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## **CHAPTER ONE.**

### **INTRODUCTION**

#### **1.0 Introduction**

The chapter provides a comprehensive overview of the background of the research topic, the problem statement, the general and specific objectives, the importance of the study, the study scope and the structure of the research report.

#### **1.1 Background to the problem.**

The transport sector is an important resource for the social economic life of both developed and developing countries, since they depend on each other for imports and exports in the chain of international trade (Niyazbekova, 2023). Thus, investment in transport infrastructure is a fundamental concern for policy and decision makers to enhance economic growth among nations by strengthening in country connectivity and facilitation of international trade (ADB, 2024).

Furthermore, increasing economic growth and population in East Africa and Southern Africa provide opportunity for trade integration in the region and with the global market, hence creating demand for improved transportation accessibility among member states along with opportunities to support social economic activities in the coastal region to and from hinterland areas (Huang, .2020: Adams, .2021; Abdulkadr., 2022; Mgangaluma et al., .2024).

Of all transportation modes, maritime transport plays a critical role in enhancing world trade through linkage with various modes of transportation within the maritime logistic chain, where about 80% of the world merchandise trade volume and 55-67% of the world trade value are transported through shipping (Chen et al., 2018). The increased economic and population growth has raised much demand for overseas

products and is of the concern of many researchers on the transport infrastructure connectivity for smooth movement of goods and passengers between different locations.

Therefore, transport infrastructure connectivity plays a vital role in facilitating economic growth by lowering living costs, lowering the cost of doing business, thus allowing people to acquire commodities at a lower price and encouraging manufacturing in the economy (Isaac, 2019; Sun & Kauzen, 2023). The maritime transport industry provides the opportunity to generate revenue for both port users and revenue for the maritime state in the form of a levy imposed on the import and export of goods (Raji et al., 2021).

In Tanzania, maritime transport contributes over 90% of the cross-border trade and serves as the backbone of the Tanzania economy (TPA, 2022). The maritime transport in Tanzania is made up of major and small ports all providing accessibility for maritime transport for residents and surrounding land-linked countries to import and export their goods (Mwendapole, 2021). Thus, it is important to argue about how the transport sector contributes to the economy of Tanzania and its surrounding land-linked countries.

There is a wide range of scholars studying transport connectivity and its effect on the economy. It is found that transport connectivity plays a greater role in promoting the economy of Eastern Africa by reducing the cost of doing business and lowering the cost of living (Isaac, O.2019). Also, the study by Bouazza et al (2023) shows that Morocco, which is the most connected country on the African continent. Its economy depends on maritime bilateral connectivity, on the Atlantic and Mediterranean oceans with Europe, Asia and North and East Africa.

Moreover, according to Abdulkadr (2022), it found that economic development in East Africa, a region, which is blessed with diversity of economic potentials is faced with challenges of insufficient transport facilities, high cost of infrastructure development and poor transport management. Furthermore, the study carried out by Mwendapole and Zhihong (2021) on seaport service quality in Tanzania taking a study area of Dar es Salaam port, which is the leading port in Tanzania, revealed that there is poor quality of seaport service due to poor facilities and unwillingness of employees to satisfy customers' needs, using the port.

Furthermore, according to Kahyarara and Simon (2018), it shows that improvement in transport infrastructure connectivity has a potential of raising about 50 percent of the total tax revenue in financing government revenue for coastal state in Eastern and Southern Africa. Therefore, improvements in transport infrastructure connectivity need to be taken seriously by policy and decision makers to explore these available opportunities.

A comparative analysis of Tanzania customs and excise revenue statistics for the financial year 2022/23 and 2023/24 shows that the Tanzania Revenue Authority collected 9.35 trillion and 10.53 trillion respectively, which is about 21 percent of the approved national budget, below the 50 percent recommended by Kahyarara and Simon (2018).

In this situation, it is highly needed to study the subject matter of this study in order to fill the existing gap and provide advice on how to improve transport infrastructure connectivity, improve port services to collect revenue for the economic growth of Tanzania and other countries depending on Tanzanian seaports. Therefore, this study will focus on assessing the effect of transport infrastructure connectivity on revenue

collection in Tanzania with a case study of Mtwara port using resource-based theory.

### **1.3 Statement of the problem.**

In the global competitive environment and growing global economy, ports play the role of transportation hub in transportation activities as the connection point of sea transportation and land transportation to and from the inland areas and for the global market (Huang, .2020; Niyazbekova, .2023). It is known that only good transportation connectivity on land, water and air transportation networks can facilitate smooth movement of goods and passengers between different locations (Riaventin et al., 2021).

Elferjan (2015) pointed out that the effectiveness of port operation is significantly influenced by the extent of investment in desired port cargo handling facilities, building a competent skilled labour force at all levels of organisation, regular advancements in technological application, and the competitive advantage of port location to enhance trade among producers and consumers at affordable costs.

Like any other sector of the economy, the transportation sector contributes to the economy by ensuring connectivity of land transport, water transport and air transportation networks for smooth movement of goods and passengers from different locations to other locations (Riaventin et al., 2021).

It is through these various initiatives that have been made by the Tanzania government to address constraints facing the transport sector by strengthening the development of transportation infrastructure through port expansion projects, construction of the Standard Gauge Railway, bridge construction, expansion of

airports and expansion of trunk road networks (Kahyarara, 2022). However, the majority of studies have shown the contribution of transport connectivity to promotion of economic growth and not how it can contribute to revenue generation (Gekara, 2013; Isaac, 2019; Abdulkadr. 2022; Kahyarara, 2022; Sun&Kauzen., 2023; ADB, 2024; Mgangaluma et al., .2024).

Furthermore, for a number of years, Tanzania, like many other developing countries, despite abundant opportunities to collect revenue, they faced budget deficits in financing government expenditure due to low revenue collection. For instance, customs and excise duties collected through international trade for the financial years 2022/23 and 2023/24 amounted to only 21 percent of the national budget below the recommended potential of collecting about 50 percent of the national budget as noted by (Kahyarara & Simon, .2018; URT,2023: URT,2024).

Despite the potential of Tanzanian ports to serve the rapidly increasing demand for overseas products for the country's residents and neighboring land-linked countries in East and Central Africa, the connection for the movement of commodities from seaports to its hinterland is still very low (Mwendapole & Zhihong,2020; Kahyarara,2022). This is due to poor quality of roads and railway infrastructures, high tariffs on imports, congestion on the roads and stops of enough freight stops.

However, it is noted that scholars have not addressed how transport infrastructure connectivity with the seaports affects revenue collection in Tanzania. Therefore, this study intended to assess the effect of transport infrastructure connectivity on revenue collection in Tanzanian ports with a case study of Mtwara port.

## **1.4 Objective of the study**

### **1.4.1 Main objectives**

The main objective of the study was to investigate the effects of transport infrastructure connectivity on revenue collection in Tanzanian ports with a case study of Mtwara port.

### **1.4.2 Specific objectives**

The specific objectives guided this study were:

- i. To assess the effects of organization capital resources on port revenue collection.
- ii. To examine the effect of human capital resources on port revenue collection.
- iii. To examine the role of maritime transport connectivity on revenue collection.

## **1.5 Research questions**

The study was employed by the following research questions:

- i. What are the effects of organisation capital resources on port revenue collection.
- ii. What are the effects of human capital resources on port revenue collection.
- iii. What are the roles of maritime transport connectivity in revenue collection.

### **1.6 Significance of the study.**

Ocean ports are central and necessary component in facilitating global trade through importation and exportation of goods and services to and from the global market to serve the global economy (Mlambo, 2021).

The need for reliable transport infrastructure connectivity within the country, at regional level and to the global market provide the requirement to gather knowledge on how transport infrastructure connectivity effect revenue collection in Tanzania. Thus, the study was of expectation to provide a crucial advice on how Tanzania can benefit from using available ports to collect revenue through enhancing transport infrastructure connectivity in Tanzania.

Thus, the outcome of this study will help researchers gain new knowledge on the effect of transport infrastructure connectivity on revenue collection, to the policy makers and decision-making entities will apply the recommendation that will be provided to help on improvement of revenue collection through enhanced transport infrastructure connectivity.

### **1.7 Scope of the study**

In Tanzania, available literature indicates that there are three major ports in Dar es Salaam, Tanga and Mtwara, where the port of Dar es Salaam is ranked first, followed by Tanga port and Mtwara port being ranked in third position (TPA, 2022).

Recent expansion and installation of necessary facilities at major ports in Tanzania, including Mtwara port, has attracted major traders using Mtwara port named Ruvuma Coal Limited, Oilcom Tanzania Limited, Southern Shipping Services Limited and Alghubra Marine Services from Zanzibar (TPA,2022).

Furthermore, available statistics on the capacity of volume of cargo handled during the recent period from March 2022 to March 2023 indicates that Mtwara port handled indicate volume of cargos than Tanga port ranked in the second position (BOT, 2023). According to BOT (2023), during the period of March 2022 to March, 2023, Mtwara port handled a total of 1,128,902.0 tonnes while Tanga port handled only 745,794.40 tonnes. This indicates that Mtwara port is gaining hand trend of volume of cargo than Tanga port ranked in second position after Dar es Salaam port which handle the majority of the cargo in the country. Thus, it is important to pay attention to the study of the contribution of Mtwara port to the economy with the focus on the effect of transport infrastructure connectivity on revenue collection in Tanzania, specifically at Mtwara port.

Thus, the increase in volume of cargo provides an indicator of the increase in revenue collections at the port. It is for these reasons the study aimed to identify the effect of transport infrastructure connectivity on revenue collections at Mtwara port.

### **1.8 Organization of Research Report.**

The study is arranged into six chapters. Where the first chapter describes an introduction to the topic of the study, followed by the background of the study, a statement of the problem, general and specific objectives, the significance of conducting the study, the scope of the study, and the organisation of the study. On the other hand, the second chapter presents the empirical and theoretical literature review engaged in the study. While the third chapter illustrates the research methodology involved in conducting the study, the fourth chapter comprises the data analysis, presentation, and interpretation of research findings; the fifth chapter covers

the discussion of research findings; and the sixth chapter covers conclusions and research recommendations.

## **CHAPTER TWO:**

### **LITERATURE REVIEW.**

#### **2.1 Chapter Overview**

The important terminology used in this study is defined in this chapter, which is followed by an empirical and theoretical review of relevant literature on the connectivity of transport infrastructure and how it relates to the subject of the study. The chapter also describes the current research gap that served as the motivation for this research.

#### **2.2 Definition of Key Terms**

##### **2.2.1 Human Capital Resources**

According to Hendricks (2002), human capital resources are defined as the volume of knowledge, technical skills, creativity, and experience of the labour workforce in the organization. While Ployhart et al. (2011) defined human capital resources as a unit's composition of employees' knowledge, skills, and abilities used by the organization to provide service to its customers (Ployhart et al., 2011). Therefore, in this study the definition by Hendricks (2002) will be adapted.

##### **2.2.2 Maritime Transport Connectivity.**

Maritime transport refers to the movement of cargo and passengers between ports via waterways (Song, 2021). Therefore, maritime transport connectivity refers to the performance of shipping transport networks and comprises facets such as, amongst

others, the number of destinations served, frequency of services, and logistics costs (Parola et al., 2017).

