MAIDEN EDITION

giff INSIGHT

An Innovative Journal for Advancing International Trade

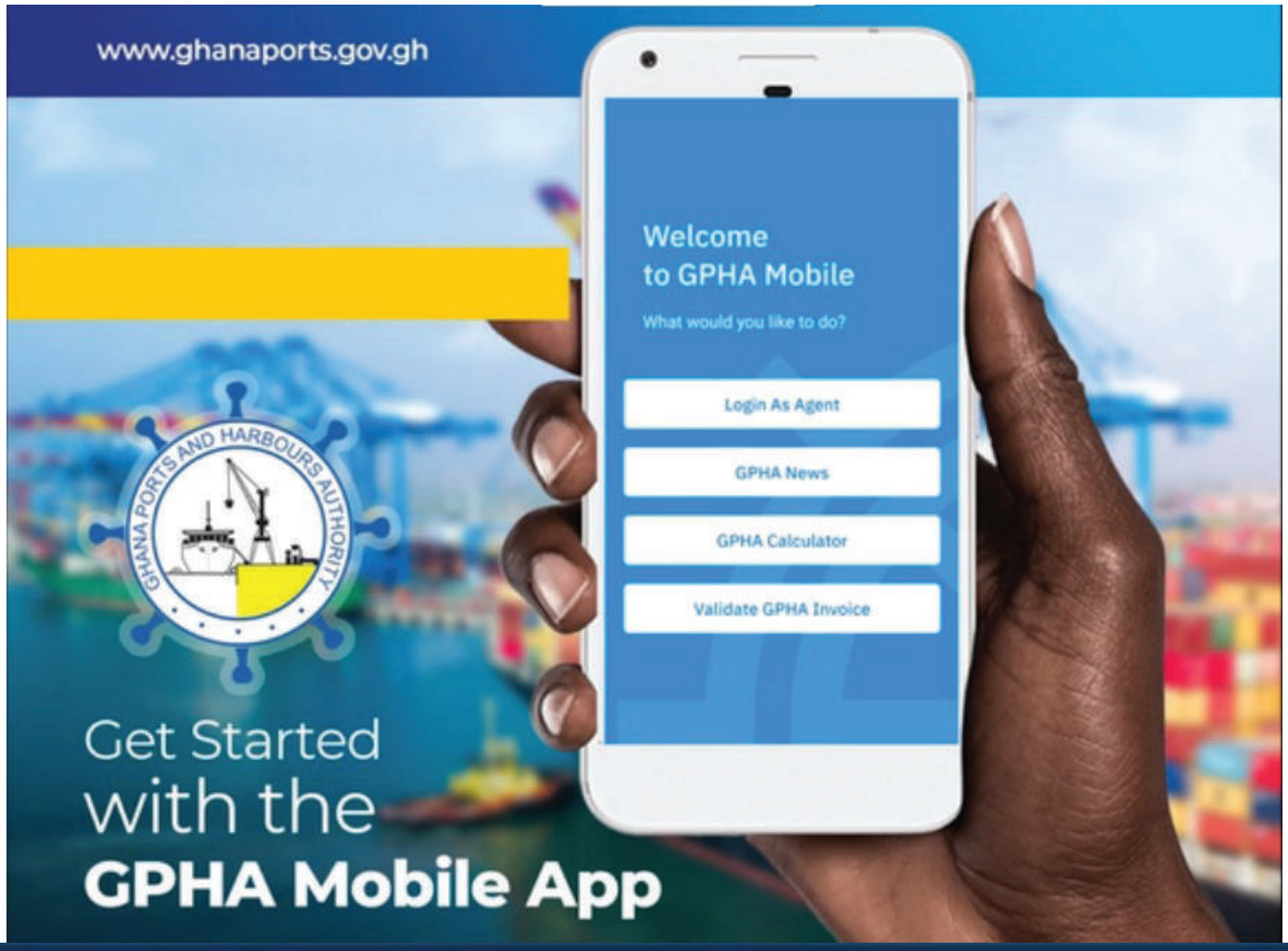
AUGUST 2022

ABSENCE OF GOVERNMENT POLICY ON DEMURRAGE

ISSN 2955-7836

INCLUDED IN THIS JOURNAL

GHANA PORTS AND HARBOURS AUTHORITY



METRO TV
DSTV CHANNEL **277**

SUNDAYS

5:30PM

EYE ON PORT

SHOWING

GTV
DSTV CHANNEL **278**

WEDNESDAYS

8:30PM

+233 55 901 9177 | Eye On Port Ghana | Eye On Port Ghana

SPONSORED BY

GOIL Good energy | Ghana Revenue Authority | Serene Insurance | Ghana Link | ICUMS Integrated Customs Management System

LEADING THE FUTURE OF TRADE

CONTENTS

EDITORIAL

We take this opportunity to welcome the maiden edition of GIFF Insight: An Innovative Journal for advancing International Trade in Africa and beyond. Under the operation and management of GIFF Research Hub, this Journal will provide far-reaching insights on cutting-edge research findings to assist policy decisions regarding International Trade on the continent of Africa and the world at large. Since its inception in the year 1965, GIFF has front-lined activities such as competency-based Education and Training, Advisory role and Advocacy in the Ports and Maritime industry. The Institute remains the only partner that truly interfaces with all the entities in the Ghanaian ports and maritime sector leaving an indelible mark in the evolution of cross border Trade in Ghana. With the coming into force of the Research Hub and for that matter this Journal, we vehemently believe that readers will discover golden information and acquire knowledge desired to preserve the futures of our dear industry. As an editorial team, our cup of excitement is filled to the brim as we witness the launch of this flagship project of the Ghana institute of freight forwarders. Our expectation is that this Journal instigate the interest of all stakeholders and the scholarly community by using this as a platform for thought-provoking debates, insights and analysis on topics relating to International Trade, Trade Facilitation, Continental Free Trade Agreements, Port Tariffs, Ports Cyber Security Strategies, SOLAS Conventions, Customs Procedures, Port Expansion, Port Logistics, Cost of Doing Business, Oil and Gas, Digitalization in Ports Supply Chains and more. The journal will publish a minimum of four issues every year. As such, Articles, Case Studies, Commentaries, Field Notes, Book Reviews, Practical Field Experiences, Review Articles, etc from various stakeholders in the ports and maritime supply chain, be it in Ghana, West Africa, Africa or from any part of the world should feel at home to submit papers for review and publication. Students and Alumni of GIFF Academy, Regional Maritime University and other Higher institutions of learning can equally take advantage of this Journal.

Happy Reading!

Editor – in – Chief
Mr. Jonathan Kwashie Amanor
Executive Secretary, GIFF

EDITOR-IN-CHIEF
JONATHAN K. AMANOR
(Executive Secretary, GIFF)

KWABENA OFOSU APPIAH
(Imm. Past President, GIFF)

DR. DAVID K. BOISON (Ph.D)
(Senior Lecturer / HOD, GCTU)

MR. GABRIEL ESSILFIE
(Director of Research & Innovation, GIFF)

MESSAGE FROM THE GIFF PRESIDENT

MR. EDWARD TETTEH-OWUSU AKRONG

I willpretend not to have been overwhelmed when the invitation was handed to me to speak at this launch because anything short of that will take me back into dreamland, when all I could achieve was the fantasy of this day. The day when we could marshal our own resources, (material and human), build capacity and within our own reach tell our story, or better still tell it in a manner that shapes our future, a future we would have consciously crafted.

You see, the storyteller once observed that "until the story of the hunt is told by the lion, the tale of the hunt will always glorify the hunter." Though we have affected this industry's development over the years, the reality of others telling the story of the hunt had punctuated every bit of our journey. Did Mark Twain not say there are three kinds of lies? And did he not name them as: Lies, Damned Lies and Statistics? Of course Twain was a humorist and we were rightly supposed to have laughed but folks what we are about to witness here today is serious business. That which has been achieved through years of toil and hard work, from concept to inception, and I would like to single out a few folks for special mention, Messrs. Joseph Agbaga, Kwabena Ofosu-Appiah, Dr. David Boison, Jonathan Kwashie Amanor, Gabriel Essilfie and others.

Ladies and gentlemen, our object of being in many parts enjoins us to be relevant to our subsector, contributing to the shaping and development of national policy that affects international trade. As architects of Ghana's international trade ways our marching orders had been long issued, we have huffed and puffed, bared our teeth at whoever needed to see the 'Mensah' in us, but we are here and now, choosing the path of science, research as a veritable tool with which to buy our future. Folks our destiny is defined and it does not look like we have too many choices than to take advantage of the opportunities the Fourth Industrial Revolution (4IR) presents. We are very well plugged in at the primary data source, the GIFF Research Hub is timely and critical for our sustainability, as we mark this milestone in our forward march we pray the Good Lord reward our efforts.

Welcome to the Ghana institute of freight forwarders research hub!

ABOUT GIFF RESEARCH HUB

GIFF Research Hub is an innovative research center that serves as a knowledge hub for shipping, ports and maritime matters in Africa.

The aim of the center is to use the state-of-the-art scientific research tools and techniques to provide empirical data to support the growth of the industry and governments across the continent of Africa and beyond. In the next five (5) years GIFF Research Hub intends to create partnerships with industry players and international organizations who leverage on ports and maritime data to drive policies. In addition, the center will partner with higher institutions of learning across the continent to organize conferences, seminars and workshop to assess and analyze international trade issues in order to create value and wealth for the industry. To achieve this the center has invested in training and development of 60 personnel in the industry to realize this vision.

The state-of-the-art office complex situated at the GIFF national secretariat have been created with seven (7) member Research Ethics Board (REB) competently manning it. GIFF over the past three (3) decades has built competence and practical knowledge in every aspect in the ports and maritime supply chain. GIFF is the only partner that interfaces with all the entities in Ghanaian ports and maritime sector.

Over the years GIFF has positioned itself as a beacon of hope for the Ghanaian Trade and Freight Transportation business front-lining activities such as competency-based Education and Training, Advisory role and Advocacy. GIFF has left an indelible mark in the evolution of cross border Trade and freight transportation in Ghana. The Research Hub concept is another dream GIFF is championing in this digitalized age to ensure that policy and decision making in the ports and maritime industry are backed by scientific research data.

Over several centuries, there has been ample evidence to justify the importance of research in

the development of countries and economies in the world. Research has played a pivotal role in the development of the most complex spacecraft to the simplest mobile phone. Research pervades in every aspect of human lives, from the complex medical equipment to a simple match box used to light a cigarette; research has played a leading role in shaping the activities of society and businesses. In business, most companies leverage on research and development (R&D) to introduce new product or service to customers and the ports and maritime industry is no exception. The business environment in which freight forwarding, logistics, ports and maritime industry is located is complex and dynamic with new laws and regulations continuously hitting our space every minute. Rigorous research is therefore required to understand the very fabric of the industry in the new age of disruptions in global supply chains.

The Research hub will therefore create a platform to delve into topical issues such as: Paperless Port System, Compliance, the Importance of Economic Partnership Agreements, The Role of Freight Forwarders in Trade Facilitation, International Trade, Continental Free Trade Agreements, Port Tariffs, Ports Cyber Security Strategies, SOLAS Conventions, Customs Procedures, Port Expansion, Port Logistics, Cost of Doing Business, Oil and Gas, Digitalization in Ports Supply Chains among other topics which will be investigated. In addition to these, other areas of research proposed by our partners will be considered.

