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CHANGE MANAGEMENT AT THE PORT OF TEMA: A CASE STUDY OF FREIGHT FORWARDERS ATTITUDES TO NEW POLICIES.

NORVAN ACQUAH-HAYFORD

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BY

NORVAN AQUAH-HAYFORD

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NOVEMBER, 2021

DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature……. Date……..……

Name: Norvan Acquah-Hayford MAPR20043

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the Ghana Institute of Journalism.

Supervisor's Signature: …… ……. Date……

Name: Dr Rosemary Obeng - Hinneh

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DEDICATION

I dedicate this work to my family and loved ones.

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ABSTRACT

In this era of globalisation and technological advancement, it has become necessary for the simplification, harmonisation and automation of the procedures applied to international trade, particularly the requirements and formalities related to importation and exportation with a view to further expediting the movement, release and clearance of goods, including goods in transit. This research was carried out to assess change management at the Port of Tema, a case study of freight forwarders attitudes to new policies. Simple random technique was used to sample the freight forwarders who were used for the study. A total of 300 freight forwarders were used for the study. The data was analysed using descriptive statistics, mean analysis inferential statistics analysis and regression analysis.

Analysis of the data revealed that the Paperless Port System has helped to expedite the procedures involved in freight documentation, subsequently reducing freight clearance at the port and the replacement of the manual processes. The freight forwarders emphasised that they are strongly not against ICUMS port clearing reforms at the Tema port as it is meant to enhance trade facilitation just that there should be broader consultation and key agreements before the introduction and implementation of new policies.

From the research, it is evident that the Paperless Port System has positive prospects of improving customs procedures and enhancing port efficiency as it has enhanced documentation, helped in revenue mobilization thereby increased revenue, among others. The research recommends periodic capacity building for all stakeholders as a matter of policy so they become accustomed to new trends and features of the paperless port clearing system. The study concludes that all stakeholders should contribute their quota to make ICUMS a success story and fulfil all trade related regulatory requirements.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In this era of globalization and technological advancement, it has become necessary for the simplification, harmonization and automation of the procedures applied to international trade, particularly the requirements and formalities related to importation and exportation with a view to further expediting the movement, release and clearance of goods, including goods in transit. Many countries like Singapore, Pakistan and United Arab Emirates (Dubai) have long introduced paperless port clearing systems in their ports to aid transaction Integrated Customs Management System [ICUMS]) the paperless clearing system of high-ticket port business with ease and convenience (Huff, 1994).

Ghana's economy is largely dependent on trade and the low cost of sea transport, makes it a preferred mode of transport. Also, seaport is a link in the chain of transport through which the external trade of the nation passes, as much as a gateway. Seaports contribute extremely to the economy through the enhancement of maritime trading activities. The activities of water transport in Ghana are carried out mainly through the ports. In Ghana, the hub for water transportation is the Tema and Takoradi Ports. The amount of cargo handled by these ports continues to increase over the years both from within the country and outside the sub-region. However, these benefits can be erased if there are inefficiencies in the management and the control of traffic in the country's ports (Amanfu, 2010).

Ports and custom operations in Ghana are encumbered with several challenges, which have militated against the smooth functioning of the various institutions, concerned with ports

management (Ollenu, 2002). Delays in the clearance of goods due to bureaucratic processes have been the major setback to ports efficiency in Ghana. Notwithstanding, ports operation and custom practices are soiled with corruption which has tainted the image of the management of the ports. Lack of reliable and common database has also been a major factor impeding the operations of the ports (Bainiah, 2008).

In line with the above, ports and customs operations and management in Ghana have been characterized by perceived corruption even though there has been increasing volume of trade, expansion works and technological advancement over the past decade. These inefficiencies, unwarranted delays and perceived corrupt practices situations have undermined the efforts of the management of the ports and customs agencies, especially Customs Excise and Preventive Service (CEPS) leading to escalating ports and customs management challenges (Bainiah, 2008).

Amanfu (2010) has explained that new investments, emanating from the Government–driven Gateway Project, in the maritime industry has resulted in general improvement in Ghana's infrastructure and facilities including sea, road, rail and air transportation systems. This is helping Ghana to position itself as an ideal destination in the region for international trade and investment. It is worthy to mention that, when international vessels call at ports, they are often required to submit cargo declarations to both customs and port authorities. Since these documents share a large number of common data elements, the introduction of electronic systems and corresponding changes to business processes may offer an opportunity for improved efficiency.

As a product of Ghana's gateway project, Government of Ghana introduced the Ghana's Single Window (GCNet) and now the paperless system in September, 2018 with the objective of facilitating trade and making the ports in Ghana efficient. As Koh (2010) has noted, the Single

Window helps to simplify trade processes and procedures as well as improve transparency and predictability in international trade transactions. This means fewer complexities, less delays and lower costs of trade that can ultimately lead to improved competitiveness and more trade. Koh (2010) states further that Single Window for trade became necessary as a result of global upsurge in trade and its concomitant problems. In support, Veloso and Kumar (2002) were of the view that the value of international trade has grown 50 times higher in 1999 than the story was in 1960.

The Government of Ghana, Ghana Ports and Habour Authority (GPHA), Customs Excise and Preventive Service (CEPS) and Ghana Revenue Authority (GRA) have since the introduction of the paperless port clearing system in 2018 emphasized the benefits of the paperless system. This means faster clearance times for legitimate trade, improved compliance as a result of increased access to regulatory information and functions.

Also, the paperless system has led to an enhanced custom to customs coordination and linkage with other border regulatory agencies at the national and international level for coordinated border management, increased transparency in regulatory processes and decision-making, the use of performance measurement to improve customs procedures and enhanced detection of irregularities and illicit consignments through the collection and analysis of data.

For the GPHA to achieve its vision and mission statements, it has through many ways operationalised many reforms and transformation projects and one of the key ones is the paperless system in which successive governments have all played major roles to arrive at this point amidst fierce opposition from some of the freight forwarders at the ports as it will curtail their irregularities and corrupt practices.

The benefits of this paperless system include quicker processing of cargo information by ports and customs resulting in quicker vessel turn-around, a more consistent approach to cargo and vessel data reporting for shipping lines, increased confidence in the system of reporting and timeliness of responses for importers and exporters; flow-on benefits for consumers in the form of lower cost of goods; and increased knowledge of IT (Information Technology) and EDI (Electronic Data Interchange) in the community.

Ghana has two main seaports, namely- Tema Port and Takoradi Port which are administered by the state-owned Ghana Ports and Harbours Authority (GPHA). The basic functions of GPHA are to provide services to importers and exporters at internationally competitive prices as well as handle all goods with care and at the fastest transiting time. The statutory functions of the GPHA, in generic terms, are: to plan, manage, maintain, operate and control ports in Ghana (GPHA, 2008).

The Ghana Ports and Harbours Authority (GPHA) envisions becoming a maritime hub, the most efficient one-stop services centre in the Economic Community of West African States (ECOWAS) and Africa as a whole and indeed a reliable maritime gateway to the West Africa sub-region (GPHA, 2008). However, the operations in the Ports have been fraught with several challenges. Notable among them are: corruption among trade officials, resistance to change, over reliance on privatization, false declaration and delays, lack of transparency, weak institutions and congestion, lack of appropriate automation leading to the loss of millions of Ghana cedis annually in revenue (Caesar, 2010).

Moreover, several interventions have, however, been put in place to solve most of these problems in order to adopt good maritime practices. For instance, the Single Window (GCNet)

concept was established to enhance the competitiveness of Ghanaian businesses by removing constraints to legitimate trade development and facilitation while ensuring that collection of trade-related government revenue was not compromised (Bainiah, 2008) and now there is the paperless port clearance system.

In line with Government of Ghana policy on trade, there is the need to strengthen intra–regional trade and international trade. For that matter, CEPS has had to marry its traditional role of revenue collection with trade facilitation and work more closely with GPHA which is national port authority of Ghana, responsible for the governance, maintenance and operation of the ports of Ghana, principally the Sekondi-Takoradi Port, and the Tema port and Fishing Habour. The Single window (GCNet) introduction and implementation allows for the lodgement and exchange of data and standardized information which satisfy all regulatory requirements with a single administrative document for all customs regimes which is having its own challenges and problems.

Now there is the introduction and implementation of the paperless clearing system by the Ghana government which was expected to make clearing of goods and other consignments to be carried out in four hours was met with opposition and complaints from some of the freight forwarders, clearing agents and customers of the ports. However, it is almost four years into its establishment and the challenges that existed in port operation which it is to address are still pervasive. The study assesses change management at the port of Tema, with particular focus on freight forwarders' resistance to new policies with specific emphasis on the paperless clearing system in the port.

This phenomenon of flying entries (entries which have not been paid and yet can still be used in the clearing process) was therefore common at the port. Some custom officials and freight

forwarders also extorted money from the general public with the view to reducing the process of clearance for such people (CEPS, 2004). Therefore, they vehemently resisted the introduction and implementation of the Integrated Customs Management System [ICUMS]) the paperless clearing system reforms in the operations of the Tema port through continuous demonstrations and other public manifestations as well as numerous press conferences and press releases. All in all, the freight forwarders saw the new reforms as a change for which reason the change needs to be managed.

1.2 Statement of the Problem

Ghana is gradually becoming a service-oriented economy as is evident in the 2018 budget. The service sector, the largest sector of the economy, accounted for 4.7% of GDP in 2018 (MoFEP, 2018). This development means that more people are getting involved in retail trade which has a higher tendency of increasing international trade; mostly imports. Justifiably so, the repercussions are seen at the points of entry and exit as they manifest into serious bottlenecks such as high dwell-time, congestion and corruption which compound the already cumbersome clearing procedures and technological inefficiencies. This situation has undermined the efforts of the management of the ports and the operations of CEPS leading to escalating port and customs management challenges.

It is therefore evident that in the past few decades, Governments of Ghana have committed scarce resources towards building appropriate infrastructure through the expansion of the ports and automation of port operations (Integrated Customs Management Systems [ICUMS] and GCNet system) and paperless port clearing system to subsequently remove substantially the

challenges but the problems seem to have just begun Bainiah (2008). However, very little appears to have been done on port automation in Ghana, especially on Ghana's paperless port clearing system.

One of the few previous studies done so far in Ghana in relation to Tema port was by Asuliwonno (2011). In his study, Asuliwonno examined the extent of automation in Ghana's port operations, impact of GCNet on port efficiency, custom practices and government trade policy but failed to measure most basic indices which determine the level of efficiency at the port as a result of the introduction of GCNet such as transit time, turnaround time; and document processing time; among others. He also examined only the post-GCNet implementation era without examining the earlier situation in order to effectively compare both situations and a study on Ghana's Single Window (Wes Blue Consulting) on port and customs operations in achieving port efficiency by Broni (2014).

Consequently, this study will employ the use of two solid change management scientific theories, namely: the Systems Theory (Christopher, 1998) to identify the actors and the relationships within a supply chain context, and the Theory of Constraints (Goldratt, 1993) to isolate the constraints of the system, and exploit them positively to achieve the goal of the whole system. These two theories are suited to the subject of this study because the former views the freight forwarders attitude as a challenge in its entirety as composed by actors, with intertwined relationships between them and influenced by the constraints in the change management process. Whilst the latter, focuses on the constraints of the system, i.e. within the freight forwarders, and through the application of a five-step-process, elevates such constraints from the system.

Furthermore, the clear winners of the Integrated Customs Management System (ICUMS) paperless port clearing system initiative have been the traders, who benefit from faster clearance times through customs and a reduced need to provide facilitation money. Representatives of shipping owners and agents were vocal in their support of the Integrated Customs Management System (ICUMS) paperless policy, because they now have to produce less documentation and because vessel turnaround time has been reduced. The Treasury also benefits from higher revenues and from faster access to tax payments.

However, the losers are those Customs Excise and Preventive Service (CEPS) personnel and the freight forwarders who had previously benefited from substantial facilitation payments that traders had offered to accelerate cargo clearance, to close their eyes when cargo left port premises without a declaration, or to accept declarations that included under-invoicing and erroneous product classifications so as to reduce the amount of duties due.

Some freight forwarders and Customs Excise and Preventive Service (CEPS) personnel are clearly unhappy with the current situation, afraid that any further modernization of Customs Excise and Preventive Service (CEPS) will further undermine their entrenched positions, the drastic changes with respect to recruitment and training requirements, the further change in the port management structure and new cargo handling policies and lastly curtailing their perceived corrupt practices and tendencies in their freight forwarding business. Therefore, this current study will evaluate the new roles of the freight forwarders with the introduction of the (Integrated Customs Management System (ICUMS) the paperless clearing system reforms in the operations of the Tema port.

In addition, some personnel invariably tend to frustrate traders with a view to extracting payments or delaying the process. Others have tested the system to try to find any loopholes that

they might be able to exploit. Decisive action against such officers, albeit not as severe as might have been expected, serves as a deterrent against such actions and bad attitudes. It is therefore a problem that is worth researching into to ascertain the change management procedures and processes at the port of Tema, a case study of freight forwarders attitudes to new policies.As at now no study has been found to have been conducted to assess change management at the port of Tema, the case of freight forwarders attitudes to new policies most especially the impact of the paperless system for instance in the port. It is therefore important to investigate the experiences freight forwarders go through regarding time they spend to complete documentations or clear a container at the Tema port prior to the introduction of the paperless clearing system. How many days a ship spends at the dock before the implementation of the ICUMS, a paperless clearing system, has it improved revenue collection and what are the challenges associated with the paperless ports clearing system at the Tema port? These are worth investigating.

1.3 Research Objectives

The principal purpose of this study was to assess change management at the port of Tema, a case study of freight forwarders attitudes to new policies. The specific objectives of this study were to:

1. Evaluate the new roles of the freight forwarders with the introduction of the (Integrated Customs Management System [ICUMS]) a paperless clearing system reforms in the operations of the Tema port.