### **2.2.3 Organisation capital resources**

Organisation capital resources according to Barney (1991) comprises a set of existing organisation structure, the organisations operation systems, administration and governance of the organisation for seek of achieving competitive advantages over the others.

### **2.2.4 Transport infrastructure**

Transport infrastructure according to Prus and Sikora (2021) is defined as all features with the ability of promoting growth and economic development in a certain geographical location by enabling movement of goods and people from one location to another. While Skorobogatova and Kuzmina-Merlino (2017) defined transport infrastructure to comprise all modes of transportation ranging from air transport to land transport and water transport necessary for movement of goods and services.

In this study, transport infrastructure is defined as the physical and organizational network which allows movement of goods and passengers between different locations as adapted from Schrotten et al. (2019).

### **2.2.5 Revenue.**

Revenue means income earned by the government for the purpose of financing government expenditure through the provision of public services to its citizens, use for state building, wealth distributions, and promotion of trade and investment (Paul, 2021). Furthermore, IAS 18 defines revenue as any gross income derived out of the

ordinary activities of an entity and any other economic benefits gained from it in a given period.

#### **2.2.6 Port.**

According to Talley (2006) define port as a place that provide for the vessel transfer of cargo and passengers to and from waterways and shores. Furthermore, Aqmarina & Achjar (2017) defined port as the medium that connect ships with land for both passengers and logistic flows.

### **2.3 Theoretical Literature review**

To determine which theories are available and how they relate to the study problem, a theoretical literature review is employed.

Through theoretical literature review it helps to identify the absence of appropriate theories, and the current situation of existing theories explaining new or emerging research problems (Saunders et al, 2019). This study will use one theory: the resource-based theory (Barney, 1991), which is found to have a significant contribution to this study as detailed below.

#### **2.3.1 The Resource - based theory.**

Resource-based theory was initially founded by Jay Barney in 1991, where since its establishment it has gained attraction for applications in multidimensional disciplines, including corporate management and corporate planning, where Barney (1991) claimed that the company's performance and competitive advantage rely on the package of internal resources maintained and controlled by the company.

In resource-based theory, resources denote assets, corporate procedures, competences, a firm's attributes, knowledge, and information under the control of the organisation to realize and implement strategies targeting to improve competence and efficiency (Barney, 1991).

Barney (1991) clustered company resources into three categories, namely physical capital resources, human capital resources, and organizational capital resources. Physical capital resources means the company's equipment, machines, or plants and its accessibility to raw materials, geographical position, and physical technology applied by a company. Where human capital resources denote the skills, intellect, training, decision-making, relations, and understandings from employees of the company, and finally, organizational capital resources mean a set of existing organizational structures, the organization's operation systems, administration, and governance for the purpose of achieving competitive advantages over the others.

Barney (1991) furthermore demonstrated that company resources can be constructed into two clusters: namely tangible assets, which comprise all the assets of economic benefit and physical observable business contribution, while intangible assets include all assets controlled by a company that do not have physical presence but can be accessed in terms of competencies and social benefits.

The resource-based theory is based on the foundation of four key conditions known as VRIS, where V stands for value, R stands for being rare, I stands for immobility, and S stands for sustainability. According to Barney (1991), value means that the firm's resources must have the capacity to exploit opportunities and/or threats in a

firm's environment. Being rare means uniqueness of resources owned by a firm over its competitors. Immobility means resources must have rigidity for others to obtain them in the market; sustainability means resources must demonstrate continuous survival in the market without the presence of a close substitute.

Adner and Helfat (2003) indicated that a company can realize competitive advantage not only through utilizing internal resources but nonetheless through building new potential competences through continuous learning, skill development, and gathering quality tangible and intangible assets over time.

Therefore, Adner and Helfat (2003) recommended that firms can achieve competitive advantage through the acquisition of a variety of resources rather than relying on a few resources only. Scholars recognize that the sources of a firm's resources can be obtained from internal and external sources (Li & Calantone, 1998; Lewis et al., 2010; Kozlenkova et al., 2014).

In the context of this study, the resource-based theory has demonstrated applicability in the Tanzanian context. The study will employ the theory's definition of resources, and the term "firm" as applied in the resource-based theory resembles the Tanzanian government's position as the ultimate owner of all Tanzanian resources on behalf of all Tanzanian citizens.

According to this theory, the country must make sure that both internal and external resources are used effectively and efficiently, as well as adapt to the evolving needs and technological advancements, in order to maintain its competitive advantage and

perform better in revenue collection through the use of the available transport infrastructures connecting to the hinterland via Mtwara port.

After data collection and data analysis, the facts of this assumption will be justified positively or negatively. Though the resource-based theory has its merit, it is criticized for failing to explain how and why certain businesses are able to obtain a competitive advantage in situations of rapid and unpredictable change.

Furthermore, the theory does not mention infrastructure as part of the physical capital resource. Thus, this study intends to contribute the role of infrastructure, including transport infrastructure, as part of the resources needed for the competitive advantage of the firm, and the results to be found will form a conclusion to this argument.

#### **2.4 Empirical Literature review.**

This section presents reviews gathered from various literatures related to the specific objectives, which are the effects of physical capital resources on port revenue collection, the effect of human capital resources on port revenue and the role of maritime transport connectivity in port revenue collection.

##### **2.4.1. Effects of Organizational Capital Resources on Port Revenue Collections.**

Kahyarara (2022) studied the infrastructure and economic growth in Tanzania using time series data from 1990 to 2017. The results of the study indicate that investment in infrastructure such as port ICT, port expansion, improvement of road networks, construction of bridges and standard gauge railway enhance the economic growth of Tanzania and its neighbouring countries. However, the study employed time series data analysis, unlike the current study which aimed to establish the relationship between transport infrastructure connectivity and revenue collection by using multiple regression analysis in Tanzania.

Furthermore, Abdulkadr (2022) did a study on East Africa Infrastructure with the case of Ethiopia, Kenya and Tanzania and found that the quality of road and air transport is better in Kenya than Ethiopia and Tanzania, thus arguing for improvement of transport infrastructure for the economic development of countries and the entire region. However, the study was based on secondary data only, while the recent study will focus on primary data.

Adams (2021) studied the effects of governance structure and its impact on port performance in Ghana. The results of the study indicate that the economy of Ghana relies very much on the performance of the port because it contributes a considerable amount of revenue emanating from port operations. However, the model of governance structure and its impact on port performance in Ghana is not necessarily similar to Tanzania. Thus, is why the current study will be conducted in the Tanzania environment to see how organizational capital resources affect revenue collection.

Mokone (2016) did a study on the impact of governance structure on the performance of Durban port in South Africa. The results of the study indicate that Durban port contributes significantly to the economy of South Africa by 15% of the GDP. It also contributes to creation of direct employment through cargo handling, ship repair, security and indirect employment the agriculture and inland transport within the logistics chain of the port. However, the study showed the contribution of the port to the economy without stating how specifically the transport connectivity affects revenue collection in South Africa. Therefore, a study on the effect of organizational capital resources on revenue collection in Tanzanian ports is necessary.

#### 2.4.2. Effects of Human Capital Resources.

Kahyarara and Simon (2018) studied the challenges, opportunities and agenda for future research in maritime transport in Africa where the study findings revealed that port inefficiency depicted, longer container dwell time, delays in vessel traffic clearance, lengthy documentation processing, and fewer containers per crane hour, except South Africa only. Furthermore, the study identified other constraints facing maritime transport in Africa including inadequacy in human resources, inefficient ICT systems, inefficient rail and road networks, insecurity, congestion and delays in checkpoints. However, the study did not clearly state how the constraints facing maritime transport in Africa affect revenue and negatively. Therefore, this study intends to study the relationship between transport infrastructure connectivity and revenue collection in Tanzanian ports.

Othman et al. (2022) did an investigation into the influences of smart port practices and sustainable port performance in Egypt. The results of the study indicated that employment of technology is of great importance to enhancing the sustainable performance of Egyptian ports. Thus, the study recommended that Egypt should focus on addressing obstacles facing the adoption of digital transformation towards a sustainable smart port performance. Furthermore, the study recommended that developing countries need to invest heavily in human resources, institutions and technological dimensions in order to explore available opportunities and comply with changes in global trade. Therefore, the study was conducted in a different context from the one we intend to study on; thus, this study will focus on the effect of human capital on port revenue collection in Tanzania.

Fratila et al. (2021) did a study on the importance of maritime transport for economic growth in the European Union by using an eight-panel data regression model from 2007 to 2018 within 20 countries of the European Union. The results of the study indicated that maritime transport and air pollutants are positively correlated with economic growth in countries of European countries. Furthermore, the study recommended that for sustainable economic growth in the European Union, policymakers should focus on diminishing environmental impact by investing in green port infrastructure and ecological ships. However, the study did not identify how sustainable port infrastructure and ecological ship impact revenue collection green. Thus, the gap will be addressed by studying the effect of maritime transport infrastructure on revenue collection in Tanzania.

Isaac (2019) studied the impact of transport infrastructure connectivity in the Eastern Africa region with a case study of Kenya. The results of the study showed that there is a serious transport structural gap that impact economic growth and poverty reduction in Eastern Africa. However, the transport connectivity did not clearly state how transport connectivity impacts revenue collection. Therefore, this study intends to make a study of how transport infrastructure connectivity affects revenue collection in Tanzania by employing a quantitative study using multiple linear regression analyses.

#### **2.4.3. The role of Maritime Transport connectivity on revenue collections.**

Sun and Kauzen (2023) did a study on the impact of port infrastructure and economic growth in Tanzania. The results of the study indicate that there is a direct relationship between seaport infrastructure and the economy in low –income countries like Tanzania. However, the study used Structural Equation Modelling to assess the

impact of port infrastructure and economic growth without stating how the maritime transport infrastructure impacts revenue collection. Thus, that is why the need to study the relationship between maritime transport and revenue collection will be addressed in this study.

Mwendapole and Zhihong (2020) studied the status, challenges and strategies of Dar es Salaam seaport –hinterland connectivity in Tanzania. The results of Dar es Salaam seaport – hinterland connectivity revealed that even though Dar es Salaam seaport is linked through both railway and road transport, there are still challenges facing reliable transportation from the seaport to the hinterland areas, such as huge dependence on road transport, insufficient number of trains wagons, poor quality of roads and railway infrastructure, higher tariffs on imports. However, the study showed that reduction in the price of imports and exports has a positive impact on revenue collection, while the study remained silent on the impact of transport infrastructure connectivity on revenue collection. Thus, this study intends to employ a quantitative approach to show the relationship between transport infrastructure and revenue collection in Tanzania.

### **2.5 Review of Revenue collection in maritime transportation sector**

Scholars from different parts have categorized revenue collection in maritime transportation into two groups, namely port revenue and customs revenue as detailed below. According to Andriotti et al. (2021), it is pointed out that in Brazil, port revenue collection is derived from tariffs, prices of services and facilities provided at the port in relation to management of port spaces, provision of infrastructures, governance and coordination of the port infrastructure chain.