GIFF ELECTED OFFICE HOLDERS

MR. EDWARD AKRONG
(President, GIFF)

MR. PAUL K. MENSAH
(1st Vice President, GIFF)

MR. ALEX ASIAMA
(2nd Vice President, GIFF)

MR. JOHN K. ADU JACK
(National Treasurer, GIFF)

PRINCIPAL OFFICERS OF THE GIFF RESEARCH HUB

MR. JONATHAN K. AMANOR
(Executive Secretary, GIFF)

MR. GABRIEL ESSILFIE
(Director of Research and Innovation)

MR. MATHEW BOAH
(Accounts Manager)

WORKING GROUP LEADERS

MR. ROMEO FRIMPONG
(District Exec., GIFF Tema)

MR. ERNEST TOBIA
(Chairman, GIFF KIA)

MR. MATTHEW DJEKE
(Counselor, GIFF Elubo)

MR. MAXWELL AFRIYIE
(District Exec., GIFF Sunyani)

MISS PAULINA ABROKWA
(District Exec., GIFF Tema)

MR. JERIMIAH HENYO
(District Exec., GIFF, Aflao)

MR. KWEKU AMPONSAH
(GIFF, Tema)

GIFF RESEARCH ETHICS BOARD

DR. DAVID KING BOISON (Ph.D)
(Senior Lecturer/HOD, GCTU)

MR. JOHN K. ADU JACK
(National Treasurer, GIFF)

MR. KWABENA OFOSU-APPIAH
(Imm. Past President, GIFF)

MR. JONATHAN K. AMANOR
(Executive Secretary, GIFF)

MR. KWAME A. ASARE
(Counselor, GIFF)

MR. ABGERTEY W. KWASHIE
(District Exec., GIFF Tema)

MR. GABRIEL ESSILFIE
(Director of Research & Innovation, GIFF)

THE RESEARCH HUB

CAUSES OF HIGH DEMURRAGE CHARGES AS APPLIED TO GHANAIAN IMPORTS

INTRODUCTION

The importance of maritime and port transportation in the global economy cannot be overstated. According to empirical evidence, over 80% of cargo volume is transported by sea, and this figure is even higher for most emerging economies, including Ghana (UNCTAD 2018). The increase in port fees and charges has become a major source of concern for stakeholders throughout the maritime supply chain, particularly traders who have to bear the full brunt of the recent phenomenon of astronomical freight hikes. As a result, the already high cost of doing business in Ghana's port has seen a steady increase albeit by other factors aside freight cost. Demurrage has been identified as one cost line item that has contributed to the port's high cost of doing business. According to the 2019 Ghana Shippers Authority report, traders paid $382 million in demurrage fees and charges to shipping lines in the six years 2010-2019, excluding fees and charges paid in 2011, 2012, 2014, and 2015.

Demurrage is defined in the voyage charter party laytime interpretation rules 1993 as "an agreed amount payable to the owners in respect of delay to the vessel beyond the laytime for which the owners are not responsible. "Laytime exceptions shall not apply to demurrage." This definition has evolved over the years and is now widely accepted to mean "the charge that the merchant pays for the use of the container within the terminal after the free time period has expired." Demurrage is a fee charged to customers who keep carrier equipment in the terminal for longer than the agreed-upon amount of time. It can be incurred for both exports (early drop-off) and imports (late drop-off) (late pick-up). In the case of export, demurrage days are counted from container removal to terminal to container loading, minus free days. In the case of import, demurrage days are calculated from container discharge to terminal removal, minus free days. Demurrage is a global phenomenon that manifests differently in different ports.

In South Africa, for example, Hapag-Lloyd's demurrage calculation begins on the day of pick-up at the designated place of interchange and ends after the full unit is returned to the designated place of interchange - Sundays and public holidays are excluded. Similarly, in the United States, working days exclude Saturdays, Sundays, and holidays, whereas in the United Kingdom, demurrage begins at 00.01 hours on the calendar day of the vessel's arrival (reference Hapag-Lloyd website retrieved on 6th June 2022;12:00noon). It is also worth noting that the Ghana situation is peculiar for the same shipping line (Hapag-Lloyd), which has been mentioned in all of these cases, because the definition of free days explicitly excludes the mention of public holidays, Saturdays, or Sundays. Unfortunately, this practice is common among all Ghanaian shipping lines (Maersk line, MSC, PIL, Antrak, Cosco,Grimaldi, etc.)

The main intent of demurrage is to deter the Trader from holding onto the ship's equipment (container) beyond the free time allotted in order for the vessel to have a quick turnaround time. According to the Federal Maritime Commission (FMC - the US maritime regulator), the purpose of demurrage is to incentivise cargo interest to hurriedly retrieve cargo and return the equipment within the time allotted, absent extenuating circumstances. However, when incentives no longer function because traders are prevented from picking up cargo or returning containers within time allotted, the rule holds that the charges should be suspended.

The situation in Ghana is different as systemic and procedural challenges prevent traders from both picking up and dropping off containers but do not enjoy any such suspension of demurrage fees and charges. The International Federation of Freight Forwarding Associations (FIATA) postulates that demurrage charges are legitimate tools for shipping lines to guarantee that their equipment will be returned within the stipulated time as fast as possible while those traders who exceed the time limit are charged accordingly. From the perspective of FMC, the interpretative rule indicates that the aim of demurrage charges levied by the shipping line is to act as a financial incentive for traders to retrieve cargo and return containers.

The goal of this paper is to look into the legality of demurrage fees and charges levied on imports in Ghana. To that end, the following questions are posed in this paper: (1) What factors influence Ghana's high demurrage costs, and (2) which legal framework supports the imposition of demurrage charges on imports? The study's findings will first raise awareness about the legitimacy of demurrage charges levied on imports in Ghana. Second, it will serve as a guide for policy formulation and implementation on demurrage charges and fees in Ghana and other African countries that use the same system. Finally, this paper will provide some understanding and insight into the concept of demurrage and its impact on trade facilitation across the

African continent.

CONCEPT OF DEMURRAGE

Numerous authors from industry and academia have defined the concept of demurrage. According to the advanced learners' dictionary, the simplest definition of demurrage is "a charge owed to the owner of a chartered ship for failure to load or discharge the ship within the agreed-upon time." This concept can be traced back to the voyage charter party laytime interpretation rules 1993 as "an agreed amount given to the owners for delay to the vessel beyond the laytime for which the owners are not at fault." No laytime exemption shall apply to demurrage." From the perspective of the freight forwarder, it is a cost assessed by shipping lines for the holding of containers over the allowed free period.

This description is consistent with the FIATA definition, which defines demurrage as "the charge that the merchant pays for the continued use of the container within the terminal after the free time period has expired." According to the Ghana Shippers Authority's Shipping Review (2018), demurrage is the usage or storage of containers in a port or terminal over the allotted free time or number of days. They argue that because the consignment of the shipper is still in the container after the grace period, the shipping line is prevented from reusing the container to provide services to other shippers, hence necessitating the imposition of demurrage fees. From the standpoint of freight forwarders, it is clear that Demurrage is a cost charged to clients who detain carriers' equipment in the terminal for longer than the agreed-upon free period. It is applicable to both exports (early drop-off) and imports (late pick-up).

Demurrage days in the case of export are calculated from the removal of the container to the terminal to the loading of the container, minus any free days. Import demurrage days are calculated from the container's discharge to its removal from the terminal, minus any free days. Even though the notion was originally associated with ships, it has grown through time to accommodate different types of equipment, especially containers.

Demurrage can also be defined in the context of imports and exports as "a cost applicable to clients when they detain carrier equipment in the terminal over the agreed-upon free time." It is applicable to both exports (early delivery) and imports (late pickup). Demurrage days in the case of export are calculated from the removal of the container from the terminal to the loading of the container, minus any free days. Import demurrage days are calculated from the container's discharge to its removal from the terminal, minus any free days. (Port Cost Review, 2018).

Demurrage has been a blight on the port and marine business, since its ripple effect causes a rise in the cost of cargo clearance in ports. According to Shippers Authority, over 80% of liner cargoes entering Ghana incur demurrage, requiring importers to pay additional monies to settle the demurrage. According to the Shipping Review (2019), importers paid exorbitant demurrage fees to the shipping companies. According to the statistics, $40 million was paid in demurrage fees in 2010. In 2013, USD 85 million, 2016 USD 95 million, 2017 USD 76 million, 2018 USD 59 million and 2019 USD 27 million.

According to anecdotal evidence, the majority of these enormous sums of money paid in demurrage were attributable to procedural and systemic issues other than a purposeful attempt to retain the vessel's equipment (container). Despite the fact that there are legitimate demurrage events resulting from importer/agent errors (late submission of documents, ignorance of clearing procedures, etc.). Statutory holidays in Ghana, such as Easter and Christmas, serve as a prime example.

A container arriving the day before Good Friday will undoubtedly have five of the seven free days counted, despite the fact that these are statutory holidays and the shipping line does not work. This will also apply throughout the Christmas holidays, making this an extremely unjust practice.

Even while the shipping lines deny this, it is considered that the entire concept of demurrage is a business model, which is why a variety of tactics seems to have been deployed to compel importers to pay the demurrage fees.

The complex release procedures adopted by shipping companies under the pretence of digitalization appear to be a strategy to delay cargo release. Some shipping companies have outsourced their release processes to countries with different time zones, resulting in an artificial delay in the release of cargo.

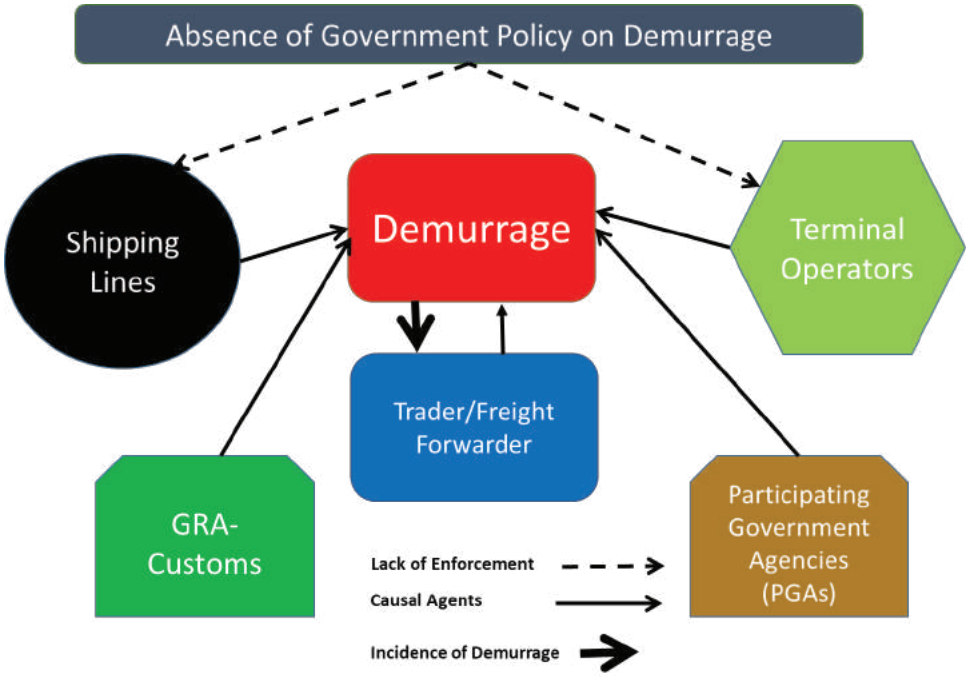


Figure 1: Conceptual Framework of Factors affecting High Demurrage Charges
Source: Author's Construct (2022)

Another issue of concern is the release procedures of shipping lines. In light of the national digitization initiative, very few shipping companies have properly digitised their cargo release procedures. Most shipping lines use laborious manual systems of release, which causes excessive delays and makes it nearly impossible for importers to avoid demurrage charges being levied. It was anticipated that these shipping lines would adopt the government-led national digitization initiative to facilitate trade and reduce the overall cost of doing business in the ports, thereby making our ports more attractive and competitive.