2. Examine the extent to which the paperless port clearing system reforms (Now ICUMS) has impacted on processing of document by the freight forwarders at the Tema port.

3. Find out the challenges freight forwarders go through with the implementation of the paperless port clearing system (ICUMS) reforms at the Tema port.

4. Recommend change management strategies and policies decisions that the port authorities can adopt to improve the paperless port clearing system (ICUMS) at the Tema port.

1.4 Research Questions

The study was guided by the following research questions:

1. What are the new roles of the freight forwarders with the introduction of the new paperless clearing system reforms (ICUMS) in the operations of the Tema port?
2. How has the extent to which the paperless port clearing system reforms (ICUMS) impacted on processing of document by the freight forwarders at the Tema port?
3. What are the challenges freight forwarders go through with the implementation of the paperless port clearing system (ICUMS) reforms at the Tema port?
4. What are the change management strategies and policies decisions that the port authorities can adopt to improve the paperless port clearing system (ICUMS) at the Tema port?

1.5 Significance of the study

This study is aimed at improving port efficiency and custom practices and operations in Ghana. This attest to the general increase in volume and complexity of world trade highlights the importance of port efficiency and why interventions targeted at ensuring the speedy transfer of goods across boundaries of Ghana must be pursued with the necessary level of commitment by all stakeholders particularly the freight forwarders. Therefore, this research will help inform the managers of the port and the administrators of the paperless port clearing system of the usefulness

of the system in-fast tracking the operations of the ports and reduction of trade related malfeasance through the rightful application of the system.

The effective use of the paperless port clearing system will significantly reduce corruption which has often been linked to ports operations and customs practices. The system also has a tendency of enhancing efficiency and effectiveness as less time will be required to clear goods, share information and the problem of delays will fade into oblivion.

The findings of the study will provide the required strategies for improving the efficiency of the ports in Ghana and particular focus on Tema port. This will put the ports on a better pedestal to withstand international competition. It will also help to establish the strength of the paperless clearing system, ascertain the threats and weaknesses of system which will suggest to management ways to provide superior and exceptional tailored made services to their valued customers.

1.6 Delimitation of the study

The study focused only on the freight forwarders' perspectives on the introduction, implementation and challenges inherent with the paperless clearing system policy particularly because they are significant end-users of the system in the value and supply chain.

The study addressed the roles and nature of the paperless port clearing system in the operations of the Tema port and other related issues. Also, sought to assess the impact of the paperless port clearing system on the operations of the freight forwarders and Customs Excise and Preventive Service in revenue collection at Tema port.

The study did not extend to other regions of Ghana. Since the study did not cover the whole country the findings and recommendation apply to Tema port in the Greater Accra region only.

1.7 Organisation of the Study

The study is set out into five chapters. Chapter One is the introduction which is made up of background to the study, statement of the problem, purpose of the study, research question, significance of the study, delimitation, limitation and organisation of the study. Chapter Two focuses on the review of related literature, which is followed by Chapter Three on the research methods and it discusses the research design, the population, sample and sampling procedures, instruments, data collection procedures of the study and data analysis. Chapter Four includes analysis and discussions of the data collected. Finally, Chapter Five is devoted to the summary of key findings, conclusions, recommendations of the study based on the findings and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter provides the theoretical framework, a context and justification for the research. It further shows where the research fits into the existing body of knowledge. The purpose of this literature review is to review existing literature on the subject matter; namely, literature dealing with concepts, theories and empirical studies.

Regarding the conceptual review, the appropriate section defines the term port automation and organizational change management; discuss the effects of the paperless port management system on the activities of the freight forwarders and the challenges of the implementation of the paperless system at the ports. The empirical review will review empirical studies on the subject matter in order to arrive at the research gap.

Finally, the chapter focuses on the theoretical framework upon which the study is to be undertaken. It deals with the review of literature related to the thesis as observed by some authorities, writers and other researchers. It covers the theoretical foundation of the study, change management at the port of Tema: A case study of freight forwarders attitudes to new policies.

2.2 The Concept of Port Automation

The emerging requirements for freight transportation led the logistic sector to focus on the implementation of integrated information systems to improve the provision of services all over the world (Caris, Macharis and Janssens, 2008). It is, therefore, imperative for new maritime security solutions to be developed and integrated into the operations of customs in Ghana. It is widely acknowledged that the application of Information Communication Technology (ICT) in logistics

has been promoted as a means to enhance logistics competitiveness (Feng and Yuan, 2006). On his part, Giannopoulos (2004) posited that ICT is considered a primary "enabling tool" for safe and efficient freight transportation systems.

Recently, practitioners and researchers are attracted by the key problem of using effectively and efficiently the latest developments of ICT tools for freight transportation management. In particular, the modern ICT tools help to produce, manipulate, store, communicate, and disseminate information. Moreover, ICT makes it possible to know the state of the system in real time and therefore to manage and change on-line paths, vehicle flows, orders and deliveries. In order to operate such choices, there is a need for a suitable decision module based on detailed models that can track the state of change of the various system components and determine performance indices typical of the tactical and real time management, such as utilization, traffic indices and delivery delays (Ramstedt & Woxenius, 2006).

In recognition of the pivotal role that Information Communication Technology plays in modern customs administration, De Wulf and Sokol (2004) have argued that there is the need for a contribution in proposing an innovative Information Communication Technology based solution that takes into account the high priority on the selection and implementation of appropriate and effective technological solutions for customs and security operations. Nonetheless, to them, the fundamental and distinctive assumption is that the introduction of new technology without a paradigm change does not completely solve the system anomalies and bottlenecks of the current situation.

A shift to port networks can be seen in the work of Notteboom and Winkelman (2004). Notteboom and Winkelman's concept of port networks is built around how ports may counter the

"pawn role" through building networks that minimise total costs along the total transport chain. De Wulf, in his United States Agency for International Development (USAID) Fiscal Reform Project report in 2006, gave a detailed account of the use of Information Communication Technology in customs administration. De Wulf posited that reliance on Information Communication Technology is not a choice but a necessity in the field of tax administration. He argued that there is the need for port authorities to be more effective in order to rake in more revenue.

2.3 Concept of Organizational Change Management

Cummings and Worley (2015) presented a model to obtain effective change management including 5 activity steps: 1) motivating change, 2) creating a vision, 3) developing political support, 4) managing the transition, and 5) sustaining momentum. The first activity step, motivating change, includes creating readiness for change and helping the change recipients address resistance to change. The second step, creating a vision, is a leadership task where the leaders are to create the 'why' and 'what' of the upcoming change.

In the third step, developing political support, the leaders need to gain employees' support to implement the change and avoid individuals and groups blocking it. As a fourth step, the management needs to create an activity plan for the change activities. In addition, it is the management's task to plan how to keep the employees committed and to build a management structure to guide the organization through the planned change. The fifth activity, sustaining momentum, includes providing resources for change, building a support system for change agents, developing new competencies and skills, reinforcing new behaviours, and staying the course to complete the change process.

Armenakis and Harris (2009) presented a model for managing organizational readiness for change. This model consists of five key components and seven strategies designed to create readiness for change. The five components are: 1) discrepancy, 2) efficacy, 3) appropriateness, 4) principal support, and 5) personal valence. The first component, discrepancy, involves a perception of discrepancy between the current situation and a desired future situation amongst the employees. Efficacy refers to the trust in one's capabilities to accomplish the change process. The third component is appropriateness which relates to the perception that the planned change is the best solution for obtaining a future desired situation. The fourth key component, principal support, refers to the support provided by the employees during the change process. The fifth is personal valence.

In this component Armenakis and Harris (2009) stated that the question 'What's in it for me?' must have, at least in part, a positive answer for the change recipients to be willing to commit to the change process. In addition, there are seven strategies for transmitting and reinforcing the above five core message components in a process of creating readiness for change. These strategies are management of information, persuasive communication, formalisation activities, diffusion practices, human resource practices, rites and ceremonies, and active participation (Armenakis & Harris, 2009).

Oreg (2006) stated that resistance to change consists of two main factors: personality and context. Personality relates to the person's dispositional resistance to change and people's internal inclinations that affect whether one adopts or resists the change. Oreg (2003) found dispositional resistance to change was a stable personality trait. The second factor, context, consisted of six

variables: 1) power and prestige, 2) job security, 3) intrinsic rewards, 4) trust in management, 5) information, and 6) social influence.

These contextual variables were related to employees' resistance to change and concerned both the outcome of the change and the way the change was implemented. The first three, power and prestige, job security, and intrinsic reward were related to the individual outcome of the change and were predicted to affect how the person relates to the change. The last three, trust in management, information, and social influence concerned how the change is implemented and will influence how employees perceive the change process.

2.4 Empirical Review on Port Automation System and their Performance

It is widely accepted among many researchers in the organisational field that information technology has a significant impact on the performance of organisation (Dian-sheng, Pei-gen, & Wei, 2017; Chen, Wei, & Peng, 2018; Shahrokni, Årman, Lazarevic, Nilsson, & Brandt, 2015; Asbjørnslett, Lindstad, & Pedersen, 2012; Heilig & Voß, 2017; Wasesa, Stam, & van Heck, 2017; Chen, Chou, & Hsieh, 2018). For example, information technology applications can be used to improve the level of efficiency of administrative functions in an organisation and to enhance the effectiveness of managerial activities.

Seaport operations are affected by international competition and constant demands by clients for the improvements of services offered (Chang, 2013). As a result, researchers have focused on port performance and the introduction of technology in the operations of seaports (Heilig, Schwarze, & Voß, 2017).

For instance, Chao and Lin (2017) studied gate automation system evaluation of container number recognition system in port terminals. Using exploratory factor analysis, the result

demonstrates that radio-frequency identification (RFID) system is a suitable system for the terminals which wish to automate their gates. In the same vein, Ferretti and Schiavone (2016) illustrated how information technology infrastructures can impact on seaports operations of Hamburg Marco port in Germany. The authors found that the use of technology widely improves the performance seaport.

Also, Wasesa, Stam, and van Heck (2017) investigated seaport service rate prediction system that can help drayage operators to improve their predictions of the duration of the pick-up/delivery operations at a seaport by using the subordinate trucks' trajectory data. By comparing two approaches to predicting the system rate, thus, linear model bench- mark and gradient boosting model-based solutions, Wasesa et al. (2017) found that the latter provides better predictions.

Other studies have also examined the port performances of different ports. These studies have used models such as Data Envelopment Analysis (DEA) to estimate efficiency in ports operations. For example, Gamassa and Chen (2017) compared port efficiencies between Eastern and Western African ports using DEA Window Analysis. The findings from their study demonstrate that though West African ports have bigger ports size and have a higher container throughput twenty-foot equivalent unit (TEUs) compared to East African ports, these ports are in general less efficient than East African ports. The authors further stated that the port of Tema in Ghana has been found to be the most efficient port in the two regions while Dar es Salaam port has been found to be the least efficient port over a period covering seven years.

Similarly, Lee, Lam, Lin, Hu, and Cheong (2018) used the fifth-generation (5GP) port concept model to measure the performance of Busan, Hong Kong, Singapore and Shanghai ports. Lee et al. (2018) found that the performance of the ports of Hong Kong and Singapore is close to

meet the definition of 5GP criteria. On the contrary, ports of Busan and Shanghai are still behind the 5GP stage in light of the majority of the evaluation criteria's performance.

Further, van Dyck (2015) assessed efficiencies of major ports (Six ports) in West Africa. The author noted that the Port of Tema in Ghana was the most efficient West African port among the six selected ports in West Africa. The findings further demonstrate that although Tema exhibited some inefficiency in its operations, the port was found to make good use of its resources for production. On the other extreme, the Port of Cotonou in Benin was found to be the least efficient port obtaining the lowest average efficiency rating over a seven-year period. It was determined that the port exhibited a substantial waste in production. van Dyck (2015) concluded that ports in West Africa could be said to exhibit high levels of efficiency considering that four out of six ports had an average efficiency score of 76% or higher for the period under study.

In addition, Feng, Mangan, and Lalwani (2012) studied the performance of Western European and Eastern Asian ports. Feng et al. (2012) highlights that port performances in the case port regions are different from each other in some factors and that they share some common features in certain other factors. The findings further reveal that the most critical differences between the case ports are government support, proximity, speed of cargo handling, safety and port technical infrastructure in descending order. The authors concluded that the Western European ports need to improve on government support, reduce port charges, diversify port ownership and improve port connectivity through the use of information technology, while the Eastern Asian ports need to improve customs services, expand hinterlands, enhance logistics demand, encourage intermodalism.

Schøyen, Bjorbæk, Steger-Jensen, Bouhmala, Burki, Jensen, and Berg (2018) also used DEA to focus on sensitivities to the inclusion of country-specific measurements on logistics service delivery performance outcomes on port efficiency. Similarly, Wang and Han (2018) measured the efficiency of international ports analysing six inputs (application service process, service personnel ability, service personnel attitude, advisory services, harbour rates and stevedoring rates) of twelve international container ports in Taiwan, and seven outputs (tug boat operation, rope untwisting operation, pilot operation, stevedoring efficiency, low damage rate for goods, awaiting unloading and working, and service flexibility).

Chen, Chou, and Hsieh (2018) studied output and disaggregate input efficiencies of international container ports during 2004- 2011 to identify avenues for strengthening port operations. Further, Wiegmans and Witte (2017) focused on determining and analysing terminal characteristics that influence efficiency of inland waterway container terminals. Again, from a multi stakeholder perspective, Ha, Yang, Notteboom, Ng, and Heo (2017) developed a new port performance measurement model by taking the perspectives from different port stakeholders. Ha et al.'s (2017) study provides a comprehensive analysis of port performance to help port managers make better decisions on port operations.

Rezaei, van Wulfften Palthe, Tavasszy, Wiegmans, and van der Laan (2019) rather focused on port performance measurement in the context of port choice using multi-criteria decision analysis. Rezaei et al. (2019) found that transport costs and times along the transport chain are the dominant factors for port competitiveness. The findings further revealed that satisfaction, reputation and flexibility criteria are the other important decision criteria.