In addition, Ayhan (2023) demonstrated that port revenue in Panama is generated from port operation, shipping and offshore exploration. Similarly, the study by Wang et al. (2017) stated that port revenue is composed of a series of tariffs charged for various services and facilities provided by the port.

Furthermore, in Ghana, customs revenue is generated from two categories: the first being taxes and charges levied on imported goods and, second is revenue collected from customs processing such as licensing fees, rent chargers, administrative fees and penalties (Abrokwah et al., 2021).

Similarly, the Tanzania Ports Authority defines port revenue to include a series of tariffs generated from port fees, port dues, port charges and other miscellaneous charges established by the authority (URT, 2023). On the other hand, the National Bureau of Statistics defines customs revenue to mean international trade taxes imposed on import duties, excise duties, VAT on imports, fuel levy, petroleum levy and other non-tax revenue (URT, 2022). This implies that revenue collected at Mtwara port includes both port revenue collected by the Tanzania Ports Authority (TPA) and customs revenue collected by the Tanzania Revenue Authority (TRA).

Thus, for this matter, the study focused on assessing the contribution of port revenue and customs revenue collected at Mtwara port during the financial years 2020/2021 and 2021/2022, following completion of a rehabilitation project at Mtwara port and improvement of road infrastructure along the Mtwara development corridor.

## **2.6 Research gap.**

The rapid economic growth of the hinterland areas creates pressure on the increasing demand for overseas products within the maritime country's borders and outside the

maritime country's borders. This has raised the concern of many researchers about transport infrastructure connectivity and its impact on the economy. Thus, many studies have been done on the same (Mokone, 2016; Kahyarara and Simon, 2018; Isaac, 2019; Adams, 2021, Fratila et al., 2021 and Othman et al., 2022). However, out of these studies, few of them have discussed issues related to transport infrastructure connectivity and revenue collection. Similarly, very few empirical studies (Mwendapole and Zhihong, 2020 and Sun and Kauzen, 2023) have focused on the impact of maritime transport on economic growth and its potential for revenue collection in Tanzania when import and export fees are reduced. However, the study both by Mwendapole and Zhihong (2020) and Sun and Kauzen (2023) did not state clearly how maritime transport infrastructure connectivity impacts revenue collection in Tanzania and specifically at Mtwara port. To the best knowledge of the researcher, no study has been conducted on the effects of transport infrastructure connectivity on revenue collection at Mtwara port. Therefore, this study intends to fill the existing knowledge gap by examining the effects of transport infrastructure connectivity on revenue collection at Mtwara port by using resources-based theory employing quantitative study and multiple linear regression analysis.

### **2.6.1 Theoretical framework**

This is a theoretical theme explaining a believed relationship between independent and dependent variables derived from a critical literature review (Saunders et al., 2019). The theoretical framework believed to be tested in this study “states that transport infrastructure connectivity promotes economic development, leading to a wider tax base for revenue collection through creation of employment opportunities,

both direct and indirect employment, reducing the cost of doing business and improving the living standards of residents in the economy.

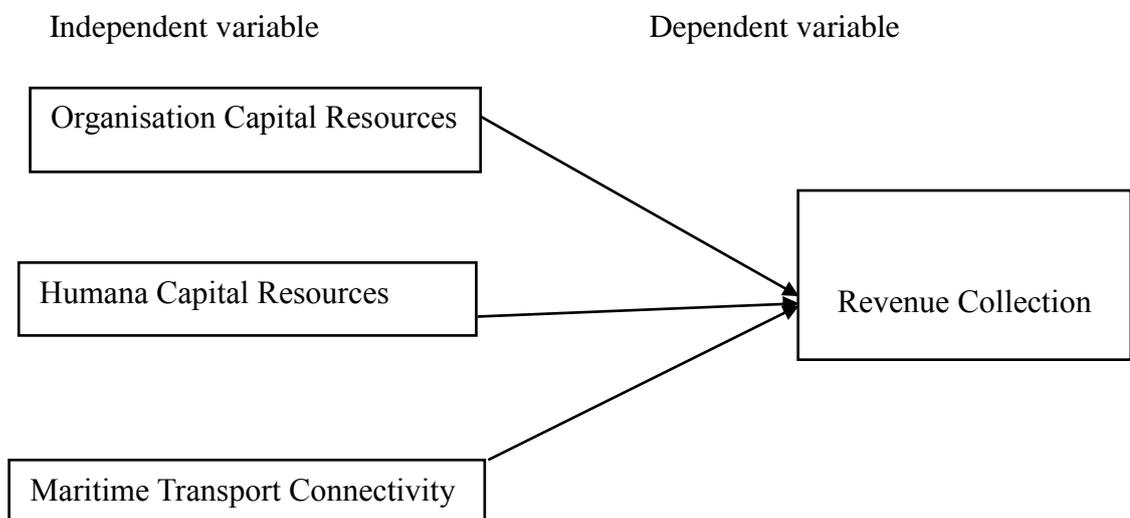
### 2.6.1 Conceptual framework

The conceptual framework is the researcher's understanding of how the particular variables in the study connect (Regoniel, P. A. 2015). Based on the literature review and findings on the topic of the study, this section intends to describe the effect of transport infrastructure connectivity on revenue collection at Mtwara port.

### 2.6.2 Conceptual Framework Flow Chart

This is a pictorial representation of a theoretical framework detailing the effect of transport infrastructure connectivity on revenue collection.

Figure 1. Conceptual framework



**Figure 2.1. Conceptual framework**

Source: synthesis of literature review (2024)

### **2.6.3 Description of Research Variables.**

### **2.6.4 Description of Research Variables.**

A variable is defined as characteristics that can be different from one element to another, or can change over time (Leavy, P.2022). Thus, in any research study it is important to understand which kind of variables you are working with because it will influence how one will be able to analyze research data (Leavy, P.2022).

The key variable research needs to explore are independent variables and dependent variables, where an independent variable is one that likely affects or influences another variable (Leavy, P.2022) and a dependent variable is a variable that is affected or influenced by another variable (Leavy, P.2022). In this study, the dependent variable is revenue collection at Mtwara port in Tanzania, while the independent variables are organizational capital resources, human capital resources, maritime transport infrastructure, transport infrastructure connectivity.

#### **2.6.4.1 Organizational Capital Resources.**

Organizational capital resources are defined as a company's formal structure, the company's formal and informal systems, which comprise planning, managing and coordinating systems (Barney, 1991). As used in this study, scholars have terms port capital resources to mean port governance and management; Mokone (2016) defined governance as a process of governing an organisation or a group of individuals. Bourgeois et al. (1999) defined governance as an organizational structure that consists of hierarchical reporting, sharing information, operational processes and control systems. Mokone (2016) identified four types of governance structure for port governance and management, namely: Public service ports, Tools ports,

Homeowner Ports and Fully Privatized or Private Service Ports. Therefore, in this study, measurements will be made by assessing the efficiency and effectiveness of performance of the choice of model of port governance for revenue collection at Mtwara port. This will be addressed by answering the following hypothesis.

*H1: There is no significant impact of organisational capital resources on revenue collection.*

### **2.6.3.2 Human capital**

For this study, human capital is defined as the volume of knowledge, technical skills, creativity, and experience of the labour workforce in the organisation (Hendricks, 2002). Human capital constitutes the most valuable resource of a country. In its absence, there will be the non-performance of physical capital (tools, machinery, and equipment) which will impede economic growth (Jaiyeoba, 2015). The ability of employees to be resourceful at work is crucial to managing other resources effectively and achieving the aims and objectives of the organization.

Thus, decision-makers and policymakers should be careful in considering the choice of training and development of human capital relevant for enhancing attainment of organizational objectives and sustaining the competitive advantage over other organisations through effective succession planning, well-implemented training policies, and forecasts on labour demand at workplace (Dogan & Sahin, 2015). Therefore, in this study the performance of revenue collection at Mtwara port will be compared with investment in human capital. This will be addressed by answering the following hypothesis.

*H2: There is no significant impact of human capital resources on port revenue collection.*

### **2.6.3.3 Maritime Transport**

Ports contribute to the economy by supporting the economic activities in the hinterland as they act as a vital connection between land and sea transportation. Thus, maritime transport has been the main driver of trade and hence expansion of the global economy (Mokone, T.2016). Therefore, in this study, the role of maritime transport will be measured by comparing the volume of cargo handled on imports and export of cargo as an indicator of the extent of connection between land and sea and how they impact revenue collection. This will be addressed by answering the following hypothesis.

*H3: Reliable maritime transport connectivity has no significant impact on port revenue collection.*

### **2.6.3.4 Revenue Collection.**

Port revenue collection is the outcome of transport infrastructure connectivity. Therefore, in this study the amount of revenue collected at Mtwara port will be measured by examining the amount of customs revenue collection and port tolly collected from port operations at Mtwara port from 2020 to 2023.

## **CHAPTER THREE.**

### **RESEARCH METHODOLOGY.**

#### **3.1 Chapter Overview**

The chapter gives an illustration of the set of beliefs used to lead the entire research process by pointing out the research approach employed in the study, then discusses the research design used by the study, followed by the research strategy considered, along with the methodological choices for data collection and data analysis while observing for validity, reliability, and ethical consideration as part of the academic and professional code of conduct for a good scientific research process.

#### **3.2 Research Philosophy**

For quantitative research, the research philosophy is explained to mean all set of beliefs and assumptions about what constitutes good research for certain phenomena (Saunders et al., 2019). The choice on the research philosophy, as pointed out by Saunders et al. (2019), demands the researcher to consider the application of certain research approaches, choose an appropriate research design and research strategy fitting the study, then decide on the time horizon to be employed, and finally decide on the data collection and data analysis techniques suitable for the chosen research philosophy.

Thus, the study employed a positivism research philosophy that believes in the application of scientific procedures to investigate the phenomena of a large sample

size in an objective manner by making the results of the study free from human interpretation and biasness. The rationale for using positivism as a research philosophy is motivated by the fact that the study started with theory to test the research hypothesis.

Thus, this study started with both theoretical and empirical literature reviews, then data collection, analysis, interpretation, and presentation of research findings.

### **3.3 Research Approach**

The research approach is all about an established foundation with regard to guiding the researcher in making decisions about desired techniques to be employed in the data collection process as well as the procedures of concern in the data analysis stage (Mlowe & Diyamett, 2012).

Thus, this study considered the application of the deductive research approach, in which the research starts by establishing theoretical ground, followed by data collection and data analysis to test the results of hypotheses if they match theoretical facts (Mlowe & Diyamett, 2012). Furthermore, a quantitative research design was applied where data was collected and analysed using quantitative tools.

### **3.4 Research Design and Research Strategy**

Research design is concerned with a road map on how a researcher intends to achieve the research undertaking for the purpose of giving a solution to the existing research problem through a systematic style of data collection and data analysis (Sounders et al., 2019). In this study, an explanatory research design was used where the relationship between independent and dependent variables was explained by using statistical facts obtained from the field after data analysis. On the research strategy, due to time limitations, the study used a cross-sectional research survey

where a questionnaire was developed and administered at one time to different respondents (Kesmodel, 2018).