Despite these obstacles, the port of Tema has been ranked as one of the busiest in West and Central Africa (PMAWCA, 2021) despite these threatening demurrage charges that have the potential to derail the port's long-term success. In other jurisdictions, shipping lines are cautioned and assessed surcharges for violations involving the incorrect application of demurrage charges.

However, in Ghana, regulators do not impose any sanctions, surcharges, or penalties on shipping lines. Hapag Lloyd, a German shipping company, was recently ordered to pay $822,220.00 in civil penalties. Similar instances of incorrect application of demurrage charges have been overlooked by regulators, while shipping lines collect enormous sums of money under the guise of demurrage charges from importers.

SHIPPING LINES

At the heart of the issue of demurrage computation are the twin situations of ***Days after Final Discharge and the count of Free Days.***

Days after Final Discharge is effectively the day of the period a vessel discharges all cargo in its hold that is bound for the local port of call. Natural justice should have had it that the shipping lines begin to count days in whatever way conceivable from the day they have effectively placed the cargo at the disposal or reach of the Trader / Agent for the clearance processes to begin in earnest. It should be noted that the Day after Final Discharge is for all intents and purposes different from the Day of Arrival of the Vessel.

The vessel can only be discharged when it has been allocated a spot to berth, this is the only time discharge can commence. Indeed, while the discharge process is in session the shipping lines do not issue invoices for payment of administrative fees by the Trader / Agent in anticipation of cargo release until the vessel has been completely discharged and quite sensibly so, because they would not have envisaged to the fullest all the possible scenarios that could occasion cost!

The dichotomy of the two dates and their ramifications on demurrage computation should ordinarily not have led to splitting of hairs but for the unconscionable interest of the shipping lines. For the avoidance of doubt, the Customs Act, 2015 (Act 891) has copious references

indicating when time related actions that has direct effect on the Trader's interest (in relation to when they or their agents can access their consignment for clearance and release) must commence, with the particular mention of the phrase "after final discharge". Where imported goods are not delivered from a customs-controlled area after the stated period, Act 891(S 53. (1) (a)) is careful to indicate when it must be moved to the State Warehouse among other directives.

Also, when the State wants to repossess overstayed vehicles, it is careful to count the sixty (60) days as per Act 891(S 59. (1)). It is worthy to note that in the instances referenced above, the State is very careful not to unreasonably encumber the Trader by providing them a grace period of process time only to deliver this grace in a manner that, not the Trader or their agents can practically have access to their cargo because the discharge process has either not begun or ended. The State is reasonable in the application of this count, it is therefore inconceivable that shipping lines would begin the count of demurrage-free days on the day the vessel arrives.

It is the current practice of these shipping lines to count weekends and holidays as demurrage-free days, despite the fact that they do not operate on these days and are unable to provide the necessary service for the trader to release their cargo, despite being prepared to do so. Statutory holidays in Ghana, such as Easter and Christmas, serve as a prime example. A container that arrives the day before Good Friday will have 5 of the 7 free days counted, despite the fact that these are statutory holidays and no work is performed. This will also apply during the Christmas holidays, making this an extremely unfair practice. The legal definition of a day in Ghana clearly disapproves of this practice.

The Interpretation Act, 2009. Act 792) specifies in detail how "days" are to be counted. Regarding the date of commencement, Section 44 (3) of Act 792 states:

"Where in an enactment a period of time is expressed to be counted from or after a specific day, that day shall not be included in the period.

" In addition, Section 44 (5) of the aforementioned Act defines a day as follows:

"Where the time limited by an act for the performance of an act expires or falls on a Saturday, Sunday, or a public holiday, the time shall be extended to and the act may be performed on the first succeeding day that is not a Saturday, Sunday, or a public holiday."

The above implies that in Ghana, the official count of a day does not include Saturdays, Sundays, or holidays, and therefore Shipping Lines operating under the Republic's laws are not exempt from its laws.

Again, the return and receipt of empty containers by shipping lines have an immediate impact on demurrage. It is customary for Ghanaian ports to operate around the clock. As a result, it is believed that containers, which are properly regarded as part of the ship's equipment, must be received upon return at all times in order to expedite the vessel's turnaround time.

Also, the common practice of not receiving returned containers on weekends, under the pretext that there is no work on weekends, is a major source of concern, as this results in a continuous demurrage payment. The practice of receiving empty containers on the 'next' working day despite holding a demurrage deposit, which could act as a buffer or security for the container's receipt at all times, smacks of rent seeking. Before the container can be received at the 'empty' container yard on the following business day, the trader or his agent must go to the shipping line to be invoiced for any additional demurrage, if any, and pay the additional demurrage, if any.

Demurrage rates and demurrage deposits are not uniform and vary from shipping line to shipping line in Ghana, as do the exchange rates applicable to the foreign currency denominated items on their invoices. Untimely release of container demurrage refunds by the shipping lines themselves is a very serious matter that must be investigated. In light of all these factors, the most important of which is inflation, it is unreasonable and unfair to hold refundable deposits for periods ranging from two weeks to one month without paying interest to the trader, a major disincentive. This is a grave error on the part of shipping lines. From the foregoing, it can be concluded that the law of the land is reasonable and applicable.

The shipping lines do not issue invoices for payment of administrative fees in lieu of cargo release until the vessel has been completely discharged. It is therefore inconceivable that shipping lines would begin the count of demurrage-free days on the day the vessel arrives.

TERMINAL OPERATORS

The majority of ports have container terminals for receiving, storing, and delivering goods. Container terminals are constructed specifically for the transportation and storage of cargo. They serve as a barrier between railroads, ships at sea, and trucks and are a crucial connection in the network of intermodal transport supply chains. The ship operation, the quay transfer operation, the container yard operation (including container storage and in-terminal movements), and the receipt/delivery operation.

There is, of course, a fifth operation involving a container freight station at the terminal. At the Container Freight Stations, Quay Cranes (QCs) are assigned to each

docked vessel following the ship's berthing, these QCs unload inbound containers during the import operation. The containers are subsequently moved from berths to the storage area using trucks or other vehicles. As soon as the container reaches its stacking yard bay in the storage area, the stacking crane takes it from the truck and stacks it in the storage position. If a container must be removed from a stack and loaded onto a ship, the operation is performed in reverse.

Clearly this routine of shuffling cranes and trucks to operationalize a terminal that is to deliver at the optimum, a minimum equipment requirement must be guaranteed as well as a tolerable threshold of downtime. It is a common view held by most players in the port industry that the operations of terminals contribute to the undue delays and therefore have a shared responsibility in the high cost of demurrage.

THE PARTICIPATING GOVERNMENT AGENCIES (PGAs)

Typically, demurrage assessment in a number of jurisdictions takes into account the efficacy and inefficacy of Participating Government Agencies in port clearance. However, Ghana is not in the same position. Typically, demurrage charges are incurred by the trader; however, Government Agencies from the State's Ministries, Departments, and Agencies (MDA) such as the Food and Drug Authority, National Investigation Bureau, Free Zone Authority, Ministry of Trade and industry, and several others who are directly linked to Clearance at the port and harbours contribute enormously to Demurrage accrual.

For example, the processing of permits heavily laden with bureaucratic bottlenecks for the clearance of certain types of Goods in Ghana, which is also not time-bound, creates an unnecessary opportunity for bureaucrats in such Departments and Agencies of Government to unnecessarily delay the clearing process, for which the trader is not exempt from demurrage fee accrual.

When discussing demurrage accrual, the frequent strikes and labour unrest among government employees in the country cannot be overlooked. The three-week nationwide strike by GLOSSAG some few months ago, for instance, had a significant impact on business operations in the country, and it cannot be said that port operations were spared from the awkward situation that such a labour strike created.

In assessing demurrage charges against the trader, it is customarily overlooked that the trader, in the long run, will automatically pass the cost on to consumers, for which no one is exempt, including the trader. In light of these occurrences, the issue of demurrage charges continues to vex the trader, and there is a pressing need to bring it to the attention of the country's stakeholders and industry players in order to effectively address it.

THE CUSTOMS DIVISION

The Customs Division undoubtedly is at the centre of all processes leading to the clearance of cargo for release. They own the IT infrastructure which is the network spine of every process within the delivery chain. Apart from policy implementation without the requisite stake-holder engagement and buy-in which often results in bottlenecks that causes delays and its resultant time related costs including demurrage, extreme redtapism inflicted by multiple Customs entities like Customs Examination Officers, Customs Preventive Officers and tagging by Joint Port Customs Unit (JPCU) all on a single clearance transaction on any bad day (more than average) is one major enabler of demurrage.

Delays also result from errors on the part of Customs and the retification process: wrong HS Code, wrong valuation, wrong and delayed assessment coupled with laid back attitude by the Customs appeal process. The system's selective model appears not to factor in who is available or not, thus it picks an officer who is not available for whatever process, the trader or their agent has to wait until an allowable elapse period of inaction to prompt the requisite authority or in most cases till the scheduled officer is available or report for reassignment of another inspection officer.

In other cases, the officer may be available but loaded with many jobs while others almost idle, a sure deal for demurrage. A breakdown in the system due to power outages or network bug issues is also another factor that causes delay in the cargo clearing. Chief among the system errors is the current situation of wrong Expected Time of Arrival (ETA) input by ICUMS in the system, this serves to mislead the calculation of free-days to the disadvantage of the trader.

One of the advocacy moments against unfair demurrage calculations by the The Ghana Institute of Freight Forwarders (GIFF)

DEMURRAGE CHARGES IN OTHER JURISDICTION

The occurrence of demurrage is a worldwide phenomenon, but its implementation in ports of various nations varies, the variations however must be expressed in a business proposition that calls into equity and not by arbitrariness and rent seeking ventures. When calculating the number of free working days, most countries exclude Saturdays, Sundays, and national holidays but the common theme that permeates the significant majority of all is when "the day of count" begins. In South Africa, demurrage is calculated from the day a container is picked up to the day it is returned, excluding Sundays and public holidays. Nigeria has five demurrage-free days, per information from the Nigerian Shippers' Council and count begins after the day of final discharge from the vessel, this situation finds expression with our immediate neighbours (Togo and Ivory Coast). In the United States, demurrage is calculated excluding weekends and holidays. The Ghanaian situation does not exclude Saturdays, Sundays, or public holidays from the seven free days, despite variations in how different jurisdictions express free time.

APPROACH

In order to investigate the causes of demurrage charges applied to Ghanaian imports, this work used a descriptive survey design. The survey instrument developed by a panel of experts from the maritime and ports industry employed a 5-point Likert scale to obtain data from participants, was used for the current study.

Participants had access to the survey tool via a third-party site for collecting data (google forms). To choose the participants based on the inclusion and exclusion criteria of the study, Google forms used random sampling. Port users aged 18 to 64 who worked in the Maritime and Ports sectors made up the study's target demography. According to Omondi (2020), 80% of adults own at least one mobile device, hence the study makes the assumption that 2,584,625 will make up the study's sample size.