Also, Chen, Zhang, Ma, Wang, Li, Wu, and Pan (2016) in their study, container port performance measurement and comparison leveraging ship GPS traces and maritime open data, proposed a framework that takes the ships' container-handling events at terminals as the basis for port performance measurement. Chen et al. (2016) highlighted the need to leverage the pervasive ship GPS traces and maritime open data to derive port performance indicators, including ship traffic, container through put, berth utilization, and terminal productivity, instead of relying on the manually collected statistical information from different port authorities and shipping companies.

It is obvious from the above discussions that, while there have been several attempts by researchers to study seaport operations, its performance and introduction of technology, much attention have been to the firm level performance and how technology impact on the efficiency of the port and not on the employee as an individual worker of the port. As result, little is known about the impact a technology has on employee performance of seaports. To sum up, as port management becomes market-oriented and actor-centred, studies on seaports port should focus on the individual level, thus, the employee, rather than the port level. Hence, this study seeks to assess change management at the port of Tema, a case study of freight forwarders attitudes to new policies.

2.5 The Paperless System and Port Management

Most modern ports provide safe and efficient services to the exporters and importers in a cost -effective manner. They also have achieved a high degree of mechanisation and automation for their operations, thus making it less labour intensive and using paperless and digital systems in this age of globalisation, ICT and innovation. Such ports guarantee the safety of people, vessels, merchandise and the environment (Wang, & Han, 2018).

Furthermore, they are supported by vanguard systems and technology and together with the most demanding international codes as well as having sophisticated system of non-intrusive inspection of different cargo. For these and many other reasons, the introduction and implementation of the paperless port is timely and an ideal phenomenon for the Ghanaian investors and international partners (Wasesa, Stam, & van Heck, 2017).

Cargo handling on board ships is an activity performed by stevedoring companies. Vessels make money while sailing and spend money while in port (Kim & Chiang, 2017). The longer a vessel stays in port the more money it spends and the shorter it stays the less money it spends. As a result, ship owners and charterers do not tolerate any delays in port especially in the discharge of cargo. This challenge of delays led to private-sector participation and the introduction of various seaport technologies in cargo handling and clearance (GPHA, 2012).

This is not the case for only Ghana but for developed economies like the UK as well. For instance, the UK P & I Club (2015) reported that the total number of bills of lading fraud cases has tripled, ports have resorted to the use of software to help in the fast processing and checking of documents for authenticity at the same time in the delivery of cargo (Asuliwonno, 2011). With respect to Ghana, the Tema Port, the Ghana Community Network Service (GCNet) is used by the Customs and Excise Preventive Service (CEPS) to help in the fast and secured documentation process (Asuliwonno, 2011).

An electronic way billing system was integrated into the GCNet system to help in the authentication of documents at the Golden Jubilee Terminal to ensure that delivery orders reaching GPHA are authentic for the cargo to be delivered to the rightful owners instead of fraudsters (GPHA, 2012). The use of technology has helped in speeding up the delivery process in the port

and also providing check systems in the documentation process, this has helped in easing congestion in the port, which was endemic in the year 2009 in the Port of Tema. This has provided room for more cargo to be received in the Port of Tema (GPHA, 2012).

The economic importance of institutions in economic development, including the ports, was well argued out by North (1990). These according to North (1990), are rules, procedures and patterns of behaviour, which constitute the rules of the game in a society; shaping political, social or economic interaction. Through the enforcement of reliability to paths of change, compliance procedures, the formal rules and standard operating practices that order the interactions between actors in various units of the organisation and the economy affected the way societies evolved overtime and hence served as the key to understanding change (Hall, 1986).

However, in examining the influence of institutions in different economies, De Soto (2000) contended that efficient institutions could add value to assets and promote wealth creation through allowing economic players to invest and specialize. Conversely, inefficient institutions can increase transaction costs such as excessive bureaucracy, corruption, time wastage, insecurity among economic agents, etc.; thus, reducing the incentives of economic players to invest and trade. Notably, where aspects of the institutional framework were weak they became vulnerable to manipulation by dominant groups (Coase, 1992).

In another instance, Jessop and Oosterlynk (2008) pointed out that when economic forces sought to redefine specific subsections of economic activities, they tended to manipulate power to secure results that were advantageous to them. Hence, as suggested by Martinsons (2002), any government's failure in providing an appropriate institutional environment might drive economic players to rely on informal relationships which are often less efficient in practice.

In the same vein Ng, Padilha and Pallis (2013) believe that institutions in place help to promote efficiency among transacting partners, minimize distributional conflicts, and monitor compliance. Any new conditions that were thought to cause structural contradictions are addressed within the established framework. In recent decades, significant changes in global trade and logistics forced institutional changes within ports, as operations failed to deliver the levels of flexibility, efficiency and investment required by their users (Ng, 2009).

This new environment has led to increasing standardization in logistics infrastructure and sectoral arrangements, as seaport systems were restructured to adopt the new forms of ownership and management in line with generic solutions, like the World Bank Port Reform Toolkit (World Bank, 2007). Again, quite recently, we have seen a handful of researches dedicated to studying the impact of institutions on trade. It is worth noting that weak institutions act as a significant barrier to international trade says (Ng et al., 2013).

To corroborate the validity of these findings, Gatti (2004) as cited in Asuliwonno (2010) added that weak institutions are evident in widespread corruption at various points in the supply chain. The need for the modernization of port and custom operations in the 21st century cannot be a misplaced ambition but a laudable one. Port automation should be the key in port modernisation efforts. Countries like Singapore, Dubai, Pakistan, Hong Kong and Germany whose ports have been fully automated as a result of robust legal environments are reaping the full benefits associated with port automation.

2.6 The Effects of the Paperless Port Management System on the Activities of Freight Forwarders

According to United Nations Conference on Trade and Development (UNCTAD), an efficient seaport requires, besides infrastructure, superstructure and equipment, adequate connections to other transport modes, a motivated management and sufficiently qualified employees.

In another vein, looking at the determinants of port efficiency, Clark, Dollar and Micco (2004), argue that the level of infrastructure and organized crime exert a significant positive and negative influence respectively on port efficiency. He added that policy variables reflecting regulations at seaports impacts on port efficiency in a non-linear way. This indicates that having some level of regulation increases port efficiency, but superfluous regulations could reverse these gains.

According to the African Development Bank (2010), several indices are used to measure the various factors contributing to port performance, some based on subjective indicators (ordinal rankings on a scale), others based on cardinal indicators (e.g. dwell times). Several factors are taken into account when producing these efficiency indices: physical infrastructure, management and services, governance, regulations, customs and institutional framework. Others have analysed how largely administrative process reengineering enables ports to lower costs and increase customer service (Paik and Bagchi, 2000).

Gordan, Hoffmann and Sanchez (2006) contend that, Singapore and Hong Kong have the best practices, for that matter, and the most efficient ports in the world, while Clark, Dollar and Micco (2004) added that inefficient ports are located in Africa like Ethiopia, Nigeria and Malawi, or in South America like Colombia, Venezuela and Ecuador. African ports have a medium

efficiency but they have the worst customs clearance, especially Sub-Saharan Africa (more than 11 days) (African Development Bank, 2010). Clark, Dollar and Micco (2004) elaborate further that port efficiency directly affects turnaround time for vessel in wharf and port efficiency varies widely from country to country and region to region.

Primary measures of port performance are the average turnaround time per ship, and the tonnage handled per ship per day in port. The ship turnaround is the rate at which cargo is handled and the duration that cargo stays in port prior to shipment or post discharge. It is calculated from the time a ship arrives to the time of its departure. Traditionally expressed in days, it is now common to express turnaround time in hours because of global enhancement of port operations.

The port authority (PA) would normally compile statistics giving monthly and annual average turnaround times. Thus, it becomes necessary for the port to further break down the basic ship turnaround time according to type of ship: tankers, bulk carriers, container vessels, and general cargo vessels. These may be sub divided into domestic trade, regional trade, and ocean-going vessels to increase efficiency Clark, Dollar and Micco (2004) concluded. Pálsson, Harding and Raballand (2007) argued that as global trading patterns are changing, new demands are simultaneously placed on ports for more and better infrastructure, increased dredging and dramatic improvement in efficiency. They noted that turnaround time in ports for freight forward business at the ports.

Going paperless at the ports of Ghana has really helped to improve revenue generation at the ports. For instance, one-month implementation of paperless system from 1st September, 2017 to 30th September 2017, it helped to increase ports revenue from GH 130M in the first week of September 2016 to GH 213 in the same period for 2017. Also one-month implementation of

UNIPASS/ICUMS at the ports of Ghana, that is from 1st June, 2020 to 30th June, 2020 has led to the realization of GH1.2 billion (Ashley, 2020).

Additionally, going paperless either under GCNet or ICUMS has also helped to eradicate most of the problems that were initially associated with doing businesses at the ports of Ghana before 2003, namely; corruption, leakages in government revenue, delay in clearing of goods, bureaucracy and cumbersome procedures which were initially characterized with so much paper submission. Evidence to this effect has been shown in the work of (Agyemang, 2016; Agbozo, 2017; Ashley, 2020).

2.7 Challenges of the Implementation of the Paperless System at the Ports

The unceasing process of change in international transport management in the last decade, from a fragmented modal approach towards a much more integrated transport concept tailored to meet the pressing needs of customer industries is a better phenomenon. This is resulting in an increasing pressure on ports to adapt their role and function to this more demanding operational environment (Juhel,1999), as a result of growing markets for external goods and services, African ports are faced up with huge challenges and risk in managing sea ports as well (Owusu, Archibald, & Abdul, 2017).

The most important of these challenges is the issue of congestion which is facing most developed economies in the ports and harbour nations, particularly the United States, India and much of Europe. This congestion normally undermines the fluidity of business transactions as well as the general operation of the ports and habours (Broni, 2014).

Similarly, developed economies undermine Africa's export competitiveness by increasing direct cost (e.g., port congestion penalties or surcharges) and indirect costs (e.g., inventory, idle

ships and trucks). For instance, in Ghana, the port of Tema until recently suffered from low berth productivity as a result of lack of gantry cranes. Increasing container volumes also forced carriers to wait several hours for berths and, in turn, imposed congestion surcharges on shippers. Similarly, in Durban, cargo handling demand had exceeded the terminal's handling capacity, causing berth congestion and forcing carriers to impose penalty surcharges (Amanfu, 2010).

Amanfu (2010) reflects that Africa, therefore, faces numerous challenges in its ports and harbours, which include increasing tariffs, introduction of new and sophisticated vessels and equipment, deficits of technical know-how, insufficient and inefficient manpower that man various operation terminals. Considering tremendous increase in cargo volumes that African port terminals receive monthly, it is evidently clear that such volumes do really impede the efficiency of ports in Africa, thereby grinding down their competiveness from the perspectives of output and return time of vessels and container utilization.

There is the need, therefore, within the framework of global trade integration and sustainability, for international ports; especially those on the African continent, to comply with required international security and maintenance protocols. Lack of available land for expansion is among one of the most acute problems; an issue exacerbated by the deep-water requirement for handling ships. Increased port traffic may lead to diseconomies as local road and rail systems are heavily burdened. Environmental constraints and local opposition to port development are also significant (Notteboom & Rodrigue, 2005).

In Ghana, the astronomical increase in international trade over the last decade has resulted in a number of challenges notable amongst them is the inadequate port facility and infrastructure to handle the teaming number of vessels that arrive at the two ports for offloading and loading

daily. Port technology and configuration have in recent times due to demand for multipurpose capacities in ports operations (Asuliwonno, 2011).

This has become necessary in ensuring efficient and effective operations at the ports. Slow adaptation to modern technology has made improvement in ports operations difficulty especially in the areas of port technology, port management, port labour and custom practices at the ports. This difficulty has hindered changes in the flexibility and diversity in port management, investment, ports designs and even in the use of ports resources (Agbozo, 2017).

Another important challenge worth mentioning is the cumbersome and bureaucratic clearing process which brings about vessel traffic and delay in cargo flow leading to congestion and corruption. The activities and functions of the several institutions and agents involved in ports operations in Ghana as a result of poor coordination have resulted in the overlapping and duplication of roles, functions and efforts. Offshoots of these challenges are the delays and long processes in handling and clearance of cargo at the ports (Agyemang, 2016).

Furthermore, the lack of adequate facilities and infrastructure at the ports have militated against ports operations with regard to inter-feeder transfer of cargo and services, cargo storage, cargo consolidation and cargo manipulation as well as cargo packaging and processing. Congestion at container terminals, vessels traffic and delays in cargo flow are borne by this challenge in the operations of the ports (Amanfu, 2010).

The GPHA (2006) admits that these challenges and problems hinder the smooth operations of the ports and that is why the paperless system will be a big boost and great innovation to the business at the port.

2.8 Theoretical Framework on Change Management

A number of theories have been postulated to explain change management. The theoretical framework of this study will be based on the theory of safety – High reliability organizations (HRO).

Theory of safety – High reliability organizations (HRO) Weick and Sutcliffe's (2007) theory of high reliability organizations (HRO) is based on organizations that are more capable than others for maintaining function and structure when facing changes and challenges. These organizations are typically ones that perform well in settings where the potential for error and subsequent disaster is large, like nuclear aircraft carriers, air traffic control systems, nuclear power generation plants, and so forth. As a safety aspect, the perception and cognition of the personnel are seen as key factors to obtain high reliability.

According to Weick and Sutcliffe (2007), the five collective cognitive techniques comprising the key elements included: 1) tracking small failures, 2) resisting oversimplifications, 3) remaining sensitive to operations, 4) maintaining capabilities for resilience, and 5) taking advantage of shifting locations of expertise. Using these five processes is called having a mindful infrastructure in the organization. By tracking small failures, personnel in HRO's treat any small error or unwanted incident as a symptom that something is incorrect with the system. The personnel then face it, analyse it, and respond to it.