### **3.5 Study Area**

The area of this study was at Mtwara Port. The rationale for conducting a study at Mtwara Port, includes, amongst others, increasing investment made by the government at Mtwara port through major rehabilitation and expansion of Mtwara port (TPA.2022). Also, there is huge potential for Mtwara port being a natural harbor to serve neighbouring countries of Malawi, Mozambique and Zambia at reliable cost due to its short distance as compared to other ports (Humphrey et al., 2019). This has motivated research to be carried out at Mtwara port to evaluate the impact of transport infrastructure connectivity on revenue collection since the study's recommendations and advice will allow decision-makers to act appropriately in order to enhance revenue collection to support government expenditure.

#### **3.5.1 Study population**

A population includes the total number of persons or objects holding common characteristics from which a sample representing a true picture of the population is expected to be drawn. (Mzindakaya, 2020). Given information on the presence of 161 permanent human resources at Mtwara port, it was used as the basis for determining the sample of 115 respondents involved in the study.

### 3.6 The Sampling design and Procedure

#### 3.6.1 Sample Size.

The study was based on a sample of 115 respondents that was drawn from a population of 161 employees at Mtwara port, where Yamane's formula was used to determine the sample size of the study.

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{161}{1 + 161(0.05)^2}$$

$$n = 115$$

Where  $n$  = sample size ,  $N$ = Is the total population of 161 employees and  $e$ = 0.05 Is the standard error of sampling.

#### 3.6.2 Sampling Technique and Sampling procedure

Sampling techniques enable you to reduce the amount of data you need to collect by considering only data from a subgroup rather than all possible cases or elements (Saunders et al., 2019). This study used a probability sampling in which simple random sampling was applied by distributing randomly the questionnaires to obtain a representative sample of participants to form a generalization of the population findings.

### 3.7 Data Types and Collection Methods.

Since the study wanted to explain the effect of transport infrastructure connectivity and revenue collection, Primary Data collection was applied to collect data from the field respondents. Where developed questionnaires were employed in the collection of data and facts from the field.

### **3.7.1 Data collection instrument**

This involved development of a list of questions that was used to collect information from the respondents to the study. To ensure the right information is obtained, the quality of a good questionnaire as recommended by Mlowe and Diyamett (2012) was considered in designing the questionnaires in such a way that it addresses the research objectives, encourages provision of accurate information and briefs to the point. Thus, closed ended questionnaires were applied to gather information from the field.

### **3.7.2 Data processing and Data Analysis.**

#### **3.7.2.1 Data Processing.**

This includes activities related to data edition, codification, classification, and tabulation of data in order to establish a conducive environment for simplification of data analysis and interpretation in the context of the research problem (Mlowe & Diyamett, 2012). In this study, data processing was considered a necessary step where necessary editions were done, preparation of a code book was made, and developing tables with the aid of the Microsoft Excel program for easy data entry in the SPSS was done.

#### **3.7.2.2 Data Analysis.**

Data analysis, according to Mlowe and Diyamett (2012) is the process of calculating specific data measurements to determine their relationships or differences in order to support a theory regarding a particular phenomenon. In order to determine whether transport infrastructure connectivity and revenue collection are comparable, a multiple regression analysis model was used to statistically examine the data from

the questionnaires using regression analysis, which was made possible using the Social Sciences Statistical Package (SPSS) version 27.0.

### **3.8 Data cleaning**

In conducting research, missing data and outliers tend to occur during data collection (Kwak&Kim,.2017). From 120 questionnaires distributed to respondents at Mtwara port and Mtwara region revenue office out of 120 questionnaires, 115(95.83%) were returned by respondents. Then checks for missing data and outliers are called out before proceeding with data analysis. There was no missing data observed on the questionnaires while the modification method through replacement of the values of outliers with the largest or second-smallest value was opted in order to maintain the recommended sample size (Kwak&Kim,.2017).

### **3.9 Reliability test of Research instruments**

To ensure consistency and accuracy of the results of the study, the internal consistency of the research instruments for the variables of the study was examined by using Cronbach's alpha (Robert & Prince, 2006). All the reliability coefficients were above 0.70, a cut-off recommended by Peterson (1994). After the data collection, reliability analysis was done and the findings for each of the sub-variables comprising variables of the research are presented below.

**Table 3.1 Reliability Analysis**

Variables	No of items	Reliability
Organisation Capital Resources (OCR)	12	0.888
Human Capital Resources (HCR)	8	0.790
Maritime Transport Connectivity (MTC)	5	0.775

Source: Field data (2023)

### 3.10 Validity Test of Research instruments

To ensure the variables measure what was exactly supposed to be measured, the test for validity of research instruments needs to be conducted; therefore, in this study, the convergent validity was examined to assess if the variables share a common construct by using the loading factor (Robert&Priest, 2006). All the validity coefficients were above 0.50, a cutoff recommended by Peterson (1994). After the data collection, validity analysis was done and the findings for each of the sub-variables comprising variables of the research are presented below.

**Table 3.2: Factor analysis for the study variables**

Variables items	Component		
	1	2	3
Managing	0.769		
Formal structure of your organisation	0.743		
Public service port	0.740		
ICT	0.737		
Port governance	0.737		
Private service port	0.706		
Organisational formal systems	0.675		
Planning	0.668		
Coordinating	0.635		
Landlord port	0.633		
Organisational informal system	0.520		
Technical skills		0.730	
Training		0.701	
Knowledge		0.664	
Succession planning		0.654	
Investment in human capital		0.650	
Forecasting labour needs		0.608	
Creativity		0.546	

Experience		0.508	
Hinterland connectivity between land and sea transportation			0.768
Volume of cargo handled to hinterland areas			0.741
Volume of cargo handled from hinterland area			0.720
Volume of cargo handled to overseas			0.688
Volume of cargo handled from overseas			0.683

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Source: Field data (2023)

### 3.11 Model Specification.

The effect of transport infrastructure connectivity on revenue collection was analyzed by performing a multiple linear regression to determine the overall effects of transport infrastructure connectivity on revenue collection by using a resources-based theory where three variables of organizational capital resources, human capital resources and maritime transport connectivity were used as independent variables used to predict the dependent variable revenue collection. Specifically, the model below was tested to analyze the effects of transport infrastructure connectivity on revenue collection.

Multiple regression analysis model  $RC = a + \beta OCR + \beta HCR + \beta MTC + \square$

Where, OCR represents Organisational Capital Resources, HCR represents Human Capital Resources, MTC represents Maritime Transport Connectivity,  $\beta$  represent beta coefficient value and represents Error term.

### 3.12 Ethical consideration.

The research process was guided by sound ethical principles, which include the following:

1. Ethical permission; To conduct the research study, a research clearance letter was obtained from the Open University of Tanzania along with an institutional permission letter from the Tanzania Revenue Authority-Mtwara Region and Tanzania Ports Authority-Mtwara were obtained for a specified period of time during data collection.
2. Objectivity; the study ensured that at all times objectivity is maintained when carrying out the research without having any sort of biased results.
3. Confidentiality; the study maintained the confidentiality of respondents such that no individual name was written in the report and information provided was used for intended academic purposes only.
4. Respect; during the research study, all respondents' opinion and their willingness to be involved in the study was respected.

### **3.13 Limitations of the study**

The research assistants were assigned to gather information from the group of respondents. The way the questionnaires are administered and the explanations provided to respondents may become inconsistent as a result of these habits. The research assistants were trained on the process to be followed in data collection in order to reduce this limitation. However, due to a variety of factors, including respondents' travel, illness, and unwillingness to participate, not all questionnaires were returned, accurately completed, or even recovered. The researcher exceeded the required sample size in order to save more respondents and reduce this limitation.

### **3.14 Chapter Summary**

The study's methodology was presented in this chapter. Where an explanatory research design was used involved by using a sample size of 115 respondents.

Primary data was obtained from 120 questionnaires and were distributed after data cleaning the intended sample size of 115 respondents was obtained, giving a response rate of 95.83%. Reliability and validity tests were considered for the variables used, measurement of the research variables was made, and model specifications were generated. Finally, ethical considerations and limitations of the study were presented.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS**

#### **4.0 Chapter Overview**

This chapter presents study findings and analysis of data collected from the Tanzania Ports Authority specifically at Mtwara Port, with the objective of assessing the effects of transport infrastructure connectivity on revenue collection in Tanzania.

This chapter also presents the results of the data analysis using Statistical Package of Social Science (SPSS) to measure the relationship between dependent (revenue collection) and independent variables (organizational capital resources, human capital resources and maritime transport connectivity).

The chapter complies with the background information, main findings of the study and assumptions of multiple regressions observed before running data analysis using the software.

#### 4.1 Respondent Background information

Background information has been presented here as part of the findings of the study with the aim of indicating the kinds of respondents that the researcher encountered in the process of carrying out the study. In this section, the researcher reported findings in relation to gender of respondents, level of education and year of experience.

**Table 4.1; The Demographic data about the respondents**

<b>Data</b>	<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Male	76	66.1
	Female	39	33.9
	<b>Total</b>	<b>115</b>	<b>100</b>
Education level	Diploma	7	6.1
	Bachelor	90	78.3
	Masters	18	15.7
	<b>Total</b>	<b>115</b>	<b>100</b>
Level of experience	1 Year	15	13
	2-5 Years	61	53
	6-10 Years	19	16.5
	11-15 Years	11	9.6
	16Years and above	9	7.8
	<b>Total</b>	<b>115</b>	<b>100</b>

Source: Field data (2023)

According to the findings in Table 6 above, the majority of respondents, 76(66.1%), were male employees, while 39 (33.9%) were female counterparts. This indicates that ports and revenue authorities have uneven distribution of employees by gender. However, despite the uneven distribution of employees by gender, information was collected from both genders, making the data more objective.

The findings on respondent's experience show that, 61(53%) of respondents had experience between 2–5 years, 15(13%) had experience of not more than 1 year, 19(16.5%) had experience between 6–10 years, 11(9.6%) had experience of 11–15 years and 9(7.8%) of the respondent had experience between 16 years and above. This implies that the majority of the respondents had enough experience to understand the transport and revenue collection sectors who could give and thought to the subject. Regarding respondents' level of education, the findings revealed that 7(6.1%) of the respondents had attained a diploma education, 90(78.3%) were university graduates with degrees, while 18(15.7%) were master's holders. This shows that the majority of respondents were degree holders at Mtwara port and Mtwara region revenue office.

## **4.2 Specific Findings**

This section presents the main findings of this study based on the research objectives.

### **4.2.1 To assess the effects of organizational capital resources on port revenue collection**

The study sought to assess the effects of organizational capital resources on port revenue collection. Thus, the study employed regression analysis to determine the effects of organizational capital resources on port revenue collection. From the

Pearson correlation, the findings of 115 respondents indicate organizational correlation at the rate of  $r = 0.332$ , which implies that revenue collection at the port is affected by 33.2% investment in organizational capital resources, while the remaining 66.8% is contributed by other factors.