The minimal sample size of 407 was established via statistical power analysis carried out in G*Power 3.1.9.7 and as criterion for calculation, the power analysis estimates included significance, effect magnitude, and power (Fowler-Amato et al., 2019). 407 is a larger sample size than those utilised in comparative studies (Callies et al., 2019; Hu et al., 2020; Palanisamy et al., 2020).

We generated a questionnaire based on the survey instrument created and approved by experts from the maritime and ports industry using google form's survey builder tool. 29 questions in total, broken into 5 sections, made up the survey question. Four questions on demographic data were included in the first segment. The top four parts contained 25 statements that recorded respondents' opinions on a seven-point Likert-type scale, from 1 (strongly disagree) to 5 (strongly agree). Based on the participants' attitudes, opinions, and dispositions toward the statements in that section, the participants' value judgement was scored using a Likert-type scale (Göb et al., 2007). The data was analysed using descriptive statistics.

FINDINGS

Demographic Information

83% of the 510 respondents studied were male, compared to 17% who were female. This indicates the predominance of men in the port industry as compared to women. 40.7% of respondents were importers, 1.4% were exporters, 50% were freight forwarders, and 7.7% were other stakeholders. Freight forwarders and importers made up the majority of respondents. Regional configuration reported 78% from Greater Accra, 11.3% from the Western region, 7% from the Volta region, and 3.5% from the Bono region. This indicates that the majority of respondents are from Greater Accra.

CAUSES OF DELAYS-STAKEHOLDERS CONTRIBUTION.

We analysed sets of questions for each stakeholder regarding working hours, invoice generation delays, inadequate equipment, duty payment delays, physical examination delays, permit issuance delays, and officer negligence, among others.

Findings indicate that shipping lines were responsible for 25% of port demurrage, Terminal Operators for 22%, GRA Customs Division for 21% percent, PGAs for 19% percent, and freight forwarders for 13%.

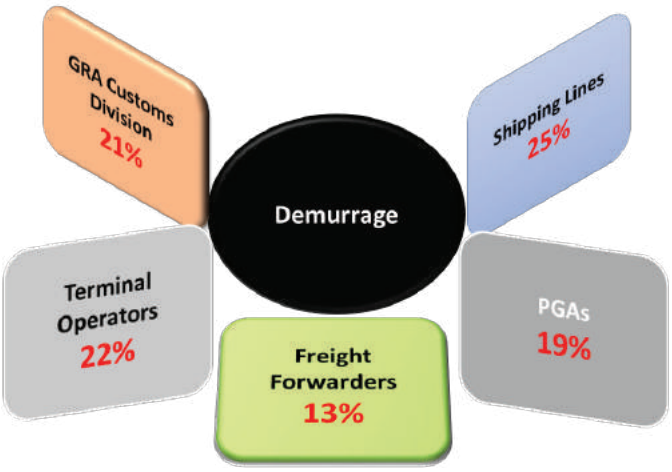
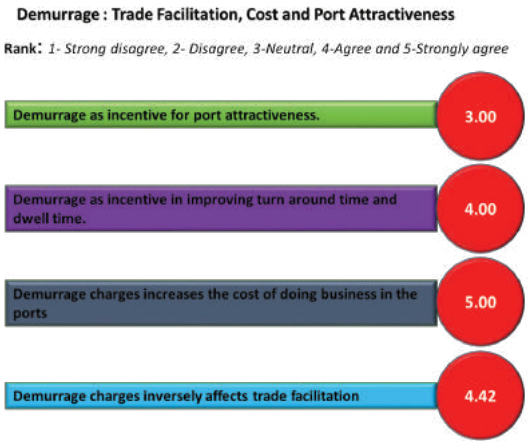


Figure 2: Causes of Demurrage
Source: Field data (2022)

DEMURRAGE: TRADE FACILITATION, COST AND PORT ATTRACTIVENESS

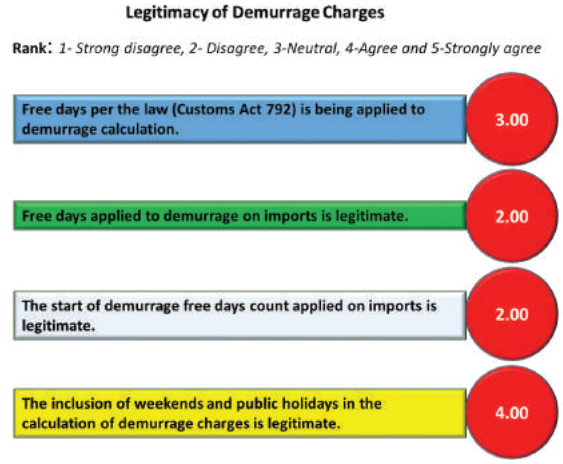
The study evaluated the impact of demurrage on trade facilitation, port costs, and port allure. Respondents were asked to rank the statements from Strongly disagree - 1 to Strongly agree- 5 on a five-point scale. Regarding port attractiveness, respondents were indifferent as to whether demurrage is a port attractiveness incentive.

In addition, respondents concurred that demurrage is an incentive for enhancing turnaround time and cargo dwell time. Also, regarding the increase in the cost of doing business due to demurrage fees, respondents agreed that high demurrage fees are a panacea for the port's high cost of doing business. In addition, respondents indicated that high demurrage fees have a negative impact on trade facilitation.



LEGITIMACY OF DEMURRAGE CHARGES

Respondents were indifferent (rank 3,00) as to whether the rules on counting days (Interpretation Act, 2009. Act 792) was being correctly applied. In addition, respondents scored "disagree" when asked if demurrage-free days are applied legitimately (rank of 2). Again, respondents expressed disagreement with the legitimacy of the free day calculation for demurrage (rank of 2.00). Also, respondents began by expressing indifference (rank of 3) regarding the legitimacy of including weekends and public holidays in the calculation of demurrage fees.



DISCUSSION AND CONCLUSION

Demurrage is a worldwide problem with varying impacts at various ports. The primary goal of demurrage is to prevent the Trader from keeping the container on the ship for longer than the free period provided, which is necessary for the vessel to have a speedy turnaround time. All parties involved in providing the service to the importer clearly shared responsibility for the delays that occurred.

It became clear that the shipping companies were a key player in driving up the cost of demurrage. This is seen in the time-consuming processes that some importers and freight forwarders go through to prepare invoices for payment of shipping lines' rates, which is exacerbated by the difficult free days computation. And because of the delays their operations generate at the ports, Customs, PGAs, terminal operators, and freight forwarders also play a major role in driving up demurrage costs. Perhaps this explains why most respondents had no firm opinion on whether or not demurrage as a punitive measure to facilitate container release by the trader improves trade facilitation in general. High demurrage costs, respondents said, make Ghanaian ports unappealing for trade because of the high expense of doing business there.

For this reason, it is crucial that port industry stakeholders who can help improve trade facilitation actually do so, rather than seeing it as a rent seeking avenue. However, the vast majority of respondents believed that demurrage, if properly computed and charged, will drastically reduce the cost of doing business to the trader while improving turnaround and reducing dwell times. Experts in the maritime and port industries share this viewpoint, therefore this finding is in line with the research already conducted in these areas.

From a lawful point of view. Based on the findings, respondents were convinced that the number of free days was calculated incorrectly and unlawfully (Interpretation Act, 2009. Act 792). Many respondents indicated that including weekends and holidays in the demurrage calculation was inappropriate. It is remarkable that the instance of Ghana deviates from the norm in other countries, such as South Africa, where demurrage is calculated from the day a container is picked up until the day it is returned (excluding Sundays and public holidays). In the United States, demurrage is computed Monday through Friday, omitting weekends and holidays. Despite variations in how various jurisdictions express free time, the Ghanaian scenario does not eliminate Saturdays, Sundays, or public holidays from the seven free days.

RECOMMENDATIONS

Relevant state institutions must be alerted of the non-conformance of shipping lines to the laws of the land in demurrage computation and the remedial actions thereof. Further actions, including legal, must be embarked upon to hurry the realisation of this goal if the supervising government agencies are found to have reneged on their responsibilities to this end.

The operations of the third-party assigns of the shipping lines must be properly aligned and instructed to operate in such a manner in receiving containers so as not to create bottlenecks that end up aggravating the trader's already precarious position.

Terminal handlers must have a mandatory imposition of KPIs that require a determined minimum number of equipment and the allowable downtime of operations. This must be made public and any deviations must be computed to offset the demurrage occasioned for the benefit of the trader.

Exemptions and Permits by MDAs must of necessity be timed and flagged for reasons if the timed period expires. This arrangement, if necessary, must be canvassed to be legislated so that the element of undue discretion and red tapism is completely removed.

The major ICT platform (ICUMS) that provides the backbone for the clearance processes must have an allowable downtime beyond which the trader must be insulated from all trappings of demurrage particularly if the Customs Division cannot trigger a by-pass or cannot deploy 'Plan B' in lieu of the systems unavailability.

The Customs Division and all other PGAs must have alternate measures in place to allow the work process to flow unimpeded any time scheduled officers are unavailable. Supervisors must have a triggering mechanism for the salvaging plan to be deployed.

Traders must endeavour to have onboard their local forwarders and brokers when they are making purchasing and shipping decisions, by this there will be little or no surprises at the point of clearance and release. Traders must equally know the tariff and other cost implications of their shipment long before the discharge of cargo into the terminals; this knowledge will very likely avert unnecessary demurrage.

The freight forwarders or the Trader's customs broker must position themselves to have fore knowledge of the shipment so they can reasonably prepare a clearance plan that may anticipate any demurrage inducing scenario. To this end agents must continually appraise themselves of the changing dynamics of the industry, thus sharpening their tariff classification skills, preparing the necessary logistics requirement for loading and unloading as well as the appropriate transportation arrangements and determining the right route for the final downstream leg of the supply chain.

CONTRIBUTORS

1. Edward Akrong (President, GIFF)
2. Kwabena Ofosu Appiah (Imm. Past President, GIFF)
3. Dr. David King Boison (Consultant, GIFF Research Hub)
4. Gabriel Essilfie (Director Research & Innovation, GIFF)
5. Kwame Asante Asare (Council Member, GIFF Takoradi)
6. Mathew Djeke (Council Member, GIFF Elubo)
7. Ernest Tobiah (Chairman, GIFF Tema)
8. Romeo Frimpong (GIFF Tech. Committee, Chairman)
9. Jerimiah Henyo (Council Member, GIFF Aflao)
10. Paulina Abrokwah (Executive, GIFF Tema)
11. Maxwell Afriyie (Council Member, GIFF Sunyani)
12. Kweku Amponsah (GIFF Monitoring)

ICUMS

INTEGRATED CUSTOMS MANAGEMENT SYSTEM

GRA

We value your feedback

Connecting to the Ghana Revenue Authority is now easier and more convenient via Whatsapp

0200 631 664

@GhanaRevenue

www.gra.gov.gh

GHANA'S ECONOMIC CRISIS: THE TWIN BROTHERS EFFECT

by Dr. Richard Asravor

The Covid-19 pandemic and the Ukraine-Russian are important global happenings that are affecting all economies. Whilst developed economies have developed the shocks to resist the grave impact of these "twin brothers", developing economies, especially those in Sub-Saharan Africa are bearing the brand of these brothers working together. Even among, the Sub-Saharan countries, some countries have developed "shock absorbers" to withstand the dire impact of the Covid-19 pandemic and the Ukraine-Russian war.