This is because if separate small errors happen to coincide it can lead to major accidents, and acting on small errors helps prevent this from happening. One common way to do this is to report on unwanted incidents to get an overview of the situation in the organization and to be able

to track what happens. Further, they continue to articulate errors that are not wanted and assess strategies to avoid them (Weick & Sutcliffe, 2007; Hollnagel, 2006

Another principle important for achieving high reliability is to resist oversimplifications of interpretations. This includes creating images that better correspond to the complex context in which the personnel operate. The personnel tend to have more alternatives and spot unexpected events earlier because of their active work in creating a more nuanced picture. To achieve this, HRO's welcome diverse experience, scepticism, and negotiatingtactics that reconcile differences of opinion (Sætren & Laumann, 2015).

Recognising an event as something previously experienced is a source of concern rather than comfort. People interpret new data and assimilate it into already created schemas. However, to be able to spot signs that this episode might not be the same and finding errors corresponding with it, diversity and sceptical thinking are necessary (Hollnagel, 2006). For this reason, even in the middle of an operation there must be room to step back and assess the situation. The third principle is sensitivity to operations. This is linked to 'latent failures' (Reason, 1990) which means that imperfections in features, such as supervision, reporting, and safety training lead to loopholes in the defence barriers of the system.

However, it is important to notice that experience is not equivalent with expertise. It is not necessarily the person with the longest experience that has the best expertise. Because businesses today deal with greater complexity, HRO's use diversity in expertise and skills as a strategy. This is not just because it helps them to notice more in an increasingly complex environment, but also because it is beneficial for the greater complexity at hand (Weick & Sutcliffe, 2007).

Another aspect is to use the changing location of expertise to avoid deference (Sætren & Laumann, 2015). If one person's expertise leads to others un-nuanced trust, it could lead to hazardous accidents. For instance, if the personnel trust the leader's ability to spot everything, the leader's expertise could hinder someone else from being alert and noticing something the leader missed. If then in addition the personnel are not being used and their opinions not appreciated, they probably will not be trained to look for errors either, and will therefore probably not spot them (Weick & Sutcliffe, 2007).

In the light of the above, automated workflow sends the work to the employees and efficiency is achieved by assigning tasks according to, for example, workload. Electronic templates furthermore eliminate repetitive administrative tasks, improving productivity by allowing the employee to concentrate on the more intellectual tasks at hand. Increases in productivity and efficiency culminate in profitability and cost savings, while managing an increased workload. A central database or repository of documents and information on the network, such as provided by intranets or extranets ensures the sharing of information from distributed locations, which encourages collaborative business processes and functional integration (process chains).

Therefore, the theory of high reliability organizations (HRO) will help the organization under study to be more capable than others in maintaining function and structure when facing changes and challenges in handling change management at the port of Tema, the case study of freight forwarders attitudes to new policies.

The freight forwarders and all stakeholders in the port business are mandated to work towards the eradication of challenges that threaten trade facilitation initiatives in Ghana, particularly in Tema port, which is highest revenue collection point. The major opportunities

offered by the introduction of Integrated Customs Management System (ICUMS) and Paperless port system are the possibility of an available data and the flow of information, the opportunity for the users of the facility to undergo training to sharpen their IT skills, easy and smooth clearing at the ports, automation of the systems to minimise the human interface which leads to bribery and corruption, for the country to collaborate with neighbouring trade partners and to build a formidable communication network to propel the maritime industry to greater height.

2.9 Summary of Literature

This is the fourth industrial revolution which is fundamentally different from the previous industrial revolutions specially in the speed of change and disruptions and our continued success depends on our strategic response and our abilities to adapt to the velocity, breadth and depth and scale of the quantum changes coming our way. To this effect, it is imperative that Ghana have embedded digitization in our port business in Ghana and position the Tema port to have an efficient organizational operating system for their valued customers to have an excellent, stress-free and hassle-free port business transactions.

Also, from the literature reviewed above, there is a high causal link between port efficiency and trade facilitation through the paperless port system. The former is seen as the driving force and engine to remove all trade related barriers to propel the latter to gain grounds and to expedite trade at the port. Therefore, the government of Ghana and all stakeholders involved in the port business should collaborate to make the Integrated Customs Management Systems (ICUMS) and paperless system work.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter discusses the methodology used in conducting the research. It is sub-divided into research approach, research paradigm, research design, population, sample and sampling procedure, instrument, instrument testing, data collection procedure, area of the study and data analysis of the study.

3.2. Research Design

The methodological approach for this study is quantitative and the research design was a survey. According to Trochim, Donnelly and Arora (2015), the main uses of the quantitative approach are to determine the statistical relationship(s) between two or more variables; make predictions; generalise the findings of a sample to a whole population; and to determine cause and effect relationships.

This study adopted a quantitative research design since it is most suitable for explanation of a phenomenon by collecting numerical data that are analysed using mathematically based method, particularly statistics (Graziano & Raulin, 2012). It can also be used to grasp a deeper understanding of a research problem by combining different data collection and analysis methods (Passer, 2013). This study makes use of the survey technique in order to achieve the research objectives. A survey research approach comprises of a sectional design in relation to which data was collected by questionnaires.

Secondly, a descriptive study seeks to portray an accurate profile of persons, events or situations usually with the involvement of an evaluation and synthesis of ideas (Yin, 2014). The

descriptive design is, therefore, an empirical study that estimated the causal impact of an intervention on its target population and reveal the reasons for the freight forwarders resistance to the paperless system.

3.3 Population

A research population is a large collection of persons or objects with similar characteristics that is used by a researcher to make generalisations. The population for this study was only Freight Forwarders who are key stakeholders who use the Paperless system in their operations in the Tema port. It was estimated that the population of the freight forwarders at the Tema port stood at 3, 768. This population was gotten after a preliminary check at the Ghana Institute of Freight Forwarders (GIFF) Head Office at Tema (Tema District Office).

3.4 Sample and Sampling Technique

Sampling is the process of selecting a suitable split of the elements from the large population size so that the small subgroup (split) can be used to make the supposition to the whole large population (Cohen, Manion & Morrison, 2012). The sample frame is considered as the large group of elements or people, which shares the same characteristics to be included in the sample size (Cohen, Manion & Morrison, 2012). It is the actual population where the sample is extracted. The sample offers the researcher with an opportunity to select a valid sample size that matched the desired demands.

Specifically, simple random sampling technique was used to sample the freight forwarders. With this type of sampling, the researcher selects from a population with specific set of characteristics for the study (Cohen, Manion & Morrisson, 2012). Simple random sampling is

appropriate for this study because, the location of the companies, organisations, agencies and agents who in the freight forwarding business are easy to find. In addition, simple random sampling affords each person in the population an equal chance of getting selected to participate in the study. A research sample is a subset of a research population that is used to make generalisations about the population (Creswell, 2013). On the question of how much of a population is representative enough for a scientific study, Alreck and Settle (1985) in their book, *The Survey Research Handbook*, suggested that 10% sample size is representative enough of an entire population. But Fraenkel and Wallen (2002) differed in their view.

To them, however, the researcher should rely on a sample size that is not too large or too small to obtain the needed data at less cost and within an affordable time. Using a sample size calculator, with a confidence level of 95% and confidence interval of 7%, a total of 345 respondents comprising males and females freight forwarders were selected and sampled for this study from a population size of 3,768 who were the end users of the Integrated Customs Management System (ICUMS), the paperless clearing system to clear their consignments or export their goods. In the light of the above, according to Bartlett, Kotrlik, & Higgins, (2001), the sample size should be adequate enough for statistical analysis of the population of this study.

3.5 Sources of Information

The research work will make use of both primary and secondary sources of data as shown in the following structure:

3.5.1 Primary Data

Primary data was collected from the freight forwarders at the Tema port within the Greater Accra Region of Ghana. The main survey tool was questionnaires. A structured questionnaire was

designed for the study. The questionnaire was made up of both open and closed-ended questions assessing change management at the port of Tema, a case study of freight forwarders attitudes to new policies. The questionnaire was designed based on the objectives of the study. The advantage of using primary data is that they are more reliable since they come from the original sources and are collected especially for the purpose of the study (Saunders, Lewis & Thornhill, 2000). Also, it is good to listen to the people to get first-hand information from their perspectives and experiences using the primary experience.

3.5.2 Secondary Data

The study made extensive use of secondary data from various sources. The secondary data on annual revenue was collected from GRA (Custom Division), annual volumes of traffic collected from GPHA will be subjected to trend analysis using Microsoft Excel. Also, the main source of secondary data were journals, newsletters, policy manuals, brochures and other relevant official documents from the Ghana Institute of Freight Forwarders (GIFF). In addition, it also included both published and unpublished materials such as magazines, text-books, and relevant lecture notes. Information from the internet was used extensively. Secondary data collection was significant because it assisted in the development of the primary data collection and the interpretation of the results. The reason for the use of these secondary data was for the ease of reference.

3.6 Data Collection Instrument

Questionnaire was the main instrument to be used to gather data from the target population. This is because of the large sample size. Aside that, direct observation was made. The questionnaire was designed to capture respondents understanding of the paperless port system and

relevant questions based on the objectives of the study. The questionnaires contained open-ended questions which required the respondents to provide their own answers as well as close-ended questions which they are to select one of the given alternatives. Moreover, the questionnaires were administered on the targeted population personally by the researcher. The reasons for using the questionnaire method as an instrument of data collection was based on the fact that it provides a wider coverage of the sample and also it facilitates the collection of a large amount of data (Twycross, Malhotra, & Birks, 2006)

. Closed-ended questions were prioritised as they are easier and faster for respondents to answer; it is easier to cross-compare the answers of different respondent; and it is easier to interpret these types of questions (Graziano & Raulin, 2012). Moreover, questionnaire will be used in the study especially for the purposes of gathering more of quantitative information (Gaus, 2017).

3.7 Instruments Testing

To test the validity and reliability of the research instruments, the questionnaire was reviewed by the supervisor and the pre-test will be carried out at Ghana Shippers Authority, Head Office in Accra. According to Mugenda and Mugenda (2008) a pilot test is a technique used to test the design and/or methods and/or instrument before carrying out the research. A pilot study should be between 1% and 10% of the total sample. Sakaran (2003) also argues that the pilot study is required for analysing the reliability and validity of the data collection tool.

According to Orodho, Khatete and Mugiraneza (2016) piloting ensures clarity and efficiency of instruments before the real study is carried out. The researcher conducted a pilot study using 10 questionnaires. The researcher also consulted the supervisor prior to sending the

questionnaires to the random participants. The questionnaires were self-administered and the respondents were given ample time to fill in them.

Reliability is the uniformity, stability and repeatability of results (Saunders, Lewis & Thornhill, 2009). Results of the study are considered reliable if consistent results have been obtained identical situations but different circumstances (Twycross & Shields, 2004). Kothari (2012) noted that an instrument is reliable if it yields consistent results over a period. Also, the instrument testing will help the researcher to revise and improve the questions and guaranteed that the respondents did not face challenges while responding to the questions (Saunders, Lewis & Thornhill, 2009).

This enabled the researcher to identify the weaknesses, ambiguities and inequalities in the instruments to be administered in the main work. The respondents' comments and suggestions were used to correct the mistakes in the main study to be sure that it measured what it intended to measure in the final results.

3.8 Data Collection Procedure

The researcher visited the respondents by stating the purpose of the visit and permission to administer the questionnaires. This was done to ensure that the ethical acceptability of the research findings will not be breached. The respondents were assured of confidentiality of information provided and that the research was purely an academic exercise. The questionnaires administration mostly last for five to ten minutes on the average. The researcher began the administration of the questionnaires to the respondents on July12, 2021 and ended on August 13, 2021.

The researcher received permission from the Secretary General of Ghana Institute of Freight Forwarders (GIFF) Head Office at Tema (Tema District Office) and when the permission

was granted, the researcher administered the questionnaires to the respondents. Also, the researcher visited the respondents stating the purpose of visit and permission to administer the questionnaires. Furthermore, all the questionnaires were administered to the respondents at their offices and business places during working hours. According to Bennett, Glatter & Le Vacic, (1994), they point out that "spending an equal amount of questionnaire with each respondent ensures consistency which leads to trustworthiness of the study". Prior to the administration of the questionnaire, the researcher booked appointments with each respondents.

3.9 Data Analysis

Data analysis is the process of transforming raw data into useful output. The researcher adopted quantitative research design technique for the study (Creswell, 2013, Copper & Schindler, 2014). This made statistical analysis imperative in this study. This study utilised descriptive statistics, inferential statistics, tables and charts in order to achieve the desired outcome. Hence Statistical Package for Social Sciences (SPSS version 21) was adopted to analysis the field data. This was done with the aid of Microsoft excel. The field data was adequately validated to remove possible omissions, errors, inconsistencies, and non-response. Descriptive statistics were conducted using means, standard deviations, relative importance index and frequencies as well as inferential statistics analysis and regression analysis were used for the study. The results were presented using tables and charts. The findings were further discussed with previously done studies.

3.9 Ethical Considerations

A number of considerations were made with respect to acceptable and professional research practices. This was done primarily to avoid the reproach of the local and international research community. The first consideration that was made was to seek ethical clearance from the Ethics Committee of Ghana Institute of Journalism (GIJ). Also, the researcher sought informed consent from the respondents. What this means was that before consent was gained from the study's participants, they were first briefed about the purpose of the study, importance of the study, and any involved challenges or risks. After consenting, they are further informed that they have the right to withdraw their participation at any point in time without any backlash. Another consideration that was made was with respect to anonymity and confidentiality. In other words, the identities of the study's respondents were kept secret and were not published or disclosed to any third party. Furthermore, the responses provided were protected via a safety lock box and a password protected pen drive to avoid being infiltrated.