**Table 4.2; Effects of Organisation capital resources on port revenue collection**

		Organisation Capital Resources
Revenue Collection	Pearson	.332 <sup>**</sup>
	Sig. (2-tailed)	0.000
	N	115

Source: Field data (2023)

According to Table 7 above, the Pearson correlation of organizational capital resources and revenue collection at the port showed a low positive and statistically significant relationship at ( $r = 0.332$ ,  $P < 0.000$ ). Hence, the result supported the alternative hypothesis that *H1: "There is a significant impact of organisational capital resources on revenue collection"*.

This implies that increase on investment in organisational capital resources would lead to a higher revenue collection at Mtwara port.

#### **4.2.2 To examine the effects of human capital resources on port revenue collection**

The study wanted to examine the effect of human capital resources on port revenue collection. From the Pearson correlation, the findings of the study showed that human capital resources and revenue collection are positively correlated at  $r = 0.398$ ,

which indicates that revenue collection at the port is affected by 39.8% investment in human capital resources and the remaining 60.2% is contributed by other factors.

**Table 4.3; Effects of human capital resources on port revenue collection**

		Human Capital Resources
Revenue Collection	Pearson Correlation	.398**
	Sig. (2-tailed)	0.000
	N	115

Source: Field data (2023)

According to the table above, the Pearson correlation of human capital resources and revenue collection at the port was found to be low, positively correlated and statistically significant ( $r = 0.398$ ,  $P < 0.000$ ). Hence, the results support the alternative hypothesis that “*H2: There is a significant impact of human capital resources on port revenue collection*”.

This implies that increased investment in human capital resources leads to higher revenue collection at Mtwara Port.

#### **4.2.3 To examine the effects of maritime transport connectivity on revenue Collection**

The study intended to examine the effect of maritime transport connectivity's impact on revenue collection. The findings from the study show that maritime transport connectivity and revenue collection are positively correlated at a rate of 0.340. This implies that revenue collection is affected at 34.0% by investment in maritime transport connectivity, while the remaining 66.0% is contributed by other factors.

**Table 4.4; Effects of maritime transport connectivity on port revenue collection**

		Maritime Transport Connectivity
Revenue Collection	Pearson Correlation	.340**
	Sig. (2-tailed)	0.000
	N	115

Source: Field data (2023)

According to the table above, Pearson correlation results of maritime transport connectivity and revenue collection are found to be low positive and statistically significant ( $r = 0.340$ ,  $P < 0.000$ ). Hence, the results supported the alternative hypothesis “*H3: Reliable maritime transport connectivity have a significant impact on port revenue collection*”.

This shows that an increase in investment in maritime transport connectivity is an important factor in higher revenue collection at the port.

#### **4.2.4 To examine the effects of transport infrastructure connectivity on revenue Collection.**

The study intended to examine the effect of transport infrastructure connectivity on revenue collection. The findings obtained from Pearson correlation indicate that transport infrastructure connectivity and revenue collection are positively correlated at a rate of  $r = 0.213$ , which implies that revenue collection at the port is contributed by 21.3% by investment in transport infrastructure connectivity.

**Table 4.5; Effect of Transport Infrastructure Connectivity on Revenue Collection**

	Revenue Collection
Infrastructure Connectivity on Revenue Collection	0.213
	0.022
	115

Source: Field data (2023)

According to the table above, the Pearson correlation of transport infrastructure connectivity and revenue collection at the port is found to be low, positively correlated at the rate of ( $r = 0.213$ ,  $P < 0.022$ ). Hence, the results indicate that an increase in investment in transport infrastructure connectivity leads to higher revenue collection at the port.

#### 4.2.5 Relationship between independent variables and dependent variables

The results of the study have established a positive correlation between independent variables and dependent variables through results presented in table 11 using Pearson correlation. Thus, both independent variables; organisation capital resources, human capital resources and maritime transport infrastructure connectivity have positive influence on revenue collection at the port.

**Table 4.6; Relationship between independent variables (Organizational Capital Resources, Human Capital Resources, and Maritime Transport Connectivity) and dependent variable (Revenue Collection)**

		Organisation Capital Resources	Human Capital Resources	Maritime Transport Connectivity	Revenue Collection
Organisati on Capital Resources	Pearson Correlati on	1	.238*	.151*	.339**
	Sig. (2- tailed)		0.010	0.108	0.000
	N	115	115	115	115
Human Capital Resources	Pearson Correlati on	.238*	1	0.158	.398**
	Sig. (2- tailed)	0.010		0.092	0.000
	N	115	115	115	115
Maritime Transport Connectiv	Pearson Correlati on	0.151	0.158	1	.340**

ity	Sig. (2-tailed)	0.108	0.092		0.000
	N	115	115	115	115
Revenue Collection	Pearson Correlation	.339 <sup>**</sup>	.398 <sup>**</sup>	.340 <sup>**</sup>	1
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	115	115	115	115

Source: Field data (2023)

According to the table above, the majority of the independent variables were statistically significant to the dependent variable meeting the desired threshold of 0.05, thus they were used for data analysis as they were close to stated threshold.

### 4.3 Revenue Collection

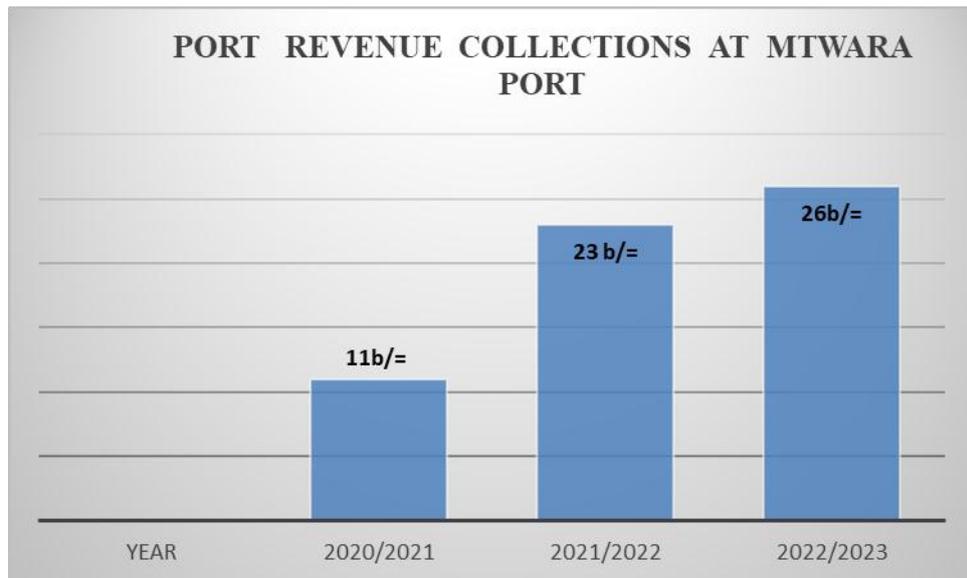
#### 4.3.1 Port Revenue collect during financial year 2020/2021 to 2022/2023

During the study analysis on the amount of port revenue collection by TPA for three years prior to the study, the financial years 2020/21 to 2022/2023 was conducted to assess the trend of port revenue collection at the port. The findings of the study have revealed that during the year 2020/2021 the port earned 11bn/- as compared to 23bn/- and 26bn/- earned during the years 2021/2022 and 2022/2023 respectively.

Subject to public finance act, CAP 348 RE 2020 section 12 requires every executive agency, public corporation, public authority or public institution which charges or imposes and collects fees for services rendered to give fifteen percentage of their gross revenue to the consolidated fund in every quarter of a given financial year (URT,2020).

Since Mtwara port is one of the public authorities, the revenue collected for the three financial years, 2020/21 to 2022/23, fifteen percentage of it forms part of the consolidated fund.

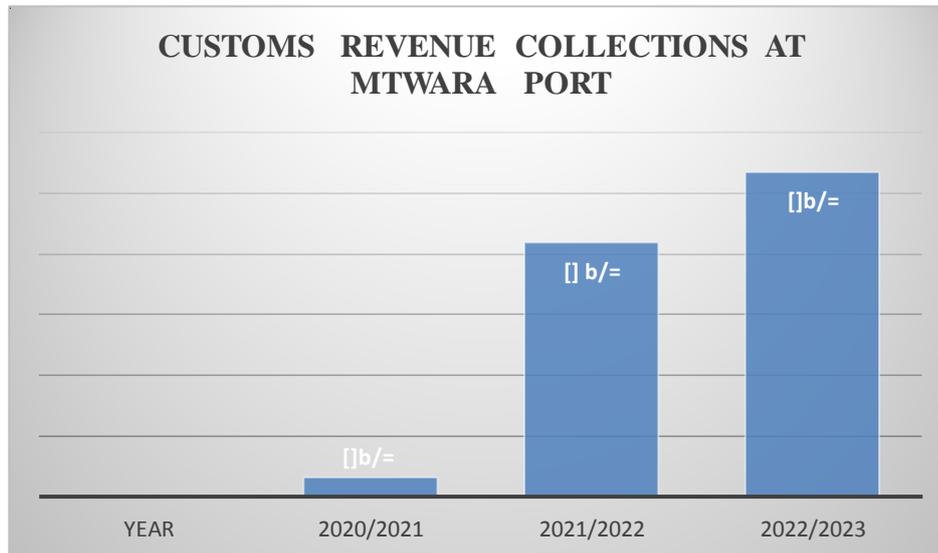
**Figure 4.1: Trend of port revenue collection at Mtwara Port 2020/21 to 2022/23**



#### **4.3.2 Customs Revenue collect during financial year 2020/2021 to 2022/2023**

The study conducted analysis on the amount of customs revenue collection by TRA for three years prior to the study. The financial year 2020/2021 to 2022/2023 was conducted to assess the trend of customs revenue collection at the port. The findings of the study have revealed that during the year 2020/2021 the customs revenue amounted to 1.6bn/- as compared to 20.9bn/- and 26.7bn/- earned during the year 2021/2022 and 2022/2023 respectively.