In Ghana, literature suggests that prior to the Covid-19 pandemic, Ghana's external and domestic debt was on the trajectory of weak sustainability due to the government's appetite for borrowing from the International market and the shift towards borrowing from the domestic market which was crowding out private firms from the local financial markets. The World Bank, country director optimistically cautioned the government over its debt situation and the incessant hunger for borrowing at sometimes outrageous interest rates. According to the Ministry of Finance and Economic Planning, Ghana's external and domestic debt as at the end of 2017 stood at 75,777.56 million Ghana Cedis and 66,769.08 million Chana Cedis respectively, but by 2020 the external and domestic debt was 141,796.83 million Ghana Cedis and 149,833.89 million Ghana Cedis respectively.

An examination of Ghana's fiscal indicators and economic conditions suggests that the country is heading in the wrong direction. The high rate of alleged and reported cases of corruption and the free falling or depreciation of the Ghana Cedis, add to the ballooning cost of living due to the high inflation rates are all signs that something somewhere is definitely wrong. Of focus in as much as the Covid-19 pandemic and Ukraine-Russian war are important factors, we cannot attribute all these happenings to these "twin brothers".

The high rate of inflation though largely imported relates to basic food and food products, such as rice, bread, and water, among others, has everything to do with the falling Ghana Cedis. The appreciation of the international trading currencies against the Ghana Cedis is making importers worse off than better off.

As an import-dependent economy, the increased demand for foreign currencies by Ghanaian businesses has led the Ghanaian currency to depreciate and increase the cost of imported goods. As most of the imported goods are intermediate, the high cost of import has resulted in the high cost of production, high inflation, and in most cases, businesses either shutting down or laying off workers to survive. After all this gloomy picture, the question is, "And So what"? The way forward is the agricultural sector. First, we must disabuse our minds, especially, the minds of the youth that agriculture is for the uneducated and low-income individuals. The school farm systems should be introduced whilst punishment for recalcitrant students should not be agriculture focused. Commercialization of agriculture should be encouraged and given incentives to individuals interested in taking farming as full-time employment. Whilst encouraging agriculture, it is important to also reduce the post-harvest loss associated with agriculture and encourage small-scale agro/production companies in Ghana. Secondly, the country should move away from import dependency to import substitution. Thus, producing more of the goods that would have otherwise been imported as well as producing goods in an efficient manner. The efficiency will lead to lowering the waste associated with the production. This will also imply that the agriculture value chain needs further improvement as its input will serve as an intermediate good for industries that will be built in the future.

The establishment of industries will help curb unemployment and reduce the dependency on foreign exchange. Whilst ensuring import substitution it is also important that we disabuse the minds of Ghanaians that produce by Ghanaian entrepreneurs are inferior to those imported. In order to address issues of corruption, my ideas are to cut down the red-tapism associated with many government businesses while empowering the citizens with relevant skills to fully participate in governance and report any issue of corruption. There is the need to resource anti-corruption agencies with the power to prosecute offenders irrespective of their party colour and political affiliations.

Finally, there is the need for the government to be fiscally disciplined by reducing the high appetite for borrowing but rather courage production and manufacturing. Thus, increasing production implies designing policies that are aimed at encouraging businesses to invest and grow.

"PLUG IN, ADAPT AND CHANGE";

GHANA'S READINESS IN MODERN ENERGY TRENDS

Development of every country is significantly dependent on energy. This means the level of development of a country is in direct relation with the energy consumed. Developed countries tend to consume more energy than developing countries. According to International Energy outlook report 2021, Africa still lags other regions in energy consumption per capita. These are coupled with weak energy infrastructures, low industrial growth, and high poverty rates.

ADB group reported that over 640 million Africans have no access to energy, the lowest in the world. Africa's energy potential is expansive if investment is jeered towards enormous energy resources on the continent. These notwithstanding, there are good projections of growth on the continent. EIA projects an economic growth of 5.0% per annum on average through 2040 on the continent.

According to UN-DESA, the world's 10 fastest growing cities in the world between 2018 and 2035 will all be in Africa. This growth on the continent is complemented by energy growth as well. There is more to be done. With implementable policies geared towards energy goals, the continent can achieve universal energy access by 2030 with focus on fully utilizing the continent's energy potential especially with renewable energy potential. Ghana's economy continues to expand rapidly.

New York Times in 2018 projected Ghana as one of the fastest growing economies with a growth projection of 8.3% to 8.9%. This growth was driven by the industrial sector. The target growth according to world bank is 7.4% with the industry leading the growth. The country was positioned to achieve massive economic growth through modernization (digitalization) of every sector of the economy. The government initiation of the E-Transforms programs backed by World Bank and other international agencies as a major boost in the country's development. Although these predictions have greatly been decelerated by the pandemic and currently the Ukrainian war, the Government of Ghana has assured of certain measures to sustain and grow the economy. This can greatly be achieved if the energy sector is well equipped and modernized to meet the growing demand of energy to complement economic growth.

The country currently has installed generation capacity of 5,134 MW with over 83% access of electricity nationwide. Rural energy access is around 50% with over 1.2 million household without access to electricity. The Energy Sector Transformation Initiative Project is funded by World Bank to strengthen the energy sector capacity.

Energy is being transformed all over the world, and we are all witnessing global changes both in the principles of consumption and in the production of energy resources. Is Ghana transforming her energy sector to meet and compete in the ever-increasing global energy transformation? I walk my dear readers through some of these modern trends and the position of Ghana in adapting the new trends in today's world.

Digitalization (Internet of Things) According to the forecast of the International Data Corporation (IDC), by 2020, the Internet of things will cover 50 billion devices. It is not only about household appliances, smartphones, and cars. The Internet of things is also being integrated into production capacities in various sectors of the economy: today the words "digital substation" or "digital double of a plant" are already a reality. Every modern industrial enterprise has the goal of universal digital integration.

Digitalization of the electricity supply in Ghana is very important in the sense that it saves cost of energy, eliminate transmission and distribution losses of electricity, monitor thefts and tampering with meters among other things.

Transmission losses account for 3.9 percent and distribution and commercial losses by the Electricity Company of Ghana account for as much as 16.2 percent of the gross electricity supply in the country. With the digital transformation of the energy sector rapidly growing globally, there is the need for Ghana to take advantage of the fast-growing transformation to help deliver efficient, affordable, and reliable electricity in the country.

Institutional players should collaborate to advance the growth of renewable energy integration. Also, there should be huge investment in modern technologies like smart grids, automated metering, and advanced optimization control systems to foster the growth of energy in Ghana and increase efficiency in the sector. This will also greatly reduce the cost of electricity by consumers.

Decarbonization (Carbon footprint reduction) The growth rate of investments in renewable energy which is been driven by decarbonization is increasing rapidly. The push toward decarbonization is fueling the expansion of renewable energy sources and more efficient energy usage. Innovation and technology are leading to the development of novel new business models, such as virtual power plants (VPPs), demand response, distributed generation, digital substations, and microgrids; and digitalization is giving customers more control over their energy consumption, which allows them to save money and improves energy efficiency. Ghana needs to plug in this innovation growth in the energy sector.

With this, strategies being adopted include, in addition to the reduction of direct greenhouse gas emissions, a resilient portfolio of hydrocarbons in which natural gas plays a central role, the development of green businesses, and the commitment to research and development of innovative solutions to support all the activities. All these things are aimed at achieving the goal of lowering the planet's overall greenhouse gas emissions.

Adoption of Electric Vehicles If, just a few years ago, electric cars were thought of as a fringe

phenomenon, unable to sway the approach that the world's largest automobile manufacturers took toward their production schedule, then now, electric cars represent a novel and possibly the only true plan for future growth. The use of electric vehicles has recently become trendy especially in Europe. Ghana is yet to adopt the use of electric vehicles.

The rising cost of fuel is giving rise of alternatives hence higher demand for electric vehicles. All of this indicates that the nature of the load on the energy systems will shift significantly. The addition of a new customer necessitates the development of a suitable charging infrastructure and the maintenance of enough demand for electricity. All of this means that the nature of the load on the energy systems will change significantly.
This pattern will give a powerful push to the development of energy, loading up the generating capacity that is already in place.

An entirely new market has emerged in Western nations as a direct result of the relatively widespread availability of technologies for the generation of electricity locally. Way forward Electricity production with modern technologies have spawned a new market in the world. These systems are modernized power systems, combining production, transmission, and distribution.

Arguably every country is expanding their energy infrastructure. The modernization of energy sector in Ghana has a success story although the sector is hindered by current economic and policy realities. There should be policy shift on modernizing energy usage in Ghana to reduce energy poverty and expand energy infrastructure.

Ghana needs to plug to the modern trend of technological adaptation. There should be an expansion on the research development in the modern technology and policy awareness for the people to understand these trends for the advantages.
Most consumers of energy are not interested in how electricity is produced, their focus is on price and reducing carbon footprint and these modern technologies are aiding in price reduction of energy usage and reduction of emission.
Energy architects, building engineers, developers, inspectors, and technocrats must collaborate with policy makers and the higher institution to make this a reality and create capacity and expertise in the Ghanaian energy sector.

By Derrick Ofori Donkor,
Ghana Communication Technology University, Economics Department
Email: dodonkor@gctu.edu.gh

+233208231559

GHANA COMMUNICATION TECHNOLOGY UNIVERSITY

We are now a public university charging competitive tuition fees!

CLICK HERE TO APPLY NOW!!!

2022/2023

MASTERS & DOCTORAL ADMISSIONS OPEN

Faculties

•Business School •Engineering •Computing

0303940446/ 0501579732/ 0202698352

info@gctu.edu.gh www.gctu.edu.gh

PROFESSIONAL SKILLS DEVELOPMENT FOR THE GHANAIAN INTERNATIONAL TRADE INDUSTRY - BRIEF HISTORY OF GIFF EDUCATION

By Jonathan Kwashie Amanor and Gabriel Essilfie

Just to borrow this popular mathematics phrase "without loss of generality" to prove a point, the Ghana Institute of Freight Forwarders (GIFF) knows the business of international freight/logistics to the core. More than that, the registered body for the Ghanaian freight forwarding industry also understands what it takes to deliver competency-based training that makes positive impact on the development and sustainability of the Ghanaian International trade, logistics, ports and maritime industry. GIFF over the years has been shaping the industry through professional skills development at the major entry and exit points, building international trade industry capacity and delivering measurable success for participants and employers.

Whether taking part in a regular open course or benefitting from the customized experience of our in-house training, what participants learn is relevant to their industry, their region and their respective organizations. Ghana's vision is to become a major logistics centre in the West-Central African Sub-region. If Ghana is to become successful among other aspiring logistics centres in the sub-region, it is important to provide adequate infrastructure and sufficient manpower for the various services related to transportation of cargoes and logistics management. Also, individual companies must enhance the efficiency and quality of their services in order to survive in a competitive logistics business environment.

The Institute's training programmes are geared towards providing formal and systematic training to middle-level and front-line executives in the various services related to shipping, distribution, freight forwarding and logistics management to ensure they are equipped with the appropriate skills required for effective performance of their jobs. The Institute also caries out other training programs for its members when needed particularly when new trade measures are introduced.

GIFF Education has a short past but a long history. This is because even though the department in its present form may have fully taken shape in 2005, institutionalized educational activities by GIFF, were born long ago. In 1990, the National Customs House Agents (NACHA) was transformed into GIFF to take care of the training needs of Freight Forwarders. This arose out of a felt need to set up an educational Institution for the training and mentorship of Freight Forwarders across the country. It is important to note that no Institution at the time had the mission to train Freight Forwarders. After the transformation of NACHA into GIFF in the early 90s, educational activities took the form of short course delivery and workshops for Clearing Agents. All attempts to run a fully-fledged educational programme could not materialize until the mid 90s when one Dr. Boye Ocansey and Mr. Olleenu from the Ministry of Trade stretched a helping hand. These Individuals aided the Institute to access a sponsorship package from the United States Agency for International Development (USAID) to run the course in conjunction with the Customs Excise and Preventive Service. Unfortunately, Customs management pulled out their lecturers because the MoU agreement with the Institute was not fully formalized.