In addition, no pressure was put on respondents for them to provide certain responses that are deemed to be acceptable by the researcher. This included pressure in the form of coercion and monetary rewards. Lastly, the researcher avoided plagiarism or the copying of other's ideas and works through :(i) citing all the sources that were used; (ii) indicating these sources in a reference section; (iii) and paraphrasing.

3.10 Conclusion

This chapter discussed the methods, strategies and underlying principles that were used to collect data, analyse and interpret it. In doing so, the chapter covered the research design, research population, research sample, sampling technique, data collection instruments, instruments testing, data collection procedure, reliability and validity of data, data analysis techniques and ethical

considerations. In the final analysis, the methods that were found to be suitable was quantitative approach, descriptive research design, simple random sampling technique, questionnaire, semi-structured questionnaires, test-retest reliability, descriptive statistics and inferential statistics analysis.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

Data was analysed using descriptive statistics, correlation analysis and panel regression analysis were used for data analysis. The analysis focuses on the research questions that are central to the study.

4.2 Response rate

The response rate was a strong representation of the entire population to answer the research questions appropriately. The researcher issued a total of 345 questionnaires to the respondents but 300 questionnaires were filled and returned giving a response rate of 86.95% of the sample elements and 13.05% was not returned. The population for this study comprises males and females freight forwarders who are the end users of the Integrated Customs Management System (ICUMS), the paperless clearing system to clear their consignments or export their goods.

This showed a favourable response rate as compared to what was established by Sekaran (2003) in literature, that in any given survey exercise a response rate of 30% is considered most acceptable. This was considered to be sufficient for the study as indicated in Table 1. The information was collected using a five-point Likert scale questionnaire and the data analysed using means, standard deviation and coefficient of variation. On a scale of 1 to 5; 1 represented Strongly Disagree 2. Disagree 3. Not Sure 4. Agree 5. Strongly Agree.

Table 4.1: Response rate

Variable	Frequency	Percentage
Filled and returned	300	86.95

Non-response	45	13.05
Total	**345**	**100**

Source: Field data September, 2021

4.3 Demographic Factors

This section of the study is an analysis into the characteristics of the respondents. The demographic data of Freight Forwarders at Port Tema are summarised below:

4.3.1 Gender of respondents

One Hundred and Eighty (60%) respondents in this study were males whereas the rest 120 (40%) were females. Despite the fact that male respondents dominate the proportion of female respondents is significant enough to understand the perceptions of both sexes on the change management at the port of Tema, a case study of freight forwarders attitudes to new policies. See table 4.2.

4.3.2 Age of respondents

The results from table 4.2 also shows that 90 (30%) of the respondents were between the ages of 26 and 30 years. This is followed in magnitude by those who were between the ages of 36 and 40 years 60 (20%) 31 and 35 years 45 (15%), 18 and 25 years 45(15%), 41 and 45 years 30(10%), 46 and 50years 15(5%) the rest 15(5%) were above 50 years. This shows that a good proportion of every age group was considered for this research. See table 4.2.

4.3.3 Educational level

Majority 135(45%) of the respondents had SSCE or Lower. This was followed by 90(30%) of the respondents being HND/Diplomas holders, 45 (15%) of them had First Degree, 15(5%) had masters and the remaining 15(5%) had other qualifications. The results show the respondents were knowledgeable enough to comment on the change management at the Tema ports, a case study of

freight forwarders attitudes to new policies as most of them have been in this business for many years and they have rich experiences to share.

4.3.4 Business Ownership Structure

The study sought to find out the form of business operated by these freight forwarders with the Tema port in the Greater Accra Region and it was found out that 45(15%) business had been registered as a company. It was further found that 15(5%) of the businesses surveyed were partnerships while majority of the businesses were sole proprietorships topping the list at 240(80%) of the sample. This shows that majority of the businesses in the area of study were sole proprietorships and this could be accounted for reasons such as easy to form, risks involved in starting such businesses are few pride of ownership, small capital required and the owners enjoys so control of business profits.

4.3.5 Years of Service in Business

An analysis of the respondent number of years in business revealed that majority of the freight forwarders had been business for 6-10years which accounted for 120(40%) of the respondents, those with 11-15 years accounted for 60(20%), at the same time respondents with 16-20 years represented 60 (20%). It was also revealed that respondents with 1-5 years accounted for 30(10%) and the remaining 20years and above were 30(10%). This indicated that the respondents had been working in their respective businesses for a long time and have gained great experience in their line of work and operations within the import and export industry.

Table 4.2: Background information of respondents

Number	Variables	Characteristics	Frequency	Percent
1.	Gender			
		Male	180	60.0

		Female	120	40.0
		Total	**300**	**100.0**
2.	Age			
		18-25yrs	45	15.0
		26-30yrs	90	30.0
		31-35yrs	45	15.0
		36-40yrs	60	20.0
		41-45yrs	30	10.0
		46-50yrs	15	5.0
		50 and above	15	5.0
		Total	**300**	**100**
3.	Educational Level			
		SSCE or Lower	135	45.0
		HND/Diploma	90	30.0
		First Degree	45	15.0
		Postgraduate	15	5.0
		Others	15	5.0
		Total	**300**	**100**
5.	Business Ownership Structure			
		Sole Proprietorship	240	80.0
		Partnership	15	5.0

		Limited Liability Company	45	15.0
		Total	**300**	**100**
6.	Years of Service in Business			
		1-5years	30	10
		6-10years	120	40
		11-15years	60	20
		16-20years	60	20
		20years and above	30	10
		Total	**300**	**100**

Source: Field data September, 2021

4.4 Objective 1: New Roles of the Freight Forwarders with the Introduction of the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms at Tema Port

The efficiency and effectiveness of customs operations have a significant influence on the economic competitiveness of nations and in the growth of international trade. CEPS plays a pivotal role in ensuring effective controls that secure revenue and ensures security as well as compliance with national laws and the protection of society. The following subsections consider the new roles of the freight forwarders with the introduction of the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms at Tema Port.The information on the number of days used in freight clearance at the Tema port before and after the introduction of the Paperless Port system is presented for the various respondents. The respondents were only made up of freight forwarders used for the study.

4.4.1 Presentation of Information on Freight Clearance Times Before and After the Introduction of Paperless Port System.

Table 4.3: Freight Clearance Times Before and After the Introduction of ICUMS Paperless Port System

Number of Documents	**Before Paperless System**			**After Paperless System**		
Clearance Time	Frequency	Percentage (%)	Cumulative Percentage	Frequency	Percentage (%)	Cumulative percentage
Within 24 hours	0 0	0 0	0 1	30 10.0	10.0 10.0	10.0
1-3 days	0 0	0 0	0 7	270.0	80.0	80.0
4-6 days	240 80.0	80.0 80.0	80.0	60.0	20.0	100.0
7-9 days	60	20.0	100.0	0	0	100.0
Total	**300**	**100.00**		**300**	**100**	**100.00**

Source: Field Survey, September 2021

From Table 4.3, it is noticeable that before the introduction of the Integrated Customs Management System (ICUMS), Paperless Port System, Two Hundred and Forty respondents (80%) of the Freight Forwarders indicated that the freight clearance time was 4-6 days with the remaining Sixty respondents (20%) indicating 7-9 days. After the introduction of the Paperless Port System, Thirty (10%) of the Freight Forwarders indicated that freight clearance was done within 24 hours. Another Two-Hundred and Ten (70%) of the Freight Forwarders indicated that freight clearance was done within 1-3 days with the remaining Sixty respondents (20%) indicating 4-6 days for freight clearance.

With regard to freight clearance at the Tema port, the principal parties involved are CEPS, Destination Inspection Companies (DIC), clearing agents, shipping lines, freight forwaders and the port authority (GPHA, 2005). The simplification of procedures for freight documentation

through the Paperless Port System has as well made the clearance process simple for clearing agents by cutting bureaucracy and reducing the cumbersome and time-consuming procedures. This has significantly cut down the time importers and agents spend in the ports clearing their goods.

4.4.2 Presentation of Information on the Number of Documents Needed for Trade Transactions Before and After the Introduction of Paperless Port System

The researcher noted that prior to the introduction of Paperless Port System, most respondents particularly clearing agents, importers, exporters and freight forwarders needed to deal with Customs Excise and Preventive Service (CEPS) and other regulatory agencies including Environmental Protection Agency (EPA) and Narcotics Control Board for procurement of certain permits and licenses where applicable. This led to the submission of multiple documents often containing the same information to the various regulatory agencies. The information on the number of documents needed for trade transactions at the Tema port before and after the introduction of the Paperless Port system is presented for the various respondents. The respondents were made up of shipping agents, clearing agents, freight forwarders as well as the importers and exporters.

Table 4.4 Number of Documents for Trade Transactions Before and After the Introduction of Paperless Port system (Freight Forwarders)

Number of Documents	**Before Paperless System**			**After Paperless System**		
	Frequency	Percentage (%)	Cumulative percentage	Frequency	Percentage (%)	Cumulative percentage
1-3	30	10.0	10.0	90	30.0	30.0
4-6	150	50.0	60.0	180	60.0	90.0
7-9	90	30.0	90.0	30	10.0	100.0
10-12	30	10.0	100.0	0	0	0
Total	**100**	**100.0**		**300**	**100.0**	

Source: Field Survey, September 2021

From Table 4.4, it noticeable that before the introduction of the Paperless Port system, thirty (10%) freight forwarders required 1-3 documents for trade transactions. Hundred and fifty (50%) freight forwarders also indicated a requirement of 4-6 documents with ninety (30%) freight forwarders indicating the requirement of 7-9 documents. Thirty (10%) freight forwarders indicated the requirement of 10-12 documents for trade transactions.

After the introduction of the Paperless Port system, three (30%) freight forwarders required 1-3 documents for trade transactions. Six (60%) freight forwarders also indicated the requirement of 4-6 documents with only one (10%) freight forwarders indicating the requirement of 7-9 documents. None of the freight forwarders indicated the requirement of 10-12 documents for trade transactions after the introduction of the Paperless port system.

Data from the GPHA show that there are various types of cargo that pass through the Tema port (i.e. local imports, local exports, transit cargo and transhipment). Each type of cargo is covered by different types of shipping documents and undergoes different clearance processes. It is observed that compliance with customs procedures at the Tema port demands a great deal of coordination between the various business entities involved in freight movement.

In the light of the above, most of the respondents expressed that rarely does any individual business entity have full knowledge of all operational steps involved in freight movement. For example, exporters may know what goods have been consigned to their overseas customers and at what price. Freight forwarders will know on which ships containers have been booked and the shipping lines will know when and where the goods have been offloaded. At each stage of the movement, different types of information are generated and different types of documents (often containing the same or similar information) are submitted to CEPS and other government agencies for clearance.

4.4.3. Presentation of Information on the Number of Signatures Needed by Shipping for Trade Transactions Before and After the Introduction of Paperless Port System

Table 4.5: Number of Signatures for Trade Transactions Before and After the Introduction of Paperless Port System

Number of Documents	Before Paperless System			After Paperless System		
	Frequency	Percentage (%)	Cumulative percentage	Frequency	Percentage (%)	Cumulative percentage
1-3	30	10.0	10	120	40.0	40.0
4-6	150	50.0	60	180	60.0	100.0
7-9	120	40.0	100	0	0	0
Total	**10**	**100.0**			**10**	**100.0**

Source: Field Survey, September 2021

It is observed from Table 4.5 that before the introduction of the Paperless Port System, 30 (10%) of the freight forwarders required 1-3 signatures for trade transactions. 150 (50%) freight forwarders also indicated requirement of 4-6 signatures with another 120 (40%) freight forwarders indicating the requirement of 7-9 signatures. After the introduction of the Paperless Port System, 120(40%) of the freight forwarders required 1-3 signatures for trade transactions with the remaining 180 (60%) freight forwarders indicating the requirement of 4-6 signatures.

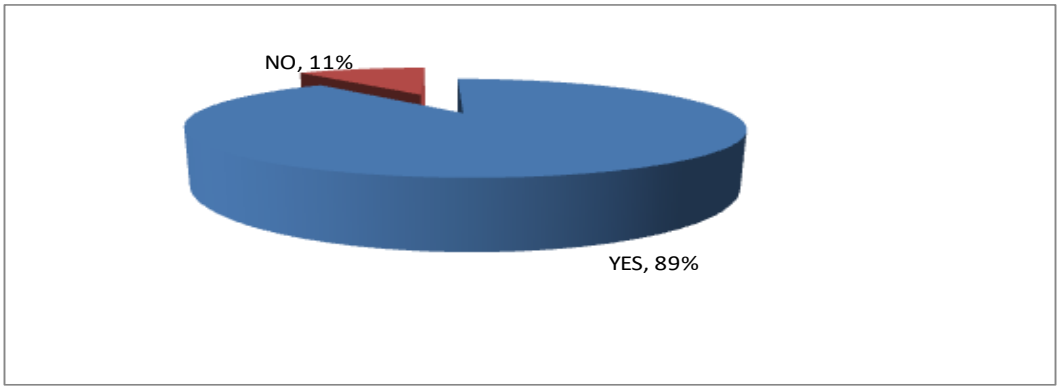
From the Table, it is evident that before the introduction of the Integrated Customs Management System (ICUMS) Paperless Port System, 50% of the shipping agents required approximately up to five documents for trade transactions at the Tema port. With the introduction of the Paperless Port System however, 50% of them required approximately fewer than four documents for trade transaction. These results suggest that shipping agents, importers, exporters,

and clearing agents after the introduction of Integrated Customs Management System (ICUMS), Paperless Port Clearing System now require fewer documents (average of four documents) for trade transactions as compared with the pre–Paperless Port System period of an average of approximately five documents.

4.4.4 Breakdown or System Downtimes

Data collected from the field on the scenario has there ever been a breakdown or system downtimes in the operation of the Integrated Customs Management System [ICUMS] Paperless port clearing system at the Tema port since it was introduced? An overwhelming majority of the total respondents representing 89% strongly agreed to the assertion. Also, 11% indicated that they have not taken critical notice of regular system downtimes as the authorities restore the system once it is challenged by disagreeing with the assertion. This implies that most of the respondents indeed use ICUMS system and services. Figure 1 shows the trend to the scenario.