**Figure 4.2: Trend of customs revenue collection at Mtwara Port 2020/2021 to 2022/2023**



#### **4.4 Multiple Linear Regression Analysis**

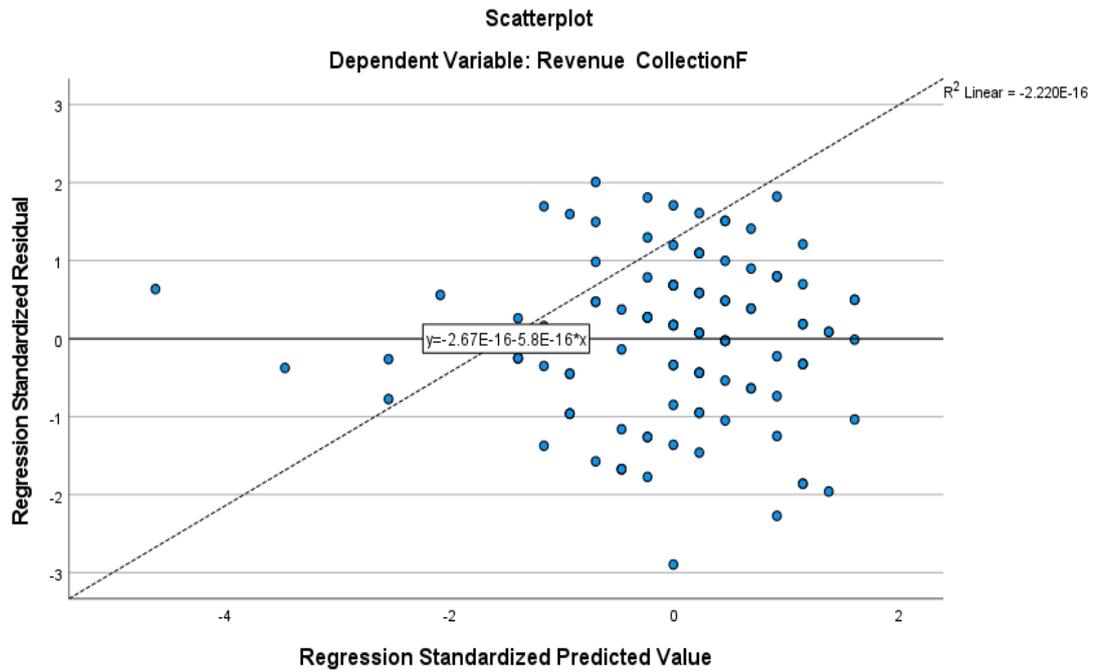
According to Saunders et al. (2019), it requires researchers prior to running data analysis using multiple linear regressions to observe four key necessary assumptions regulating linear regression, namely: the test for linearity, normality test, the test for multicollinearity and homoscedasticity. Therefore, these assumptions were considered as follows.

##### **4.4.1 Test for Linearity**

For good results of multiple linear regression analysis as advocated by Saunders et al. (2019), the relationship between dependent variables and independent variables must obey a linear relationship pattern that can be shown on a scatter-plot or through a measure of the correlation coefficient. Therefore, to determine linearity assumptions, both scatter-plot and Pearson correlation results were used for the analysis.

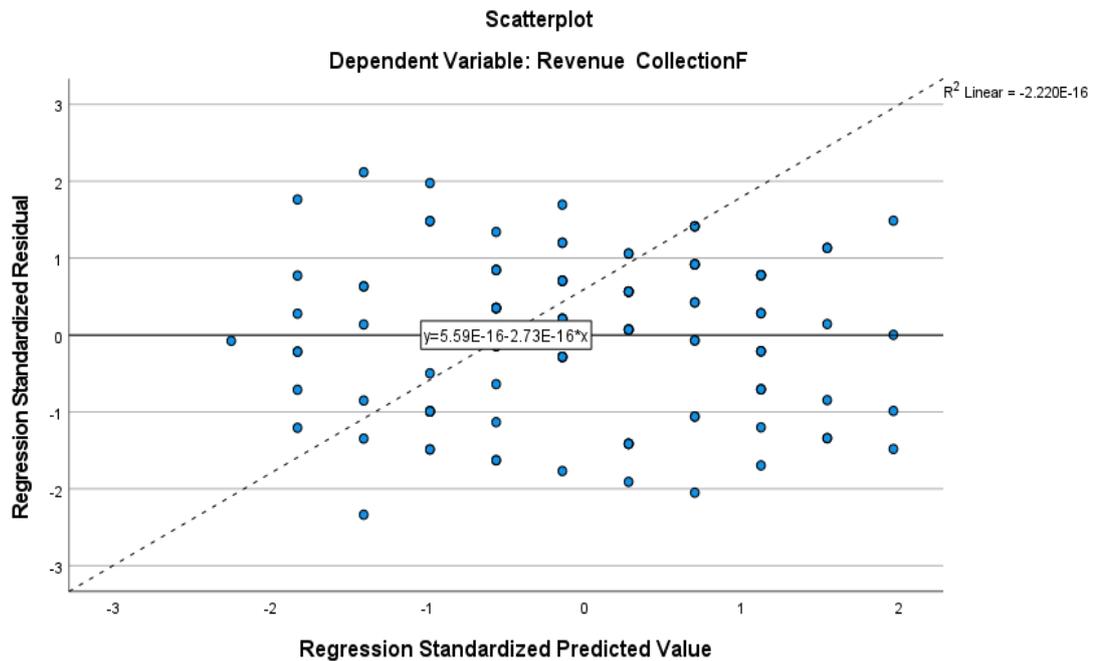
**Figure 4.3: Linearity Assumption. Organisation Capital Resources and Revenue Collection**

Source: Field Data (2023)



**Figure 4.3: Linearity Assumption. Human Capital Resources and Revenue Collection**

Source: Field Data (2023)



**Figure 4.4: Linearity Assumption. Maritime Transport Connectivity and Revenue Collection**

Source: Field Data (2023)

Results in figure 4.3 to 4.4 show a linear representation of dependent and independent variables. Furthermore, the results in table 11 show a correlation coefficient range from 0.151 to 0.398. This indicates that the relationship between dependent variables and independent variables has a positive correlation, portraying a linear relationship between variables. Thus, the linearity assumption was attained using both measures employed in the study prior to data analysis.

#### 4.4.2 Test for Normality

Linear regression requires data to be used in the analysis to be evenly distributed on either side or most to be at the centre, forming a bell-shaped frequency distribution (Saunders et al., 2019). Therefore, to test for normality, the study employed a descriptive statistical measure which Saunders et al. (2019) recommends that the

value for mean, median and mode are likely to be the same for normally distributed data.

**Table 4.7 Test of normality for independent variables**

		Variables		
		Organisation Capital Resources	Human Capital Resources	Maritime Transport Connectivity
N	Valid	115	115	115
	Missing	0	0	0
Mean		3.921	4.132	4.068
Median		4.083	4.250	4.000
Mode		4.000	4.250	3.800

Sources: Field data (2023)

From the table above, the value for mean, median and mode were likely the same, thus the results confirm the condition for normally distributed data values that was compiled prior to multiple regression data analysis.

#### **4.4.3 Test for Multicollinearity**

Linear regression requires independent variables not to have a significant relationship with each other to avoid the problem of multicollinearity as recommended by (Saunders et al., 2019). To determine if the problem of multicollinearity exists or not, two measures were employed, namely the use of correlation coefficients, tolerance value and Variance Inflation Factor (VIF).

**Table 4.7: Test of Multicollinearity**

Variables	Collinearity Statistics	
	Tolerance	VIF
Effect of Transport Infrastructure Connectivity on Revenue Collection	0.991	1.009
Organisation Capital Resources	0.911	1.097
Human Capital Resources	0.917	1.090
Maritime Transport Connectivity	0.930	1.076

Source: Field data (2023)

Results in table 11 portray a correlation coefficient among independent variables ranging from -0.056 to 0.238, which is below the threshold of 0.9 as recommended by (Hair et al., 2014). This indicates the absence of a multicollinearity problem, whereas results in table 4.7 depict a tolerance level higher than 0.9 and Variance Inflation Factor (VIF) not higher than 1 for all independent variables. According to Saunders et al (2019) independent variables with tolerance value 1 or higher and Variance Inflation Factor (VIF) at 1 or below is a suitable measure for the absence of multicollinearity problems among independent variables. In both cases, the results supported the absence of a multicollinearity problem between independent variables that was later used in the data analysis.

#### **4.4.4 Test for Homoscedasticity**

Linear regression requires the residual values to be equally distributed by spreading far amongst the variables. To determine if the residual values are equally distributed or whether they tend to cluster together, a measure of the scatterplot was employed. The results in figures 1 to 3 show that the residual values were evenly distributed as recommended by Saunders et al. (2019), thus the homoscedasticity assumption was attained.

#### 4.5 Multiple Regression Analysis

A regression analysis was carried out to examine the extent to which transport infrastructure connectivity affects revenue collection.

**Table 4.8: Model Summary: Multiple Linear Regression Analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.577 <sup>a</sup>	0.333	0.309	0.352

a. Predictors: Maritime Transport Connectivity, Effect of Transport Infrastructure Connectivity on Revenue Collection, Human Capital Resources, Organisation Capital Resources

b. Dependent Variable: Revenue Collection

In this analysis, the adjusted R square is the coefficient of determination used to give variation in the dependent variable due to changes in variables. From the findings in the above table, the value of the adjusted R square was 0.309, an indication that there was variation of 30.9% of transport infrastructure connectivity effects on revenue collection at Mtwara port due to changes in organizational capital resources, human capital resources and maritime transport connectivity at 95% confidence interval. This implies that the 30.9% changes in revenue collection is accounted for by organizational capital resources, human capital resources and maritime transport connectivity.

On the other hand, R is the correlation coefficient which shows the relationship between the study variables. From the findings shown in the table above, there was a positive relationship between study variables as shown by 0.577(57.7%), while the remaining 42.3% is contributed by other factors.

**Table 4.9 ANOVA.**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.829	4	1.707	13.754	.000 <sup>b</sup>
	Residual	13.654	110	0.124		
	Total	20.483	114			

a. Dependent Variable: Revenue Collection

b. Predictors: Maritime Transport Connectivity, Effect of Transport Infrastructure Connectivity on Revenue Collection, Human Capital Resources, Organisation Capital Resources

From the ANOVA statistics in the table above, processed data had a significant level of 0.000, which shows that the data is ideal for making a conclusion on the study variables. Thus, there is an indication that organizational capital resources, human capital resources and maritime transport connectivity significantly influence revenue collection at Mtwara port. The significance value was less than 0.05, indications that the model was statistically significant for data analysis.

**Table 4.10: Table of Coefficients.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.260	0.393		3.209	0.002
Organisation Capital Resources	0.165	0.055	0.241	2.983	0.004
Human Capital Resources	0.241	0.063	0.308	3.815	0.000
Maritime Transport Connectivity	0.168	0.055	0.241	3.029	0.003

a. Dependent Variable: Revenue Collection

b. Predictors: Maritime Transport Connectivity, Human Capital Resources, Organisation Capital Resources

From the data in the above table, the established regression equation was

$$Y=1.260 + 0.165OCR+ 0.241HCR+0.168MTC$$

Where:

Y = Revenue collection

OCR = Organizational capital resources

HCR= Human capital resources

MTC=Maritime transport connectivity

From the above regression equation it was revealed that holding organisational capital resources, human capital resources and maritime transport connectivity at a constant zero, revenue collection at Mtwara port would be 1.260, where a unit increase in organisational capital resources would lead to increase in revenue collection by a factor of 0.165, a unit increase in human capital resources would lead to an increase in revenue collection by a factor of 0.241 and a unit increase in maritime transport connectivity would lead to increase in revenue collection by a factor of 0.168.

## **CHAPTER FIVE**

### **DISCUSSION OF THE FINDINGS**

#### **5.0 Chapter Overview**

This chapter presents the discussion of the findings based on the study. The presentation in this chapter is divided into two main sections. The first section presents the discussion of findings from the study objectives and the second section presents the summary of the findings obtained from the study.

#### **5.1 Discussion of findings**

##### **5.1.1 The findings on the effects of organizational capital resources on port revenue collection.**

The study had the objective of analyzing the effect of organizational capital resources on revenue collection at Mtwara port. Results of multiple regressions revealed a statistically significant effect of organizational capital resources on revenue collection.