In 2001, the Ghana Institute of Freight Forwarders decided to take advantage of the FIATA (Federation of International Association of Freight Forwarders) diploma in Freight Forwarding in order to initiate a more comprehensive educational programme. To this end, Course materials were developed and successfully validated at the headquarters session in Zurich,

Switzerland. The validation team was constituted by: Kofi Brako – President, Frank Sarpong – Vice President, Robert Kutin – Treasurer, Carlos Ahenkorah – Councillor, with Mrs. Joana Botchwey of the Regional Maritime University as the Consultant. In 2002, the GIFF National Executive council selected the Regional Maritime University (RMU) to run the diploma Course for the Institute due to lack of capacity. The attendees completed their course in 2004. In view of the huge fees charged by the RMU for running the course on behalf of GIFF, GIFF decided to run its own programme in 2005.

To this end, efforts were immediately made to build the capacity of GIFF. FIATA approved GIFF's application for the Training of Trainers and approved seed money of $20,000 for the programme. In addition, FIATA sent in four of their very good lecturers namely: Thomas Sim of Singapore, Marcus Shoeni of Switzerland, Dr. Peter Wong from Hong Kong and Dr. Vincent Valentine from the United Kingdom to facilitate the "Train the Trainer" programme. The course was ran at the Ghana Institute of Management and Public Administration in August 2005 as a full-time residential course for 35 attendees. Graduates of this "Train the Trainer" programme form the core of GIFF's lecturers today.

In May 2006, with the full collaboration of Customs Management, GIFF started the FIATA diploma course which includes the Customs proficiency module treated by CEPS training department. As per FIATA requirements, the course modules were re-validated in October 2007 at FIATA World Congress, held in Dubai, United Arab Emirates. The validation team was constituted by David Nutakor and Captain William Amanhyia. The first batch of graduates passed out in August 2008, consisting of 60 students all of whom are engaged in the freight forwarding/logistics/haulage Industry. In February 2009, the Certificate Course in Freight Forwarding was also introduced. The programme was intended to serve as an access course for applicants who for reason of low grades or inexperience in the freight industry cannot immediately access the diploma programme.

Also significant, is the initiative to run the programme in all districts of the Institute. In this direction, the programme has since August 2009 taken off at the Kotoka International Airport. Takoradi outlet took off in the year 2014. By the year 2015, GIFF Education was incorporated as GIFF Academy with its own Board led by Mr. Joseph Agbaga as GIFF President and Mr. Robert Dapaah as Head of Education. In the Year 2017 Mr. Jonathan Kwashie Amanor ascended the Education Manager seat and quickly pushed for the extension of GIFF training programmes to Elubo and Aflao districts. Several higher institutes of learning recognized GIFF Academy and therefore initiated a memorandum of understanding with us. For instance, Our MoU with the University of Cape Coast allows FIATA Diploma in Freight Forwarding Holders and FIATA Higher Diploma in Supply Chain Management to pursue Bachelor of Commerce programme in Procurement and Supply chain Management at UCC (SOB) starting from levels 300 and 200 respectively.

GIFF Academy now has an e-learning facility to accommodate students from other district as well as GIFF members who are not able to attend face-to-face class; GIFF Academy e-Learning Portal: Log in to the site (moodle.school). Our FIATA Higher Diploma in supply chain Management program, has been successfully re-validated by FIATA via online in November 2021. The programme is still in session with a lot of attractive modules in Supply chain management tailor-made for industry (opportunity exit for those who wish to take the course via blended learning; a combination of e-learning and face-to face. Some of the short courses /training programmes offered include seminars on "Customs Procedure and Processes for Air and Ocean freights and GIFF Executive ICT Training Workshop, Tender Logistics, Heavy Lift Cargo handling, etc. The Academy has tailor-made courses which can be designed to suit every training need in the industry.

The Institute is accredited by FIATA to provide training in Certification in Dangerous Goods Regulation (Multimodal). GIFF Education is aggressively riding through the storms and growing from strength to strength through the years. Our forebearers had always envisaged that GIFF becomes a National Research and Consultancy Centre for facilitation of International Trade. This is the time!

Jonathanamanor.ja@gmail.com
+233200204098

gabriel@ghanafreightforwarders.org
+233249895278

INFORMATION MANAGEMENT
IN FREIGHT FORWARDING: A NON-NEGOTIABLE CONSIDERATION FOR TODAY'S IMPORTERS AND EXPORTERS

BY
GABRIEL ESSILFIE

gabriel@ghanafreightforwarders.org
+233249895278

ABSTRACT

The paper examines information Management in freight forwarding and how it influences shipper satisfaction and loyalty using survey questionnaire. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used as the main multivariate data analysis tool. The study reveals a significant positive influence of freight forwarders information management on shippers' satisfaction. The study postulates that Freight forwarders "information management" dimensions are critical market winning considerations in terms of what constitute shippers' satisfaction and loyalty in international trade. The study therefore recommends emerging freight forwarders to consider information management tools such as Enterprise Resource Planner (ERP), Electronic data Interchange (EDI), Informational Websites, E-booking and so on to achieve competitive advantage over other companies offering similar businesses. The limitation of this study is that the data was centered only on the Ghanaian freight forwarding industry. This paper further contributes to practice in the pngoing debate about the need to leverage right information management tools in international trade.

Keywords: Freight Forwarding, Satisfaction, Loyalty, shippers, Information Management

INTRODUCTION

Customer satisfaction and loyalty has gained prominence in theory and practice in different fields (Durdyev et al., 2018; Famiyeh et al., 2018; Jamal & Naser, 2003; Kaur & Soch, 2018; Keshavarz & Jamshidi, 2018; Lam et al., 2004a; Mosahab et al., 2010; Oladele, 2016; Spreng & Mackoy, 1996; Tontini et al., 2017; Yeung et al., 2004). The relevance of this subject applies to all kinds of businesses, products and services because customers are the very reason products are designed. Marketing scholars properly place customers as the kings and queens in the marketplace. Whilst others exclaim that the customer is always right, it is also an undeniable fact that, the fate of every service provision or product design rests upon the shoulders of the customer.

A business cannot breathe without customers' patronage. In the competitive market, business operators have the obligation to satisfy their customers since they do them great favor by spending or making purchases from them instead of their equally capable competitors. Customers wield the power to exclude one's products from their choice simply because the service, product or the company is not up to customers' expectation. In the light of these, issues of customer orientation, customer satisfaction, customer loyalty, customer care, customer retention and other customer centered modus operandi should be a bedrock phenomenon of companies irrespective of industry, size, location and type.

In the contract of carriage, freight forwarding service providers are not in isolation from the power of customers. It is therefore incumbent upon freight forwarders to always remember that customers are the life-wire of their existence as business entities. Customer satisfaction defines the kind of judgment or feeling which customers exhibit as a result of patronizing one's products or services.

In defining Customer loyalty, Anderson and Jacobsen (2000) say customer loyalty is the product of a situation where a firm creates some sort of benefit for its clients just so they will keep them around to continue doing business with them. In the freight forwarding industry, Ahmed et al. (2020) discovered a direct positive influence of relationship quality on customer loyalty. Studies has established a mediating role of customer satisfaction on the effect of service quality on service loyalty.

The Consignor (buyer or importer), the carrier, the freight forwarder and the consignee (seller or exporter) are the main contractual parties in the transportation of goods (Akhmetshin & Kovalenko, 2018; Baluch, 2005). The main customers of freight forwarders in international trade business are shippers (Cain, 2014).

A shipper in the contract of carriage can either be the consignor or the consignee, or both. International trade, made up of importation and exportation can be very daunting, therefore importers and exporters use the services of a freight forwarder to handle their freight transportation ordeals so that they can focus more on their main businesses (Swinburne, 2019).

It is a common place that freight forwarders are regarded as persons or firms responsible for the arrangement of shipments on behalf of their customers from origin to destination. They play various roles while satisfying their customers' demand making them earn various names such as Global Logistics Providers (GLP), Non-Vessel Owing Common Carrier (NVOCC), Multimodal Transport Operators (MTO) and Logistics Integrators among others.

They are also regarded as the primary intermediary in cross-border trade and transportation (Bagyalakshmi & Karthika, 2015; Lu, 2013; Markides & Holweg, 2006; Perlman & Moshka, 2009). According to Langley & Capgemini Consulting (2015), shippers' knowledge of cargo carriage has improved over the years.

The stiff and hefty competition that exist in freight forwarding business today put shippers under intense pressure to make critical decisions regarding their shipment especially when it comes to selection of freight forwarders for their shipments.

Critical aspect of this decision is consideration for freight forwarders service quality dimensions including; accuracy of documents, no damaged goods, staffs' knowledge and expertise, innovative services, adherence to committed schedule, sufficient network of agents, regular visits, courtesy (Banomyong & Supatn, 2011; Mudunkotuwa & Gamachchige, 2017; Subhashini & Preetha, 2018). Other considerations include ambience, proximity, financial commitment, information management as well as reputation.

According to studies by Perlman & Moshka (2009) and Markides & Holweg (2006), components that make shippers satisfied with freight forwarders may vary because there are wide range of services provided by freight forwarders and these services somehow define what they do to the customers (shippers). However, it is imperative that freight forwarders carve healthy and mutual understanding among their customers to achieve customer satisfaction and loyalty.

The forwarder must endeavor to appreciate the flow of shippers' demands or needs to maintain a healthy partnership leading to satisfaction. Securing and maintaining shippers' information from the beginning to the end of shipment is a key quality shippers may want to see in their appointed freight service provider. This calls for the needed investment into right technologies and software on the part of freight service providers to facilitate information management in terms of interaction with customers and even potential ones.

Data security and maintenance in the shipping environment is pivotal for shippers. No wonder Pearlman (2009) found out that proper information management constitute good service quality. Shippers by themselves may not accompany their goods onboard the vessels, aircraft, train or truck, it is the shipping information that moves with the cargoes.

Meanwhile, it appears there is paucity of literature specifically on information management in freight forwarding and its semblance influence on shippers' satisfaction and loyalty.

This paper therefore seeks to examine the effect of freight forwarders' information management on shippers' satisfaction and loyalty. The paper aims to provide answers to the following research questions: first, what is the state of information management of Ghanaian freight forwarders and second, what relationship exist between freight forwarders' information management, customer satisfaction and loyalty in Ghana. The remaining sections of the paper are organized as follows; Methods measures, Discussion of Results, key findings, conclustions, recommendation and directions for future studies.

METHODS AND MEASURES

This paper used a survey questionnaire to collect data from shippers who happens to be main clients of freight forwarding services providers in Ghana. Qualtrics, the leading experience management software was used to administer the survey yielding overall valid responses of 294.The survey questionnaire was designed using already validated constructs from previous research works and were anchored by a strongly disagree/agree five-point scale. measurement items for Information management (My freight forwarder has an informational corporate website, my freight forwarder has e-booking and online pricing facility, and so on was adapted from past studies. The Shipper satisfaction (SSAT) construct used seven (7) statements such as compared to other freight forwarders, I know my freight forwarder gives me high quality service. Also, five (5) Shippers loyalty (SLO) items were drawn and modified from (Famiyeh et al., 2018; Herold, 2015) as follows; I will say positive things about my freight forwarder. Respondents biographic data questions such as indicate the number of years your company has been in operation, which of the following best describes your company's business type, etc were drawn from past authors (Banomyong & Supatn, 2011; Markides & Holweg, 2006; Murphy & Daley, 2000; Yang, 2016).