Figure 1: Breakdown or System Downtimes



Source: Field Survey, September 2021

4.4.5 Frequency of System Breakdown

This section shows how often do the system breakdown when the respondents were quizzed on this matter. Below are their responses from the freight forwarders. The presentation of

information on the frequency of paperless port system breakdowns and system downtimes indicated by the freight forwarders is below:

Table 4.6: Frequency of System Breakdown

Response	Frequency	Percentage (%)
Everyday	6	2.0
Each week	30	10.0
Once a month	180	60.0
Once every quarter	60	20.0
Once every 6 months	15	5.0
Once yearly	3	1.0
Others (When the system is needed)	6	2.0
Total	**300**	**100.0**

Source: Field Survey, September 2021

With regard to the respondents, 180 (60%) of them making the majority indicated that the ICUMS Paperless Port Clearing System breaks down once in a month with another 60(20%) of the freight forwarders indicating once every quarter. Also, 15(5%) of the freight forwarders indicated that the system breaks down once every six months with 6(2%) indicating everyday and when the service is needed for their business transactions and only 3 (1%) indicated once yearly. The findings are presented above in Table 4.6.

Analysis of the results on the frequency of Paperless Port System breakdown as indicated by the various respondents shows that the system does not always breakdown simultaneously affecting all the users the system. During periods of the Paperless Port system downtimes and

breakdown, the respondents claimed that they had to wait for the system to be restored to continue working though this tends to cause delays in port operations and processes but the hitherto strenuous manual system has been eliminated. The breakdown in the Paperless Port system was confirmed by the Paperless Port System officer contacted who further added that the system is normally restored not long after a breakdown. From the analysis it can be inferred that the frequency of systems breakdown is about once a month

4.4.6 Mode of Port Revenue Collection and Custom Operations During System Downtimes

The study sought to establish the mode of port revenue collection and custom operations during the period of breakdown. The findings are presented below in Table 4.7.

Table 4. 7: Mode of Port Revenue Collection and Custom Operations During System Downtimes

	Mean	Std. Dev.	CV (%)
Manual	5.85	3.42	9.31
Wait for it to be repaired.	8.24	.592	18.72

Source: Field Data September, 2021

The study showed that majority of the respondents agreed on the mode of port revenue collection and custom operation during the period of breakdown; this is shown by a mean score of 8.24 and 5.85 respectively. The respondents further indicated that ICUMS System was initially complicated when the transactions are between many service providers and international trade organisations even though this has been eliminated with the introduction of the paperless port system platform. Also, the Ghana Ports and Harbour Authority (GPHA) and the Customs Exercise and Preventive Services (CEPS) have their IT Departments that restores the systems anytime the

system runs down and they have a robust IT infrastructure and teams that have been deployed to all their service stations.

Moreover, before the introduction of the Paperless Port System, CEPS revenue collection was compromised due to ineffective control of transit consignments, which led to their diversion onto the domestic market without payment of relevant duties and taxes. However, other factors such as increase in vessel traffic made possible by the expansion of facilities and acquisition of equipment as mentioned earlier, inevitably raked in additional revenue thereby resulting in increased revenue to the state.

As postulated in this study, the Paperless Port System enables the achievement of trade facilitation. Trade facilitation increases trade flows and in turn increases customs revenues. With regard to this study, data on customs revenue mobilized at the Tema port when was 5,546million Ghana Cedis after the introduction of the Paperless Port System at Tema port alone. This finding shows that there is a strong positive causal link between improvement in trade facilitation with trade flows and government revenue. The Paperless Port System is particularly important for its trade facilitation and control features that ensure that revenue collection is not compromised.

Table 4.8: Reliability statistics

Cronbach's Alpha	N of Items
.764	12

Source: Field data September, 2020

From table 5, it can be deduced that this study captured a total of 12 items under the impact of the integrated customs management system (ICUMS) on processing of document by the freight forwarders at the Tema Port. The average Cronbach's alpha reliability coefficient for the service quality instrument as presented on table 5 is 0.764. The alpha value of 0.764 is considered

reasonably high since it is above the reliability coefficient of 0.6 (Muijs, 2004). This also implies that all the twelve dimensions of the impact are eligible for inclusion in the analysis that follows.

4.5 Discussion of findings

This study explored the new roles of the freight forwarders with the introduction of the integrated customs management system (ICUMS) paperless clearing system reforms at Tema port. The study found out that the simplification of procedures for freight documentation through the Paperless Port System has as well made the clearance process simple for clearing agents by cutting bureaucracy and reducing the cumbersome and time consuming procedures. This has significantly cut down the time importers and agents spend in the ports clearing their goods.

In line with the above findings, De Soto (2000) contended that efficient institutions could add value to assets and promote wealth creation through allowing economic players to invest and specialize. Conversely, inefficient institutions can increase transaction costs such as excessive bureaucracy, corruption, time wastage, insecurity among economic agents, etc.; thus, reducing the incentives of economic players to invest and trade. Notably, where aspects of the institutional framework were weak, they became vulnerable to manipulation by dominant groups (Coase, 1992).

Moreover, there was the submission of multiple documents often containing the same information to the various regulatory agencies. The study also revealed that rarely does any individual business entity have full knowledge of all operational steps involved in freight movement. Furthermore, with the introduction of Integrated Customs Management System (ICUMS), Paperless Port Clearing System now require fewer documents for trade transactions. Again, Paperless Port system had system downtimes and breakdown which sometimes cause delays in port operations and processes but the hitherto strenuous manual system has been

eliminated. In addition, the study showed that before the introduction of the Paperless Port System, CEPS revenue collection was compromised due to ineffective control of transit consignments, which led to their diversion onto the domestic market without payment of relevant duties and taxes.

The above finding corroborates with the findings of Asuliwonno (2011) that the use of technology, innovation and software to help in the fast processing and checking of documents for authenticity at the same time in the delivery of cargo which has helped in the fast and secured documentation process (Asuliwonno, 2011). Moreover, an electronic way billing system was integrated into the GCNet system to help in the authentication of documents at the Golden Jubilee Terminal to ensure that delivery orders reaching GPHA are authentic for the cargo to be delivered to the rightful owners instead of fraudsters (GPHA, 2012). The use of technology has helped in speeding up the delivery process in the port and also providing check systems in the documentation process, this has helped in easing congestion in the port, which was endemic in the year 2009 in the Port of Tema. This has provided room for more cargo to be received in the Port of Tema (GPHA, 2012).

4.6 Objective 2: The Impact of the Integrated Customs Management System (ICUMS) on Processing of Document by The Freight Forwarders at the Tema Port

This section of the study focusses on the impact of the Integrated Customs Management System (ICUMS) on processing of document by the freight forwarders at the Tema Port. Section C of the questionnaire for freight forwarders was containing 12 items were used to obtain answers to the Research question 2. Thus, to examine the extent to which the paperless port clearing system reforms (Now ICUMS) has impacted on processing of document by the freight forwarders at the Tema port.

Table 4.9: Multivariate Regression of the impact of ICUMS on processing of document by the freight forwarders

ANOVA [a]

Model		Sum of Square	Df	Mean Square	F	Sig.
	Regression	85.562	120	10.695	2.608	.015b
	Residual	226.559	0	4.101		
	Total	352.122	120			

a. Dependent Variable: Response rate and profile of the respondents

b. Predictors (Constant): (The Impact of the Integrated Customs Management System (ICUMS) on Processing of Document by The Freight Forwarders at Tema Port).

Source: Field data September, 2020 Results on Table 8 present the diagnostic statistics of the multivariate regression. The table indicates that at 0.015 significant level there is a joint significance of the variables and that the model was good in explaining the dependent variable. According to studies non-significance would have meant that the model failed that would require a rerun or specification of the model. Again, the Analysis of Variance (ANOVA) table shows that all the independent variables under consideration are significant at ($p< 0.05$) 5% significant level, given an indication that the data collected were not manipulated but a true representation of what is actually the situation at Tema port.

4.7 Regression Statistic

To answer the second objective, regression analysis was performed using the impact of the Integrated Customs Management System (ICUMS) as a dependent variable and processing of document by the freight forwarders as independent variable. Regression analysis examines the relationship that exists between the independent variables and the dependant variable by controlling for each other in the model. Table 5 reveals a significant positive relationship between the Integrated Customs Management System (ICUMS) on processing of document by the freight forwarders at the Tema Port ($F=99.3$, $p<0.01$). The results also show that the effectiveness of the Integrated Customs Management System (ICUMS) performance explains about 44% of the variance in processing of documents by the freight forwarders at Tema Port.

Table 4.10: Regression results for the impact of ICUMS on processing of document by the freight forwarders

Variable	B	B	S.E	T	Prob.
Constant	0.80		0.29	2.76	0.01
Impact of ICUMS	0.74	0.66	0.07	9.97	0.00**
S.E of estimate	0.576				
R-Square	0.441			F-statistic	99.30
Adj. R-square	0.436			Prob.(F-stats.)	0.00**

Note: **significant at p<0.01

Source: Field data, September 2021

The regression equation on the above results is as follows:

Let Y= Processing of Documents by the Freight Forwarders

X= Impact of Integrated Customs Management System (ICUMS)

E= Error Term

Then:

Y= 0.80+0.74X+ E

4.8 Regression Analysis

To test the hypotheses of the study, data was analysed using multiple linear regression analysis. The purpose of regression analysis is to relate a dependent variable to a set of independent variables. In order to examine the impact of Integrated Customs Management System (ICUMS) (independent variable) on processing of document by the freight forwarders at the Tema Port (dependent variable), a multiple regression analysis was employed. The demographic characteristics of the respondents such as age, gender, marital status, educational qualification and length of service were controlled for.

Table 4.11: Impact of Integrated Customs Management System (ICUMS) and Processing of Documents

Dependent Variable: Processing of Documents				
	Coefficients	**Std. Err.**	**T**	**P**
Constant	-2.351	0.501	-4.69	0.000

Age	0.907	0.220	4.12	0.000
Gender	-0.244	0.146	-1.67	0.097
Education	0.015	0.111	0.13	0.895
Marital	1.021	0.228	4.48	0.000
Service	0.413	0.191	2.16	0.032
ICUMS	-0.004	0.001	-4.69	0.000

F(6, 165)	141
Prob > F	0.000
R-squared	0.8368
Adj. R-squared	0.8309
Root MSE	0.41126

Source: Field data, September 2021

Note: Gender and Marital status are dummy variables coded as 0 for Male/Married and 1 for Female/Single

It can be deduced from the responses that the freight forwarders appreciate the positive impact of the Integrated Customs Management System in their line of business. This demonstrates that the respondents felt very good about the paperless port system and the fact that it is ensuring trade facilitation, simplification of customs procedures, removing congestion at the port in freight documentation and clearance of consignments.

Moreover, to ascertain if there has been any impact over the years of the Paperless Port System on the processing of documents by the freight forwarders after the introduction of the

Integrated Customs Management System (ICUMS)**,** paperless port system in Ghana. The total revenue mobilized by CEPS at the Tema port comprises import duty and levies, import VAT, import NHIL and petroleum tax. The phenomenal percentage increase in revenue could therefore be partly, but not entirely, attributed to the effectiveness of the Paperless Port System in enhancing revenue collection.

Furthermore, with regard to trade facilitation, simplification of customs procedures in freight documentation and clearance are very relevant. This helps in reducing vessel turnaround and cargo dwell times to control costs and congestion. From this point, questions exploring the aver-age turnaround time of ships at the dock before and after the introduction of the Paperless Port System were posed to the shipping lines, clearing agents, freight forwarders and the port authorities. The information on the ship turnaround time at the Tema port before and after the introduction of the Integrated Customs Management System (ICUMS), Paperless Port System is presented for the various respondents. To corroborate the validity of these findings, Gatti (2004) as cited in Asuliwonno (2010) added that weak institutions are evident in widespread corruption at various points in the supply chain. The need for the modernisation of port and custom operations in the 21st century cannot be a misplaced ambition but a laudable one.

Most importantly, the study found and a positive and significant relationship between port automation and trade facilitation. These findings are consistent with the work done by (Dian-sheng, Pei-gen, & Wei, 2017; Chen, Wei, & Peng, 2018; Shahrokni, Årman, Lazarevic, Nilsson, & Brandt, 2015; Asbjørnslett, Lindstad, & Pedersen, 2012; Heilig & Voß, 2017; Wasesa, Stam, & van Heck, 2017; Chen, Chou, & Hsieh, 2018). In general, the authors argued that the overall information technology has a significant impact on the performance of organisations and that according to Heilig, Schwarze, & Vob (2017) port performance and the introduction of technology

in the operations of seaports enhances port efficiency and facilitates trade. For instance, Chao and Lin (2017) studied gate automation system evaluation of container number recognition system in port terminals. In the same vein, Ferretti and Schiavone (2016) illustrated how information technology infrastructures can impact on seaports operations of Hamburg Marco port in Germany. The authors found that the use of technology widely improves the performance seaport.

4.9 Objective 3: The Challenges Facing Freight Forwarders with the Implementation of the Paperless Port Clearing System (ICUMS) Reforms at the Tema Port

This section of the study focusses on the challenges facing freight forwarders with the implementation of the Paperless Port Clearing System (ICUMS) Reforms at the Tema Port. Section D of the questionnaire for freight forwarders was containing 12 items were used to obtain answers to the Research question 2. The results are presented in Tables 5. Table 5 depicts the responses of the respondents regarding the questions. The likert scale used is 'Strongly agree' [SA], Disagree' [D], Neutral [N], 'Agree' [A], 'strongly disagree' [DS]. It also shows the mean values and the standard deviation values for each statement.