The results of this objective were in agreement with the findings of Mindur (2020), who found that great attention to planning, reliable handling of transshipment of all types of cargos, continuous improvement of port infrastructure and automation of port operations have yielded a stable increase in revenue collection in Singapore ports. Similarly, Tijan et al. (2021) argued that optimum utilization of seaport processes and more efficient use of transport infrastructure need port governance with well-defined policy goals. Furthermore, Nwaogbe et al. (2020) were of the opinion that some of the Nigerian ports are losing a lot of revenue due to inadequate infrastructure and poor government policies, thus calling for serious attention to

improving port infrastructure, investment in equipment facilities which enhance smooth maritime operation and higher potentials for revenue collection. This means that intensive investment in organizational capital resources could play a significant role in enhancing revenue collection amongst Tanzanian ports. Thus, policy and decision makers need to pay attention to investment of organizational capital resources to promote revenue collection at the Tanzanian ports.

### **5.1.2 The findings on the effects of human capital resources on port revenue collection**

The second specific objective of the was to examine effect of human capital resources on port revenue collection at Mtwara port. The results, of multiple regression analysis found a statistically significant relationship of human capital resources to revenue collection at ( $r = 0.398, P < 0.000$ ).

The results of the study obtained were in line with Laing (2021) who pointed out that in Ghana, human resources are an important asset for successful attainment of ports and harbours goals, thus recommending heavy investment in training and development of human resources to enhance efficient operation of ports and harbor activities in Ghana. On the other hand, Nzeru et al. (2015) found that training and development was a critical factor for the effectiveness and performance of Durban Container Terminal, playing a vital role in contributing to the South African economy.

In the same line, Onifade et al. (2020) advised that training and retraining of personnel in the maritime sector is of serious concern in the provision of the right workforce to work in the maritime sector, contributing to a large part of Nigeria's

national economy. Furthermore, the study by Othman et al. (2022) revealed that for developing countries to explore enough business opportunities and maintain their competitive advantage in the fast-growing digital world, they must invest in human capital, institutional and technological dimensions.

In addition, the study by Mthembu and Naude (2023) has reported that in recent times, disruptions to the operations and performance of the Durban port, which is the largest and busiest port in Africa, have been affected by, amongst others, the labour strikes leading to. This decrease in revenue collection and higher operation costs, implies that human resource welfare needs to be handled with care to achieve higher productivity and quality services at the port.

On the other hand, Chen et al. (2019) revealed that all port operations are controlled and operated by human beings, making a human resource an important asset in achieving operations in a timely manner to satisfy customers' needs on time. Therefore, investment in human capital resources needs to be paid attention by decisions and policymakers to attract the right workforce who can meet the challenging needs of the digital world economy.

### **5.1.3 The findings on the effects of maritime transport connectivity on revenue collection**

The third specific objective of the study was to examine the effect of maritime transport connectivity on port revenue collection at Mtwara port. The results from a multiple regression analysis showed that maritime transport connectivity had a significant role in enhancing revenue collection.

The findings of the study were in line with Nyandu (2020) who demonstrated that seaports in South Africa play a major role in enhancing connectivity between sea and land-based modes of transport. Through this, it helps to promote economic activities and facilitates trade, which forms a large part of the revenue collection base.

Similarly, the study by Sahoo et al. (2023) revealed that Senegal's initiative toward improvement of maritime efficiency has resulted in higher potential for higher economic growth and improvement of household's welfare. This implies a higher potential for revenue collection and an ability to pay due to reduction in transportation costs and easy-doing business. We have established that maritime transport connectivity positively impacts port revenue collection to a small extent, where table 9 found that the volume of cargos handled to hinterland and overseas areas had significant influence on revenue collection, followed by volume of cargos handled from hinterland, overseas and extent of hinterland connectivity between land and sea transportation.

This indicates that, for smooth movement of cargoes to and from various parts of the world, transport infrastructure connectivity needs to be enhanced for good performance in the volume of cargoes handled and revenue collection.

#### **5.1.4 The findings with regard to the trend of revenue collection at Mtwara port.**

The study wanted to identify the trend of revenue collection for both port revenue collected by TPA and customs revenue collected by TRA during the financial years 2020/2021 to 2022/2023. The results of the findings indicated that both port revenue and customs revenue have shown an increasing trend at Mtwara port.

The results of the study were in line with findings obtained by the Bank of Tanzania showing that during the years 2021 to 2023, the volume of cargos handled at Mtwara port increased due to the rise in the exportation of coal, cement, cement, cashewnuts and importation of petroleum products (URT, 2021, 2022,2023).

Furthermore, the results of findings obtained by TRA show that during the year 2020/2021, customs revenue contribution to government revenue amounted to 7.33 trillion as compared to 15.25 trillion collected during 2021/2022 (URT, 2021, 2022). This implies that an increase in the volume of cargo handled at Mtwara port had a significant contribution to total customs revenue collected during the period from 2020 to 2023.

#### **5.1.5 The findings with regard to applicability of resource-based theory.**

The study employed resource-based theory (Barney, 1991) in its discussion. The resource-based theory explains that an organisation is a bundle or a pile of assets and resources that are both tangible and intangible in nature that if effectively and efficiently utilized, an organisation enjoys a competitive advantage to access available opportunities in the market.

Thus, the results of the study confirm that transport infrastructure connectivity is an important factor for port revenue collection and customs revenue collection. In this regard, transport infrastructure connectivity is an important resource that needs to be recognised by resource-based theory.

#### **5.1.6 Summary of the Findings**

The main purpose of the study was to examine the effect of transport infrastructure connectivity on revenue collection at Mtwara port. The study specifically aimed at

testing the effect of organisation capital resources, human capital resources and maritime transport connectivity on enhancing revenue collection. The data of the study was collected from 115 employees at Mtwara port.

The study findings revealed that all independent variables supported the dependent variable. With the aid of the Pearson correlation coefficient, the results indicated that there was a positive correlation at an average of 0.339 to 0.398 between organizational capital resources, human capital resources, maritime transport connectivity and revenue collection. This implies that increased investment in organizational capital resources, human capital resources and maritime transport connectivity result into an increase in revenue collection.

In order to address the study objectives one to three, the null hypotheses H1, H2 and H3 were tested using multiple regression analysis. On the first objective, it was hypothesized that there is no significant impact of organisation capital resources at Mtwara port. Results for the same revealed a low positive statistically significant relationship between organisation capital resources and revenue collection ( $r = 0.339$ ,  $p < 0.000$ ) at 5% level of significance, this implies that alternative hypothesis H1- was supported, and the null hypothesis was rejected.

On the second objective, it was hypothesized that there is no significant impact of human capital resources on revenue collection at Mtwara port. Results revealed a low positive statistically significant relationship between human capital resources and revenue collection ( $r = 0.398$ ,  $P < 0.000$ ) at 5% level of significance, this implies that alternative hypothesis H2- was supported, and the null hypothesis was rejected.

On the third objective, it was hypothesized that reliable maritime transport connectivity has no significant impact on revenue collection at Mtwara port. Results revealed that reliable maritime transport connectivity has a significant influence on revenue collection ( $r = 0.340$ ,  $P < 0.001$ ) at a 5% level of significance. This implies that alternative hypothesis H3- was supported, and hence the null hypothesis was rejected.

## CHAPTER SIX

### CONCLUSIONS AND RECOMMENDATIONS

#### 6.0 Chapter Overview

This chapter presents the discussion on the conclusion delivered from the study findings and then provides recommendations necessary for this topic under the study.

#### 6.1 Summary

The study assessed the effect of transport infrastructure connectivity on revenue collection in Tanzania. The study was conducted in Mtwara port under the guidance of resource-based theory. The study employed a cross-sectional case study design where quantitative data was collected using questionnaires of 115 participants.

Using a random sampling method, 115 questionnaires were administered to collect data that was followed by prerequisite tests for linearity, normality, multicollinearity and homoscedasticity, then analysis was carried out using descriptive statistics and multiple regression analysis. Furthermore, ethical consideration was part of this study to ensure compliance with respect for human rights and rights of entities participating during the study.

The first objective of the study was to assess the effect of organisation capital resources on revenue collection at Mtwara port. The results of multiple regressions revealed a statistically significant effect of organizational capital resources on revenue collection at ( $r= 0.332, P<0.000$ ).

The second specific objective of the was to examine effect of human capital resources on port revenue collection at Mtwara port. The results, of multiple

regression analysis found a statistically significant relationship of human capital resources to revenue collection at ( $r = 0.398, P < 0.000$ ).

The third specific objective of the study was to examine the effect of maritime transport connectivity on port revenue collection at Mtwara port. The results from a multiple regression analysis showed that maritime transport connectivity had a significant role in enhancing revenue collection at ( $r = 0.340, P < 0.000$ ).

### **6.3 Conclusion**

This study focused on the assessment of the effects of transport infrastructure connectivity on revenue collection in Tanzanian ports with a case study of Mtwara port, with specific emphasis on analyzing the effect of organizational capital resources, human capital resources and maritime transport connectivity on revenue collection.

The study adopted a cross-sectional case study design to address the effect of transport infrastructure connectivity on revenue collection at Mtwara port. The primary data was utilized in obtaining evidence of the study from the randomly selected employees at Mtwara port.

The study utilized a multiple regression analysis, where the overall pattern of the findings revealed that variation in revenue collection was significantly explained by changes in investments in organizational capital resources, human capital resources and maritime transport connectivity.

Thus, it can be concluded that transportation infrastructure connectivity is an important resource for the successful performance of Tanzanian ports. For this

reason, the study recommends the addition of transport infrastructure to be included in resource-based theory as an important resource for successful performance of any organisation, including Tanzanian ports.

#### **6.4 Recommendation**

The study was of the aim of providing advice on how Tanzanians can benefit from using available ports to collect revenue. The study found out that resource-based theory had a significant contribution to enhancing revenue collection at Mtwara port, through investment in organizational capital resources, human capital resources and reliable maritime transport connectivity.

In accounting for this, the study recommends that provided ports and transport infrastructure in Tanzania are natural resources owned by the government. Policy and decision makers pay serious attention to enhancing reliable transport infrastructure connectivity by investing in organizational capital resources, human capital resources and maritime transport connectivity to promote port efficiency, attract more port users and hence more revenue.

Basing on the conclusion reached, the following recommendations was considered relevant for Tanzanian ports' performance in revenue collection:

- i. The Government of Tanzania should find to the means of enhancing investment in human capital resources at Tanzanian ports to enable the ports to collect more revenue.
- ii. The government of Tanzania should invest more in the maritime transport infrastructure connectivity by overcoming all barriers hindering smooth movement of goods and passengers within the country and across land-

linked countries that significantly depend on Tanzanian ports for access to and from the global market.

- iii. Ports management needs to take into account the challenges facing organizational capital resources that negatively affect revenue collection and seek for solutions to improve these challenges to improve revenue collection.

### **6. 5 Limitation and arears for further research.**

The study gives knowledge contribution and policy recommendation on the areas of transport infrastructure connectivity and revenue collection in Tanzania with a case study of Mtwara port. Despite the contribution given, the study faced methodological limitations where the study employed multiple linear regression analysis with the aid of SPSS.