DISCUSSION OF RESULTS

Results from table 1 indicate that, the outer loadings of all 18 items studied are above 0.5, with some much closer to 0.70, and 10 out 18 being above 0.70 indicator validity threshold (Durdyev et al. 2018). The study satisfies the Cronbach's alpha as well as the Rho_A values (Hair et al., 2013) which has been presented in table 1. The study passed the composite reliability test threshold of 0.70 (Wong 2013), a measure of internal validity, thereby making the measurement items rigor in terms of internal reliability. For convergent validity, Average Variance Extracted (AVE) for all the latent variables exceeded Hair et al.'s (2013) threshold of 0.50.

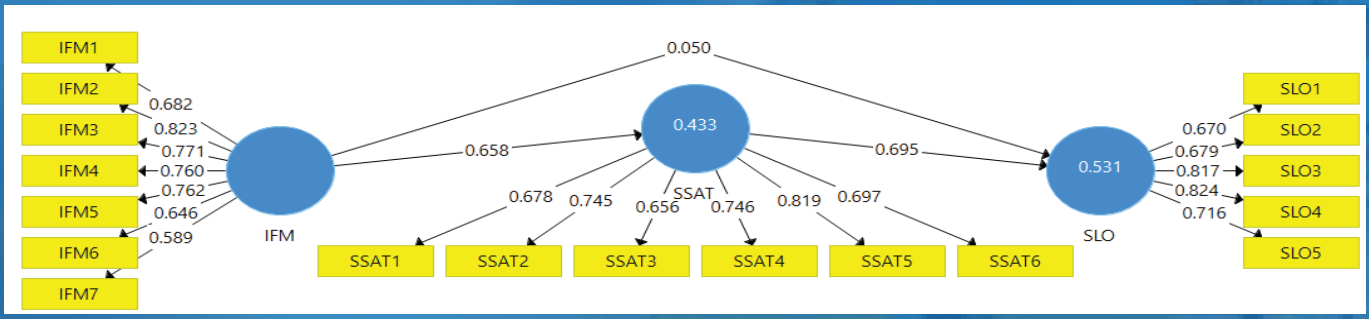
Table 1: The Measurement Model

Construct	Items	Loadings[a]	CA[b]	Rho_A[c]	CR[d]	AVE[e]
Information	IFM1	0.6781	0.8451	0.8555	0.8835	0.523
Management	IFM2	0.8271				
	IFM3	0.7778				
	IFM4	0.7555				
	IFM5	0.7660				
	IFM6	0.6398				
	IFM7	0.5876				
Shipper	SSAT1	0.6913	0.8182	0.8214	0.8688	0.5259
Satisfaction	SSAT2	0.7439				
	SSAT3	0.6499				
	SSAT4	0.7419				
	SSAT5	0.8158				
	SSAT6	0.6968				
Shipper	SLO1	0.6703	0.7973	0.8176	0.8603	0.5539
Loyalty	SLO2	0.6795				
	SLO3	0.8177				
	SLO4	0.8242				
	SLO5	0.7144				

Note 1: [a]all items loadings → 0.5 depicts an indicator reliability (Durdyev et al. 2018); [b] all Cronbach's alpha values → 0.70 shows indicator consistency (Hair et al., 2013) ; [c] all Rho A values → 0.5 indicate indicator reliability (Memon and Rahman, 2014; Hair et al., 2013); [d] composite reliability (CR) values → 0.70 indicates internal consistency (Wong 2013).; [e] Average Variance Extracted (AVE) values → 0.5 depicts convergent reliability (Hair et al., 2013).
Source: Field Survey, 2022

THE STRUCTURAL MODEL

Results from figure 2 represents the final Structural Equation Model of the study. The R^2 values expressed in percentages basically indicates the contribution of the endogenous latent variables towards the structural model. The structural model reveals that about forty-three percent (43.3%) of the variations in shippers' satisfaction is being accounted for by the freight forwarders information management while about 53% of the variability of Shippers Loyalty explained by Shipper's satisfaction. Cohen (1988) provides a threshold for interpreting R^2 values as follow; a 2% R^2 values indicates a small effect, 13% R^2 values is classified as medium effect while R^2 value of 26% can be termed as a large effect. To this end, the R^2 value of 43.3% for Shipper's satisfaction and 53% for Shippers Loyalty depicts a very large effects in the structural model.



Note 2: Information Management: Informational Corporate Website (IFM1), e-Booking and Online Pricing (IFM2), Access to Freight forwarders Info. Tech (IFM3), Reliable Information (IFM4), Produce status reports Independently (IFM5), Create Customs Classification Database (IFM6), Keeps Customer information confidential (IFM7). Shipper Satisfaction: High Quality Services (SSAT1), Satisfied with Service Delivery (SSAT2), Delighted with Services (SSAT3), Feel relaxed clearing goods (SSAT4), Overall happiness (SSAT5), Makes all processes known (SSAT6). Shipper Loyalty: Say positive things (SLO1), Keep Close relationship (SLO2), Consider self-loyal (SLO3), Would remain with freight forwarder (SLO4), Will recommend (SLO5)

Figure 1: Structural Model showing the Relationship between freight forwarders information management, Shippers Satisfaction and Loyalty.
Source: Field Survey, 2022

Table 2: Decisions and Conclusions on study hypotheses

Research Hypothesis	Exogenous variable	Path	Endogenous Variable	Path Estimate	P Values	Decision
Hypothesis 1	IFM	→	SSAT	0.334	0.001	Reject H_0
Hypothesis 2	SSAT	→	SLO	0.728	0.000	Reject H_0

Source: Field Survey, 2022

KEY FINDINGS

Based on the results from table 2, we reject Ho of hypothesis 1, since (β = 0.334, P-value = 0.001) is less than α = 0.10. We therefore conclude that all the Information Management (IFM) attributes considered in this study namely; availability of informational corporate website, e-booking and online pricing, shippers ability to access or interface with the freight forwarder's information technology, reliability of freight forwarder's information systems, shippers ability to produce status reports, customs classification retention as well as keeping of Shippers information confidential has a direct positive impact on Shippers Satisfaction (SSAT). Mudunkotuwa & Gamachchige (2017), Perlman & Moshka (2009) and Subhashini & Preetha (2018) are some of the authors who named these items as crucial elements that determines shippers choice of freight forwarders. This study has therefore contributed to existing debate on the subject with 90% confidence level that IFM construct is critical for the choice of freight forwarders and further exerts positive influence on shipper's satisfaction of shippers using the services of freight forwarders operating in Ghana. To enhance

freight forwarding business in Ghana, critical attention and investments must be directed towards the building of a formidable information management systems like ERPs, and informational corporate websites. Customers must continuously be assured of the confidentiality of their information. According to table 2, there is an indication of a smaller p-value of 0.000 than the alpha-value of 0.10. Hence, we reject Ho and conclude that, Shipper's satisfaction has a direct positive relationship with loyalty. In Famiyeh et al. (2018), this relationship was confirmed with β= 0.8377, p-value = 0.000), thereby satisfying their H2 . Similarly, in Mosahab et al.,(2010), correlation indices of satisfaction and loyalty variables resulted in a significant positive linear relationship. Hypotheses testing was conducted at 0.10 level of significance throughout the study

CONCLUSIONS, RECOMMENDATIONS AND DIRECTION FOR FUTURE STUDIES

The paper joined the arguments around the drivers of customer satisfaction and loyalty in the maritime and port industry using primary data from shippers who patronize the services of freight forwarders operating in Ghana.

Based on the result of the analysis, the following conclusions were drawn. The study establishes a conclusion with 90% confidence level that, shippers patronizing the services of freight forwarders in Ghana do not take information management capabilities of Ghanaian freight forwarders lightly, they seriously regard them as critical factors when hiring a freight forwarder for shipment. The study result has shown that, there exist a significant positive influence of freight forwarder's information management on the Shippers satisfaction.

Finally, results of this study have shown that, Shipper's satisfaction has a direct positive relationship with Shipper's loyalty. Based on the key findings, a plethora of recommendations has been given out for both business and the scholarly communities as follows; investment into information management tools for the ports and maritime industry can potentially yield customer satisfaction and improve sales volumes. Freight forwarding companied are required to own, keep and management informational corporate website, e-Booking and Online Pricing facilities, provide reliable information to clients, keeping shippers' information confidential as these are non-negotiable elements for customer satisfaction in the ports and maritime industry.

A good customer care and relationship management should be a daily pill for freight forwarding firms, through the enforcement of politeness and courtesy of every employee of the freight forwarder's firm. Future studies could improve number of variables considered to include several of others and possibly look out for principal information management components for achieving shippers' satisfaction and loyalty.

REFERENCES

Full reference available on www.giffghana.com , may be requested also from the GIFF Research Hub via ***research@ghanafreightforwarders.org***

ShippersApp

An easier way of getting your shipping and logistics information

- Shipping News
- Maritime Trade Statistics
- ETA/D of Vessels
- Charges at the Ports
- Lodging of Shipper Complaints

ANDROID APP ON Google play

Download on the App Store

www.shippers.org.gh

HEAD OFFICE: 7TH FLOOR, GHANA SHIPPERS' HOUSE NO. 12, CRUICKSHANK STREET, AMBASSADORIAL ENCLAVE, WEST RIDGE. TEL: +233 (0) 302 - 666915-7/ 668769 E-MAIL: INFO@SHIPPERS.ORG.GH

GHANA SHIPPERS' AUTHORITY - *Providing Shipping Solutions*

ADVANCE RULING; WHAT WENT WRONG?

INTRODUCTION

The concept of advance ruling has become relevant in recent weeks as a result of the special prosecutor's incursion into our space and the subsequent fallout. This has generated a lot of hot air, as well as interesting claims by overnight experts, which in most cases have only muddled the situation further. According to the Trade Facilitation Implementation Guide *"Advance rulings are legally binding decisions made by Customs in response to a request from the importer or exporter regarding the importation or exportation of specific items. In preparation for importation or exportation, importers and exporters can request rulings in advance regarding the classification, origin, or Customs value of products. As essential determinations about the products have already been made in the advance ruling, the declaration and subsequently the release and clearing processes are simplified. Advance judgements are binding throughout the Customs jurisdiction at all Customs offices for a specified length of time, such as three months or one year".*

THE CONFUSION

The conversation by and large over these past few weeks had rendered the Advance Ruling concept as though it was a valuation method. Whereas the hierarchy of the Division has been pushing an argument of a certain historical antecedent, the OSP maintains that the Division (Customs Division, GRA) departed from the tenets of their own rule book - Act 891. This discourse is to engineer the conversation among ourselves as practitioners, enjoined by the objects of our (GIFF) constitution to shape national policy relative to revenue mobilisation and trade facilitation. The Division maintains they created a dispensation to reward volume as they target revenue, for which reason, the rule book was set aside as claimed by the Special Prosecutor (SP). Our interest however, is to ascertain the right thing to do when faced with the option to apply for Advance Ruling, now that it has become topical and manifestly possible.