Table 4.12: The Challenges Facing Freight Forwarders with the Implementation of the Paperless Port Clearing System (ICUMS) Reforms at the Tema Port

		N	Minimum	Maximum	Mean	Std. Deviation
1.	Non-availability of real time data	300	1.00	5.00	3.8976	1.14666

2.	Congestion and delays in clearing goods	300	1.00	5.00	3.3071	.91297
3.	Cumbersome and bureaucratic clearing processes	300	1.00	5.00	3.4252	1.10927
4.	Increased port congestion penalties and surcharges	300	1.00	5.00	4.0630	.83331
5.	There is still labour intensive involved in clearing goods	300	1.00	5.00	3.3701	1.24597
6.	There is still corruption, bribery and other malpractices	300	1.00	5.00	3.9449	1.10774
7.	There is still slow and tedious documentation in importing and exporting goods.	300	1.00	5.00	3.8268	1.09902
8.	The new ICUMS system is not permitting the electronic submission and integration of data/ information.	300	1.00	5.00	4.2126	.77285
9.	Human engagement and interferences has been rather increased.	300	1.00	5.00	3.4882	.77527

10.	There is still low compliance to the standards in port activities amongst trade operators and declarant.	300	1.00	5.00	3.3228	.88085
11.	High computer literacy is involved in using the new ICUMS system.	300	1.00	5.00	2.4173	.98755
12.	There is system failures and system down-times as well as lack of complementary electronic system.	300	1.00	5.00	2.4409	.92285
	Valid N (listwise)	300				

Scale: 1.0-1.49=strongly disagree, 1.5-2.44=disagree, 2.5-3.45=agree and 3.5-4.0=strongly agree. SD – Standard deviation

Source: Field data, September 2021

It is evident from table 4.12 that all but two of the statements notably ("High computer literacy is involved in using the new ICUMS system", and "There is system failures and system down-times as well as lack of complementary electronic system") under the challenges facing freight forwarders with the implementation of the Paperless Port Clearing System (ICUMS) Reforms at the Tema Port, have mean values which are all above the midpoint scale of 3 and inclines towards the agree scale of 4 on the rating scale.

The challenges associated with the use of the Paperless Port system as identified by the respondents were system breakdowns, system downtimes, slow or no internet connectivity, and problems with the operations of the Paperless Port System itself. Regarding system breakdowns, majority of the freight forwarders indicated that there have been notable system downtimes the Paperless Port System at least once in a month. However, the various respondents had different responses regarding the frequencies of the breakdowns ranging from once in a week to once in a year.

Also, the optimal usage of the Integrated Customs Management System (ICUMS), the paperless clearing system for the realisation of its full benefits has been limited, especially due to sometimes the slow nature of internet connectivity. There is therefore the need to increase band-width. This view was expressed by most of the freight forwarders and they strongly emphasized that the slow connectivity was a major challenge. It has been established that the Paperless Port system provides an ICT platform for the transmission of electronic messages and replies between trade operators, Customs, regulatory bodies involved in the clearance process for goods through the ports, and others who peruse the data generated. However, it is particularly noted that this ICT platform cannot be effective if there is weak internet connectivity.

With regard to the challenges related to the operation of the Paperless Port System itself, most respondents expressed that the system did not allow for corrections when errors are made to the declarations and manifest unless Paperless Port System is contacted. But in an interview with an officer of Paperless Port System, it was made clear that, that is in line with a frantic effort to prevent fraudulent declarations by the declarants. These challenges significantly militate against the smooth utilisation of the Paperless Port system in enhancing port and customs operations. All in all, the the Integrated Customs Management System (ICUMS), the paperless clearing system

has helped to remove redundant and time-consuming port and custom procedures thereby enhancing trade.

4.10 Discussion of findings

The above findings suggest that system breakdowns, system downtimes, slow or no internet connectivity leads to congestion which is facing most developed economies in the ports and harbour nations, particularly the United States, India and much of Europe. This congestion normally undermines the fluidity of business transactions as well as the general operation of the ports and habours (Broni, 2014).

Similarly, they undermine Africa's export competitiveness by increasing direct cost (e.g., port congestion penalties or surcharges) and indirect costs (e.g., inventory, idle ships and trucks). For instance, in Ghana, the port of Tema until recently suffered from low berth productivity as a result of lack of gantry cranes. Increasing container volumes also forced carriers to wait several hours for berths and, in turn, imposed congestion surcharges on shippers. Similarly, in Durban, cargo handling demand had exceeded the terminal's handling capacity, causing berth congestion and forcing carriers to impose penalty surcharges (Amanfu, 2010).

Amanfu (2010) reflects that Africa, therefore, faces numerous challenges in its ports and harbours, which include increasing tariffs, introduction of new and sophisticated vessels and equipment, deficits of technical know-how, insufficient and inefficient manpower that man various operation terminals. Considering tremendous increase in cargo volumes that African port terminals receive monthly, it is evidently clear that such volumes do really impede the efficiency of ports in Africa, thereby grinding down their competitiveness from the perspectives of output and return time of vessels and container utilisation.

The GPHA (2006) admits that these challenges and problems hinder the smooth operations of the ports and that is why the paperless system will be a big boost and great innovation to the business at the port.

4.11 Conclusion

This chapter presented the findings about assessing change management at the port of Tema, a case study of freight forwarders attitudes to new policies. It sought to answer the four key objectives of this study. The first objective sought to evaluate the new roles of the freight forwarders with the introduction of paperless clearing system reforms (ICUMS) in the operations of the Tema. The second objective was to examine the extent to which the paperless port clearing system reforms (Now ICUMS) has impacted on processing of document by the freight forwarders at the Tema port. The third objective was to find out the challenges freight forwarders go through with the implementation of the paperless port clearing system (ICUMS) reforms at the Tema port and the final objective was to recommend change management strategies and policies decisions that the port authorities can adopt to improve the paperless port clearing system (ICUMS) at the Tema port.

The overall results indicate a significant positive relationship between the total cargo flows and the total revenue generated. This finding showed that there is a strong positive causal link between improvement in trade facilitation with trade flows and government revenue. Also, the study found that the implementation of the paperless port clearing system (ICUMS) has brought improvement in ship turnaround and clearance times had no effect on controlling congestion at the port. In addition, the the paperless port system permitted an electronic submission and integration of information, safekeeping of records and removal of the numerous labour-intensive processes

has initiated a new aspect to customs operations at the Tema port doing away with the manual processing of documents and things are now automated, digitized and done electronically.

In the nutshell, some of the challenges identified with the use of the Paperless Port System included system breakdowns, system downtimes, internet connectivity, bandwidth size and operations of the system itself. Some of the recommendations given by the respondents included, coordination of activities of CEPS and the other Regulatory Agencies, there should be periodic capacity building for all stakeholders and extensive public education on the paperless port system.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter represents the summary of the study and findings gathered. It also presents conclusions drawn from the findings and recommendations made for policy and practice.

5.2 Summary of Findings

The researcher employed descriptive survey design for the study and quantitative research approach. The study made use of descriptive cross-sectional research method as research design and a survey research method was employed for the research. The research instrument that was used for the collection of data was questionnaires. The instruments used were designed on the Likert-Scale structure. The sample size used for the study was 300 respondents comprising senior and junior staff of the bank under study. Simple random sampling was used to choose the respondents. The instrument generated a standardized Cronbach's Alpha coefficient of .76 indicating a high statistical reliability of the instrument.

The questionnaires were administered personally and as anticipated, all the questionnaires were retrieved from respondents. The Statistical Package for the Social Science (SPSS) version 21 was employed to analyse the main data. The data was analysed using descriptive statistic, inferential statistics analysis and regression analysis to answer the research questions.

Data for this research were gathered from the Freight Forwarders at Tema port. Also discussed were the new roles of the freight forwarders with the introduction of paperless clearing system reforms (ICUMS) in the operations of the Tema, the impact of the paperless port clearing system reforms (ICUMS) on processing of document by the freight forwarders, the challenges

freight forwarders go through with the implementation of the paperless port clearing system (ICUMS) reforms and the change management strategies and policies decisions that the port authorities can adopt to improve the paperless port clearing system (ICUMS) at the Tema port. The following subsections consider the summary of the key research findings on the change management at the port of Tema, a case study of freight forwarders resistance to new policies.

5.3 New roles of the freight forwarders with the introduction of the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms at Tema port

The Paperless Port System provides an ICT platform that allows traders to submit trade related data required by CEPS and other regulatory agencies through a single electronic interface thereby fulfilling all the regulatory requirements in respect of each transaction. The Paperless Port System, permitting an electronic submission and integration of information, safekeeping of records and removal of the numerous labour-intensive processes has initiated a new aspect to customs operations at the Tema port. From the survey, it was found that the typical manual processes including valuation, duty payment, numbering and hologram sealing that traders went through to transact business at the Tema port before the implementation of the Paperless Port System have been simplified through the automation of the processes and now being done electronically.

The results of the analysis on the average freight clearance times indicated by the shipping agents, clearing agents and freight forwarders as well as the importers and exporters showed that the average freight clearance time at the Tema port after the introduction of the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms has improved from the pre - Paperless Port System period, when freight clearance took relatively longer period of an average

of six days. The average freight clearance times assumed that all documents were properly provided to CEPS and the other regulatory agencies involved in freight clearance.

The reason for the lengthy clearance times before the introduction of the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms was attributed to the manual procedures of freight documentation which gave rise to delays by the various agencies involved. The reduction in the average freight clearance times has therefore been possible because of the easy documentation and the possibilities for pre-arrival submission of declarations with the use of the Paperless Port System. The Paperless Port System has therefore greatly improved the operations of CEPS by ensuring faster clearance of goods of an average of three days which saves time and promotes better working environment.

The data on revenue collected over the period from 2018 to 2021 showed an increase in line with increases in total cargo over the same period. The significant growth in revenue over the years are attributed to customs and port reform efforts in regulating revenue as well as facilitating international trade to increase the volume of trade flows through the Tema port. The phenomenal percentage increase in revenue could therefore be partly but not entirely, attributed to the effectiveness of the Paperless Port System in enhancing revenue collection. For instance, before the introduction of the Paperless Port System, CEPS revenue collection was compromised due to ineffective control of transit consignments, which led to their diversion onto the domestic market without payment of relevant duties and taxes.

As postulated in this study, the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms enables the achievement of trade facilitation which increases trade flows and in turn raises customs revenues. A correlation analysis between customs revenue and total cargo traffic revealed a high positive correlation (r=0.93041) with a high coefficient of

determination (r2= 0.8657). The results indicated that there is a significant positive relationship between the total cargo flows and the total revenue generated. This finding showed that there is a strong positive causal link between improvement in trade facilitation with trade flows and government revenue. The Paperless Port System is particularly important for its trade facilitation and control features that ensure that revenue collection is not compromised.

The results of the analysis on the average ship turnaround times indicated by the shipping agents, clearing agents, freight forwarders and port authorities showed that the average ship turnaround times at the Tema port after the introduction of the Paperless Port System has improved from the pre–Paperless Port System period, when ship turnaround was relatively longer of an average of seven days. The results implied that average ship turnaround time at the port after the introduction of the Paperless Port System is an improvement from the pre–Paperless Port System period with some respondents even indicating that ships now turnaround within 24 hours.

Further analyses of the data showed that that improvement in ship turnaround and clearance times had no effect on controlling congestion at the port. This is because as many as 98.4% of the respondents indicated that the Tema port presently faces congestion problems. Congestion at the Tema port could be attributed to a large extent to the increased containerization with few handling equipment. Also, the congestion problem was attributed to certain customs procedures at the port which require that every single container be opened and unstuffed for inspection, especially when they are heterogeneous goods, after which it is stuffed again as the scanners mostly are unable to scan heterogeneous goods or do not function properly sometimes.

5.4 The impact of the Integrated Customs Management System (ICUMS) on processing of document by the freight forwarders at the Tema port

In the import and export clearance process at the Tema Port, the study found out that an average of six documents and signatures were needed by the respondents particularly the clearing agents, freight forwarders, shipping agents and the importers and exporters. This was because prior to the introduction of Paperless Port System, most of these respondents shuttled among different regulatory agencies including the Environmental Protection Agency (EPA) and Narcotics Control Board to procure certain permits, licenses, or exemptions as part of the clearance process. This involved cumbersome manual procedures which caused delays and required the submission of the same or similar documents to the agencies. Analysis of the data showed that after the introduction of the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms, the average number of documents and signatures needed by the various respondents had reduced to average of four.

The reductions in the number of documents and signatures were found to result from the replacement of the manual processes that involved 23 steps with the Integrated Customs Management System (ICUMS) Paperless Clearing System Reforms which allows for easy submission of manifests and thus permitting free flow of information to all the required agencies. The results of the analysis showed that the Paperless Port System has helped to simplify and expedite the procedures involved in freight documentation as a result of the reduction of the steps to four after the introduction of Paperless Port System.

From the discussions of the impact of ICUMS, Paperless Port System on customs operations, the research showed that the Paperless Port System has helped to remove redundant and time-consuming port and custom procedures thereby enhancing trade. The respondents

indicated several positive prospects the Paperless Port System can further offer to port operations in Tema. The clearing agents, freight forwarders, importers and exporters were of the opinion that the Paperless Port System can be enhanced to eliminate all human interventions in freight clearance. Similarly, the freight forwarders indicated that the Paperless Port System can make the port operations more efficient and enhance international trade.

The results of the extent of reliability of the Integrated Customs Management System (ICUMS) Paperless Clearing System among the various respondents show that majority of the respondents agreed that the Paperless Port System is reliable. This implied that majority of the respondents were experiencing the smooth running of the system with respect to their activities. This showed that Ghana's Paperless Port System is commendable as majority of the users affirm its reliability in ensuring trade facilitation.