Furthermore, the current study employed a cross-sectional case study design. The study suggests future studies to be extended at national level using a longitudinal approach where a sample representing major ports in Tanzania are involved.

The study composed a sample of employees operating at Mtwara port, which means that employees operating in other ports of Tanzania were not investigated. Therefore, the findings cannot be generalized to all the ports across the country, thus the following are recommended areas for further research in the future.

- i. Studies in the future can be extended to other ports operated by the Tanzania Ports Authority.
- ii. Assess the role of capital resources in cargo handling

- iii. Assess the role of digital transformation in maritime transport in revenue collection
- iv. The role of smart port operation in revenue collection
- v. The role of Tanzanian ports in employment creation
- vi. The influence of the port community system on the maritime transport sector in Tanzania
- vii. The economic contribution of Tanzanian ports

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**APPENDICES**  
**QUESTIONNAIRES**

APPENDIX I: Questionnaire to TPA Officers

**Cover Letter for Questionnaire.**

Dear Respondent,

My name is *Nzunda Elias, S* pursuing Masters of Business Administration at The Open University of Tanzania. I am conducting a study on “**The effect of transport infrastructure connectivity on revenue collection at Mtwara port**”. I would appreciate your support on this study because you are the right person to give me information on this issue. The findings in this study are expected to help in suggesting recommendations for improving the best way of enhancing transport infrastructure connectivity in order to increase revenue collection at Mtwara port.

For any clarification, please contact Nzunda Elias, S, [nzundaelias942@gmail.com](mailto:nzundaelias942@gmail.com)  
. **0654694150.**

The information provided will be used for academic purpose only, thus answers provided will remain to be confidential. I kindly need your assistance.

Please! Do not write your name.

**SECTION A: GENERAL INFORMATION.**

Please select the correct answer by putting a circle (○) on the correct answer

1. Gender of respondent

Male	Female
1	2

2. What is your highest level of academic?

Primary	Certificate	Diploma	Bachelor	Master	PhD
1	2	3	4	5	6

3. How long have you served in the revenue collection sector?

1 years	2-5 years	6-10years	11 -15years	16 years and above
1	2	3	4	5

4. Are you aware of the effect of transport infrastructure connectivity on revenue collection?

Yes	No
1	2

## SECTION B: STUDY OBJECTIVES

5. The study wants to assess the effect of organisational capital resources on port revenue collection. The answers are rated into response rate with a Likert scale of SD – Strongly Disagree, D – Disagree, M – Moderate, A- Agree and SA-Strongly Agree.

<b>Codes</b>	<b>VARIABLE</b>	<b>SD</b>	<b>D</b>	<b>M</b>	<b>A</b>	<b>SA</b>
TPFSO1	Formal structure of your organisation	1	2	3	4	5
TPPG2	Port governance	1	2	3	4	5
TPPUSP3	Public service port	1	2	3	4	5
TPTP4	Tool port	1	2	3	4	5
TPLP5	Landlord port	1	2	3	4	5
TPPRSP6	Private service port	1	2	3	4	5

TPOFS7	Organisational formal systems	1	2	3	4	5
TPOIS8	Organisational informal system	1	2	3	4	5
TPPL9	Planning	1	2	3	4	5
TPCO10	Coordinating	1	2	3	4	5
TPMN11	Managing	1	2	3	4	5
TPIC12	ICT	1	2	3	4	5

6. The study aims to examine the effect of human capital resources on port revenue collection. The answers are rated into response with a Likert scale of DA – SD – Strongly Disagree, D – Disagree, M – Moderate, A- Agree and SA-Strongly Agree.

<b>Codes</b>	<b>VARIABLE</b>	<b>SD</b>	<b>D</b>	<b>M</b>	<b>A</b>	<b>SA</b>
TPTN1	Training	1	2	3	4	5
TPKN2	Knowledge	1	2	3	4	5
TPTS3	Technical skills	1	2	3	4	5
TPCT4	Creativity	1	2	3	4	5
TPEX5	Experience	1	2	3	4	5
TPSP6	Succession planning	1	2	3	4	5
TPINV7	Investment in human capital	1	2	3	4	5
TPFLN8	Forecasting labour needs	1	2	3	4	5

7. The study aims to examine the role of maritime transport connectivity on revenue collection. The answer are rated into response with a Likert scale of SD – Strongly Disagree, D – Disagree, M – Moderate, A- Agree and SA-Strongly Agree.

<b>Codes</b>	<b>VARIABLE</b>	<b>SD</b>	<b>D</b>	<b>M</b>	<b>A</b>	<b>SA</b>
TPHCLS1	Hinterland connectivity between land and sea transportation	1	2	3	4	5
TPVCHFO2	Volume of cargo handled from overseas	1	2	3	4	5
TPVCHFHA3	Volume of cargo handled from hinterland area	1	2	3	4	5
TPVCHTO4	Volume of cargo handled to overseas	1	2	3	4	5
TPVCHTH5	Volume of cargo handled to hinterland areas	1	2	3	4	5

8. The study aims to examine the effect of transport infrastructure connectivity on revenue collection. Please rate the extent to which transport infrastructure connectivity impact revenue collection. The answer are rated into response with a Likert scale of VGE – Very Great extent, GE- Great Extent, ME- Moderate Extent, LE- Low Extent, NA- Not at all.

<b>NA</b>	<b>LE</b>	<b>ME</b>	<b>GE</b>	<b>VGE</b>
1	2	3	4	5

9. Please rate the following measures with regards to port revenue collection

<b>Codes</b>	<b>MEASURE</b>	<b>SA</b>	<b>A</b>	<b>M</b>	<b>D</b>	<b>SD</b>

IMP1	Importation	5	4	3	2	1
EXP2	Exportation	5	4	3	2	1
INVI3	Investment in infrastructure	5	4	3	2	1
INVCR4	Investment in Capital Resources	5	4	3	2	1
INVHCR5	Investment in Human Capital Resources	5	4	3	2	1

10. Please state the amount of revenue collection for the year 2020 to 2023

Year	2020/2021	2021/2022	2022/23
Revenue Collection			

\*\*\*\*\*Thank you\*\*\*\*\*

**RESEARCH SCHEDULE**

<b>SN</b>	<b>ACTIVITY</b>	<b>DURATION (WEEKS)</b>
1.	Research Proposal Development	12
2.	Preparing Study Tools	1
3.	Pre – Testing the study tools	1
4.	Data Collection	3
5.	Data Analysis and Interpretation	2
6.	Report Writing	2

## APPENDIX IV: RESEARCH CLEARANCE E



Ref. No OUT/ PG2017998830

06<sup>th</sup> September, 2023

Regional Manager,  
Tanzania Port Authority,  
P.O Box 530,  
MTWARA.

**RE: RESEARCH CLEARANCE FOR MR NZUNDA ELIAS, SREG NO: PG2017998830**

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1<sup>st</sup> March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1<sup>st</sup> January 2007. In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief

background, the purpose of this letter is to introduce to you **Mr Nzunda Elias, S, Reg. No: PG2017998830** pursuing **Master of Business Administration (Accounting and Financing)**. We here by grant this clearance to conduct a research titled "**The Effect of Transport Infrastructure Connectivity on Revenue Collection: A Case of Mtwara**

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**Port in Tanzania**". He will collect his data as indicated at your office from 06<sup>th</sup> September to 09<sup>th</sup> November 2023.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820. We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

**THE OPEN UNIVERSITY OF TANZANIA**

Prof. Magreth S. Bushesha

For: **VICE CHANCELLOR**



Ref. No OUT/ PG2017998830

06<sup>th</sup> September, 2023

Regional Manager,  
Tanzania Revenue Authority,  
P.O Box 639,  
**MTWARA.**

**RE: RESEARCH CLEARANCE FOR MR NZUNDA ELIAS, S REG NO: PG2017998830**

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1<sup>st</sup> March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1<sup>st</sup> January 2007. In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief

background, the purpose of this letter is to introduce to you **Mr Nzunda Elias, S, Reg. No: PG2017998830** pursuing **Master of Business Administration (Accounting and Financing)**. We here by grant this clearance to conduct a research titled "**The Effect of Transport Infrastructure Connectivity on Revenue Collection: A Case of Mtwara**

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**Port in Tanzania**". He will collect his data as indicated at your office from 06<sup>th</sup> September to 09<sup>th</sup> November 2023.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820. We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

**THE OPEN UNIVERSITY OF TANZANIA**



Prof. Magreth S. Bushesha

For: **VICE CHANCELLOR**



THE UNITED REPUBLIC OF TANZANIA  
 MINISTRY OF TRANSPORT  
 TANZANIA PORTS AUTHORITY  
 (TPA)



Ref. No. RB.6/198/01-P/10

Date: 12<sup>th</sup> September, 2022

Vice Chancellor,  
 The Open University of Tanzania (OUT),  
 P.O.BOX 23409,  
**DAR ES SALAAM**

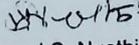
Dear Sir/Madam,

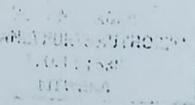
RE: RESEARCH CLEARANCE

Reference is made to your letter with reference number **OUT/PG2017998830** dated **06<sup>th</sup> September, 2023** introducing **Mr. Nzunda Elias** to give him a clearance to conducting a research titled **"The effect of Transport Infrastructure Connectivity on Revenue Collection: A Case of Mtwara Port"**.

2. We are pleased to inform you that the request for the research clearance on the above-named student has been accepted. We hereby offer our cooperation and facilitation of this research activity within the time specified and we advise Mr. Nzunda Elias to visit the Office of Principal Human Resource Officer – Mtwara Port for further guidance.

3. We wish you a success in this study.

  
 Ferdinand S. Nyathi  
PORT MANAGER



**Copy;** Mr. Nzunda Elias

Industrial Area Bandari Road, P.O. Box 530, MTWARA  
 Telephone +255-23-2333125, Fax: +255-23-2333153, E-mail: [pmmtwara@ports.go.tz](mailto:pmmtwara@ports.go.tz)  
 Website: [www.ports.go.tz](http://www.ports.go.tz)



**TANZANIA REVENUE AUTHORITY**

**INTERNAL MEMO**

**To** ARM-D

**Ref:** TRA/RM/MTR/FIELD/VOL.II

**Date:** 13<sup>th</sup> September, 2023

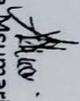
**SUBJECT: PLACEMENT OF FIELD STUDENT (RESEARCH)**

Kindly refer to the above subject.

**Mr. Nzunda Elias Stephano** is a student from **The Open University of Tanzania**

He has been placed at your Office for collection of data for his research titled **the effect of transport infrastructure connectivity on Revenue collection from 06<sup>th</sup> September to 09<sup>th</sup> November, 2023.**

Kindly offer him any necessary cooperation as it may be required, and make sure that he abides to TRA staff Regulations, core, values, dress code, punctuality and all TRA related Regulations. Please note that there shall be no extension of the field-data collection period.

  
Agriplina Msumari

**For: Regional Manager**

**Copy to: Nzunda Elias Stephano**