Also, the regression analysis conducted revealed a significant positive relationship between the Integrated Customs Management System (ICUMS) Paperless Clearing System Reform on the processing of document by the freight forwarders at the Tema port ($F=99.3$, $p<0.01$). The results again showed that the effectiveness of ICUMS paperless port system explains about 44% of the variance. Therefore, the regression analysis performed indicated that there exists a statistically significant positive relationship between the impact of ICUMS on processing of document by the freight forwarders at the Tema port. So then, the freight forwarders are not against the Integrated Customs Management System (ICUMS) paperless clearing system reforms in any form or nature.

Furthermore, to examine the impact of ICUMS (independent variable) on processing of documents by the freight forwarders (dependent variable), a multiple regression analysis was employed. The demographic characteristics of the respondents such as age, gender, marital status, educational qualification and length of service were controlled for. The result of the findings

revealed that age, gender, marital status, length of service and the ICUMS paperless clearing system performance were established to be significantly associated to the effective processing of documents by the freight forwarders at the Tema port. Therefore, the regression analysis performed also showed that there exists a statistically significant positive relationship between the demographic characteristics on the freight forwarders performance at the Tema port.

5.5 Challenges Associated with the Use of Paperless Port System

Analysis of the data showed that the challenges associated with the use of the Paperless Port System include system breakdowns, system downtimes, internet connectivity, bandwidth size and operations of the system itself. Regarding system breakdowns, the shipping agents, clearing agents, freight forwarders, importers and exporters as well as the officials of CEPS, Banks, GPHA and GSA indicated that there have been notable breakdowns in the Paperless Port System. During periods of the Paperless Port System breakdown, the respondents claimed that they had to wait for the system to be restored to continue working and this tends to cause delays in port operations and processes.

Also, as the Paperless Port System provides an ICT platform for sharing information, it cannot be effective if there is weak or no internet connectivity. This view was expressed by most clearing agents, freight forwarders and the importers and exporters who indicated that slow connectivity was a major challenge. With regard to the operations of the Paperless Port System itself, most of the respondents particularly clearing agents and officials of CEPS and the banks indicated that the system did not allow for corrections when errors are made to the declarations and manifest unless Paperless Port System is contacted. These challenges significantly militate against the smooth utilization of the Paperless Port System in enhancing port and customs operations.

5.6 Recommendations

Based on the findings of this research, the following recommendations are made to further enhance Integrated Customs Management System (ICUMS) Paperless Clearing System in customs and port operations:

5.6.1 Coordination of Activities of CEPS and the other Regulatory Agencies

With regard to port operations, Customs officials do not operate in isolation at the various ports and borders within the country, but in collaboration with other operatives that include GPHA, the Police, and the National Security Unit and among others. Such stakeholders must be given the needed orientation by the Integrated Customs Management System (ICUMS) Paperless Clearing System Office of Ghana to gain an in-depth understanding of the Paperless Port System concept and how their activities can be coordinated through the Paperless Port system module. This can help prevent situations that cause needless delays at the port like the detention of released cargo for re-examination by any other agency.

5.6.2 Extensive Public Education on the Paperless Port System

There is a need for a comprehensive nationwide education strategy to create awareness on the use and benefits of the Paperless Port System in customs operations at the ports and borders. This can help stimulate effective utilisation and improvement of the Paperless Port System in ports and customs operations. This extensive public education can be done by the Ghana Community Network Services Limited, the Ghana Shippers Authority and CEPS in conjunction with the media. This campaign can ensure that importers, exporters and clearing agents are thoroughly educated on the procedures and fees so as to ensure that unscrupulous customs officers and other port officials do not play on their ignorance to extract unlawful payments from them.

5.6.3 Periodic Capacity Building for all Stakeholders

Capacity building, as the key to information and ability, should, as a matter of policy, be made available to all users of Paperless Port System within the mainstream services subject to the suitable training of instructors or change agents on new trends and features of the Paperless Port System to meet the specific needs of the various stakeholder groups. Constant review and upgrade of features and systems of the facility in line with modern but technologically advanced forms of trends in the maritime industry globally, will equally demand a corresponding higher and complicated skill to operate efficiently. During discussion with respondents' whiles collecting data, it came to light, as several of the respondents alluded that the setback in their quest to deliver was inadequate training. It is therefore important that Paperless Port System in collaboration with CEPS and GPHA should pull resources together for capacity building purposes. This will help in building a robust system that is client tailored which will culminate in effective and efficient utilization of the facility to enhance output.

5.7 Conclusion

This research was carried out primarily to assess the change management at the port of Tema, a case study of freight forwarders resistance to new policies. It has been established from the literature that single window as part of customs reforms is imperative to ensuring a country's trade competitiveness and facilitation. The research specifically focused on the role of Paperless Port System in customs procedures of freight documentation, clearance and revenue generation at the Tema port. Also, the challenges and prospects of the Paperless Port System were assessed.

From the study, the ICUMS Paperless Port Clearing System is aiding in trade facilitation by simplifying and expediting the processes of freight documentation and clearance. The research

has shown that after the introduction of the Paperless Port System in 2018, processes of freight documentation have been simplified and led to reductions in clearance and turnaround times.

As was postulated in this study, the Paperless Port System enabling the achievement of trade facilitation increases freight traffic and in turn raises customs revenues. The research has shown that customs revenue has increased in line with increases in freight traffic through the Tema port since its introduction. Although this phenomenon may not be attributed solely to the Paperless Port system but general operation management of the port could be factor as well as governmental interest in increasing revenues at the ports of Ghana.

The Paperless Port System expediting the processes of freight clearance has however not helped to ease congestion at the port. This is due to the non-compliance of some clearance procedures by some trade operators and thereby resulting in their inability to clear their goods leading to congestion at the port.

Benchmarking Ghana's performance in the maritime industry against best practicing countries such as the United Arab Emirates (Dubai), Germany, Canada, Singapore, Austria among others which has very efficient ports with Dubai, Germany and Singapore requiring a single document with a corresponding signature and Canada, Austria and Australia requiring two document with a corresponding signatures while clearing and turnaround occurs in minutes, it will be difficult to conclude that considering the reductions in the number of documents and signatures, clearing and turnaround times in Tema port since the inception of Paperless Port System, the Tema port has become efficient. However, benchmarking Ghana's performance against ports within the sub region such as Nigeria, Democratic Republic of Congo, Mali which requires 39, 42 and 33 signatures respectively with corresponding documents while clearing time averaging 7 days, it is easy to conclude that Paperless Port System has made the Tema port relatively efficient.

Despite the positive effects of the Paperless Port System on customs and port operations, a number of challenges remain and need to be addressed. The challenges associated with the use of the Paperless Port System relate to system breakdowns, slow or no internet connectivity and operations of the system itself. From the research, it has become apparent that the introduction of the Paperless Port System holds positive prospects in terms of improving customs procedures and enhancing port efficiency.

5.8 Suggestions for Further Research

This research was focused on the port of Tema and has not covered the other ports such as Takoradi seaport, the Kotoka airport and the borders. The impacts of the Paperless Port system on the operations of customs on all these areas are worth researching into. This will help gain a comprehensive understanding of the benefits of the Paperless Port system.

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APPENDIX A

GHANA INSTITUTE OF JOURNALISM (GIJ)
SCHOOL OF GRADUATE STUDIES AND RESEARCH

QUESTIONNAIRE TO BE FILLED BY FREIGHT FORWARDERS AND CUSTOMS HOUSE AGENTS WITHIN TEMA DISTRICT

Dear respondents,

Norvan Acquah-Hayford is a graduate student at Ghana Institute of Journalism. Currently conducting master's dissertation entitled: **"Change management at the Port of Tema, A case**

Study of freight forwarders attitudes to new policies". The purpose of research is in partial fulfilment of the requirements for the award of a Masters of Arts in Public Relations. This questionnaire is designed to collect relevant information relating to the topic.

All data collected will be used only for academic purposes and will be kept confidential.

SECTION A: DEMOGRAPHY OF RESPONDENTS

Please tick ☑ and state where applicable

1. Sex of respondent (a) Male [ ] (b) Female [ ]

2. Age of respondent

   a. 18-21 [ ] b. 22-25 [ ] c. 26-29 [ ] d. 30-39 [ ] e. 40-49 [ ] f. 50 and above [ ]

3. What is your academic qualification?

   a. No School [ ] b. Junior High School [ ] c. Senior High Secondary School [ ] d. Certificate/Professional Certificate [ ] e. Diploma/HND [ ] f. First Degree g. Masters [ ] h. PHD [ ]

4. Business Ownership

   a. Sole-Proprietorship [ ] b. Partnership [ ]c. Limited Liability Company [ ]

5. How long have you been working or been in this freight forwarding business?

   a. 1-5 years [ ] b. 6-10years [ ] c. 11-15years [ ] d. 16-20 [ ] e. 20 and above [ ]

6. Marital Status

   a. Married [ ] b. Single [ ] c. Divorced [ ]

SECTION B: NEW ROLES OF THE FREIGHT FORWARDERS WITH THE INTRODUCTION OF THE INTEGRATED CUSTOMS MANAGEMENT SYSTEM (ICUMS) PAPERLESS CLEARING SYSTEM REFORMS AT TEMA PORT

7. On the average how long does it take to clear a container or goods from the Tema port after the introduction of the Integrated Customs Management System [ICUMS] Paperless port clearing system?

a. hours [ ] b. 1-3 days [ ] c. 2-6 days [ ] d. 7-9 days [ ] e. 10-12 [ ]

8. On the average how many documents are required to transact business at the port after the introduction of the Integrated Customs Management System [ICUMS] Paperless port clearing system at the Tema port?

a. 1-3 [ ] b. 4-6 [ ] c. 7-9 [ ] d. 10-12 [ ] e. 13-15 [ ]

9. On the average how many signatures are required to transact business at the port after the introduction of the Integrated Customs Management System [ICUMS] Paperless port clearing system at the Tema port?

a. 1-3 [ ] b. 4-6 [ ] c. 7-9 [ ] d. 10-12 [ ] e. 13-15 [ ]

10. Has there ever been a breakdown or system downtimes in the operation of the Integrated Customs Management System [ICUMS] Paperless port clearing system at the Tema port since it was introduced?

a. Yes [ ] b. No [ ]

11. If yes, how often does it breakdown?

a. Everyday [ ] b. Each Week [ ]c. Once a month [ ] d. Once every quarter [ ]

e. Once every 6 month [ ] f. once yearly [ ] g.

Other, specify……..

12. What is the mode of port revenue collection and custom operation during the period of breakdown?

a. Manual [ ] b. Wait for it to be repaired [ ]

c. other, specify ……

…….

SECTION C: THE IMPACT OF THE INTEGRATED CUSTOMS MANAGEMENT SYSTEM (ICUMS) ON PROCESSING OF DOCUMENT BY THE FREIGHT FORWARDERS AT THE TEMA PORT

On a scale of 1 to 5, kindly indicate your level of agreement to the following statements: (1-strongly disagree, 2-disagree, 3-fairly agree, 4-agree and 5-strongly agree)

How has the paperless port clearing system reforms (ICUMS) impacted the processing of document by the freight forwarders at the Tema port?	**1**	**2**	**3**	**4**	**5**
C1. Reduced congestions at the port	☐	☐	☐	☐	☐

C2. Removed delays in clearing goods.	☐	☐	☐	☐	☐
C3. Eliminated cumbersome and bureaucratic clearing processes	☐	☐	☐	☐	☐
C4. Reduced port congestion penalties and surcharges	☐	☐	☐	☐	☐
C5. Removal of labour intensive involved in clearing goods	☐	☐	☐	☐	☐
C6. Simplified information flow and fewer complexities	☐	☐	☐	☐	☐
C7. Reduced corruption, bribery and other malpractices	☐	☐	☐	☐	☐
C8. Faster and lesser documentation in importing and exporting goods.	☐	☐	☐	☐	☐
C9. Permitting the electronic submission and integration of data/ information.	☐	☐	☐	☐	☐
C10. Human engagement and interferences has been eliminated	☐	☐	☐	☐	☐
C11.Ensuring high compliance amongst trade operators and declarant.	☐	☐	☐	☐	☐
C12. Ensuring port efficiency and the new port clearing system is highly reliable .	☐	☐	☐	☐	☐

SECTION D: THE CHALLENGES FACING FREIGHT FORWARDERS WITH THE IMPLEMENTATION OF THE PAPERLESS PORT CLEARING SYSTEM (ICUMS) REFORMS AT THE TEMA PORT

On a scale of 1 to 5, kindly indicate your level of agreement to the following statements: (1-strongly disagree, 2-disagree, 3-fairly agree, 4-agree and 5-strongly agree)

What are the challenges freight forwarders go through with the implementation of the paperless port clearing system (ICUMS) reforms at the Tema port?	**1**	**2**	**3**	**4**	**5**
D1. Non-availability of real time data	☐	☐	☐	☐	☐
D2. Congestion and delays in clearing goods	☐	☐	☐	☐	☐
D3. Cumbersome and bureaucratic clearing processes	☐	☐	☐	☐	☐
D4. Increased port congestion penalties and surcharges	☐	☐	☐	☐	☐
D5. There is still labour intensive involved in clearing goods	☐	☐	☐	☐	☐
D6. There is still corruption, bribery and other malpractices	☐	☐	☐	☐	☐
D7. There is still slow and tedious documentation in importing and exporting goods.	☐	☐	☐	☐	☐
D8. The new ICUMS system is not permitting the electronic submission and integration of data/ information.	☐	☐	☐	☐	☐
D9. Human engagement and interferences has been rather increased.	☐	☐	☐	☐	☐
D10. There is still low compliance to the standards in port activities amongst trade operators and declarant.	☐	☐	☐	☐	☐

D11. High computer literacy is involved in using the new ICUMS system.	☐	☐	☐	☐	☐
D12. There is system failures and system down-times as well as lack of complementary electronic system.	☐	☐	☐	☐	☐

SECTION D: RECOMMENDATIONS

1. What do you suggest should be done to improve the paperless port clearing system (ICUMS) at the Tema port?

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THANK YOU.