THE PROVISIONS

The definition and scope as presented in the Trade Facilitation Implementation Guide has been domesticated as part of Section 12 of the Customs Act, 2015 (Act 891) as follows:

(1) The Commissioner-General may issue a written ruling applying the customs law to a particular set of facts submitted by an interested party.
(2) An interested party in this section includes
(a) a person, or authorized agent of a person, who has a demonstrable interest in the questions presented in the request, and
(b) an importer or exporter.

(3) The ruling may relate to the tariff classification, customs value, country of origin of the goods or to any other activity to which the customs law applies.

(4) An interested party may request for a customs ruling from the Commissioner-General.

(5) The request for a customs ruling shall be in writing and include
(a) a statement of all relevant facts,
(b) the names and addresses of interested parties,
(c) the name of the port where the goods are expected to arrive or depart, and
(d) a description of the transaction in sufficient detail to allow the application of the customs laws.

Whereas the first four subsections of Section 12 of Act 891 express what the Commissioner General may do in the wake of an application as to who qualifies to apply, the scope of the request (tariff classification, country of origin and valuation) and the authority to apply to, subsections 5 presents the general guidelines on information to be provided while subsections 6 and 7 below presents further detailed requirements for Advance Ruling on Tariff Classification, Country of Origin and Valuation among other possible scenarios.

(6) A request for a customs ruling in relation to tariff classification of goods shall include, in addition to the requirement in subsection (5),
(a) a complete description of the merchandise including
(i) the packing weight,
(ii) the chemical analysis,
(iii) the description of the goods,
(iv) the production and expiration date,
(v) the name and brand of the goods,
(vi) the physical description,
(vii) function of the goods,
(ix) composition of the goods, and
(x) characteristics of components;
(b) the commercial or technical designation of the goods; and
(c) where the goods consist of more than one material, the composition of the goods by weight, volume and value of each component.

(7) A request for a customs ruling in relation to valuation of goods for customs purposes shall include in addition to the requirement in subsection (5),
(a) the information required on an invoice;
(b) the terms of trade including Free on Board, Cost Insurance Freight; and
(c) a description of any relationship between the parties.

Subsection 8 provides the caveats under which the ruling is binding on the Commissioner-General and the recipient as expressed below:

(8) A customs ruling is binding on
(a) the Commissioner-General, only in respect of goods for which customs formalities are completed after the date on which the ruling takes effect; or
(b) the recipient of the ruling only with effect from the date on which the recipient receives, or is considered to have received, notification of the customs advance ruling.

Apart from the allotted time that the ruling may last, subsection 9 hints of the possibility of the Commissioner-General calling it off.

(9) A customs advance ruling is binding until the ruling is overturned by the Commissioner-General.
Subsection 10 below delineates conditions under which a ruling cannot be made:

(10) A customs ruling shall not be issued where the request
(a) concerns a current or completed customs transaction;
(b) presents questions or transactions that are hypothetical in nature; or
(c) presents a question that is pending before a court.

That the ruling shall remain a public document is established by subsection 11 by obligation on the Commissioner-General or by request from an interested party.

(11) The customs ruling made by the Commissioner-General
(a) shall be published; or
(b) in respect of a request of an interested party, the party shall be notified not later than thirty days after the ruling is made

Subsection 12 announces review possibilities by an interested party to the Commissioner General or to the Courts within a specified time frame.

(12) An interested party may request for
(a) a review of the customs advance ruling by the within thirty days of the publication or notification of the ruling; or
(b) a judicial review of the customs advance ruling made by the Commissioner- General within thirty days.

Subsection 13 guarantees the confidentiality of the applicant party's information.

(13) The Commissioner-General shall treat information submitted under this section as confidential, unless the parties agree otherwise.

OUR TAKE

The history, definition, breadth, and our law as expressed should have removed the fetish from this topic, but it appears that we as a people have managed ourselves into an intolerant group of people, or perhaps tolerant of anything that further accentuates the dichotomy between pragmatism and self-aggrandisement, to the point where we feverishly pander to the latter, throwing all sane arrangements to the wind, only to, in most cases, make the proverbial 360 degrees at the expense of good fortunes to the state, trader and above all our future development.

Otherwise, the framework for operationalizing any type of request under the Advance Ruling is properly established by the provisions as described above.

Whiles at it perhaps we can ponder over Professor Kweku Asare's seven (7) point issues he raised on his Facebook wall in relation to the Office of the Special Prosecutor's report on the Labianca saga:

(1) whether the applicant and transactions qualified for applying for a customs advanced ruling (CAR)

(2) what is the legal basis for issuing the CAR, which reduced the benchmark values;

(3) whether, under the law, Mr. Adu had the power to issue the CAR?

(4) why the customs technical service bureau's (CTSB) negative advice on the application was ignored or set aside;

(5) how the application was resuscitated after the negative advice;

(6) whether the CAR was brought to the notice of the Commissioner General; and

(7) whether there is influence peddling.

The law lecturer further asserted that *"these are serious issues that belong to a judicial forum constituted to determine whether there is corruption and corruption related tax evasion, especially as the implicated parties are politically exposed persons"*. As we await the mileage that this saga is likely to travel and the possible ramifications, the issues raised can and must engage our research attention.

CONCLUSION AND RECOMMENDATIONS

From the narrative so far, it does not look like the case under review adequately falls within the remits of Advance Ruling; it looks more like an extrajudicial creation, fashioned to ostensibly reward volume in a bid to shore up government revenue but at what cost in reference to the National Policy on the local Poultry industry? Be that as it may, we (practitioners) must look out for some of these booby trap situations whilst advising our clients. Our take is to insulate ourselves as practitioners in the wake of the numerous injunctions in the laws that regulate our activities, holding us liable jointly and severally for acts of commission and omission because clearly the footprints of crime, they say, cannot be wiped away by time.

Clearly Advance Ruling is a trade facilitating measure or a tool which, when used appropriately, could potentially result in a significant decrease in total trade expenses. The impact of advance judgements on trade costs in other jurisdictions (Europe) has been projected to make some savings of approximately 5.4% to the trader. Some more degree of transparency as enjoined by the law (Section 12 (11) of Act 891) and further enhanced by Article 1 of the Trade Facilitation Agreement on Publication and Availability of Information is required to place the needed information at the doorstep of all and sundry. This when done will demystify the dispensation under review and perhaps others still cloaked in opacity, thus affording everyone the opportunity to take advantage of what the law permits.

MODELLING A BLOCKCHAIN READY PORTS AND SHIPPING SUPPLY CHAIN IN WEST AFRICA - A CASE OF GHANA

BY

DR. DAVID KING BOISON (PHD)

kingdavidboison@gmail.com

+233207697296

INTRODUCTION

In recent decades, Blockchain (BC) has emerged as one of the most disruptive technologies, gaining considerable attention from industry and academia. BC is currently being used in a range of disciplines for study in academia and industry throughout the world [1]. Initially established in 2008 as part of Bitcoin's basic infrastructure [2], the topic of whether BC adoption would result in the replacement of existing technologies is still up for contention. BC has been successfully deployed in non-monetary systems, including online voting, decentralized messaging, distributed cloud storage systems, proof-of-location, and healthcare, among others [3]. In addition, supply chain and logistics, social governance, gaming, e-commerce, global payments, digital rights, crowdfunding, and intellectual property are all in varying adoption stages. The BC technology is still in its infancy, with the purpose of, among other things, decreasing rising transaction settlement speed, fraud risk, and enhancing transaction auditability [4-7]. Countries such as Sweden, Estonia, India, Singapore, and Dubai are building the essential infrastructure for British Columbia in order to improve governance and mitigate the negative effects of urbanization [8]

In the past and more recently, there have been several complaints regarding the excessive delays at the clearance of goods in the majority of West African seaports [9,10]. Lack of integrated systems has led to excessive bureaucracy in the port supply chain network, which accounts for a portion of these delays. Studies in relevant sectors of the port business have emphasized the need to increase port system efficiency through port information management. For instance, [11] and [12] highlighted the effects of port congestion on the logistics and supply chain network in Africa due to delays.

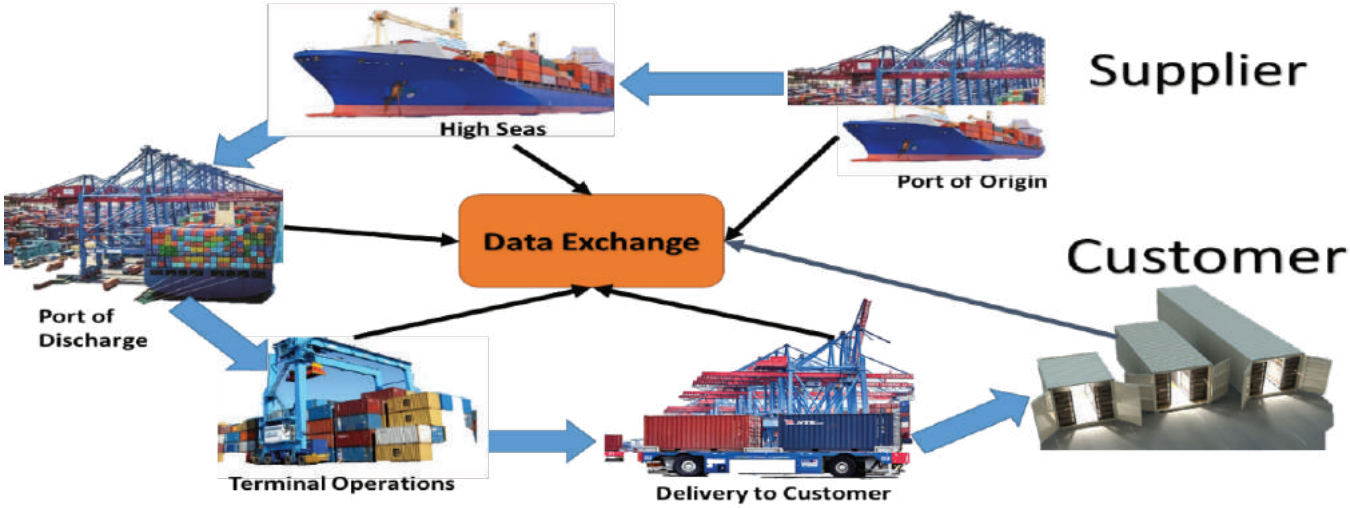


Figure 1: Seaport Supply Chain Network; Source: Boison and Antwi-Boampong (2020)

Figure 1. illustrates a typical port supply chain network system where a supplier at the port of origin (shipper) moves cargo to a customer (consignee)\sat the port of discharge. To facilitate this movement of cargo, certain required documents (Manifest, Bill of Lading, Bill of Entry, Commercial Invoice etc) (Manifest, Bill of Lading, Bill of Entry, Commercial Invoice etc.) must be exchanged via systems (mostly Electronic Data Exchange) by actors or stakeholders (Customs, Port Authorities, Freight Forwarders, Regulatory Agencies etc.) in supply chain to play their mandated roles to complete the transaction. The various challenges identified by [13] and

[14] among others give rise to the need to explore the potential of adopting BC technology to the port supply chain ecosystem using the importation of vehicles to ports in West Africa sub-region as a scenario case. The purpose of this paper is to propose a BC ready port supply chain for ports in West Africa. Specifically, this paper explores the need for transparency and traceability in port supply chain, the current state of the BC technology and the potential growth in other areas and finally propose a BC ready port supply chain concept using west Africa seaports as a case study. Port Supply Chain Transparency and Traceability Using BC Technology.

The supply chain in the port and maritime industry is a network of businesses, organizations, and individuals who work together to transport goods from the point of origin (the loading port) to the point of destination (the discharging port). When dealing with a complex supply chain system, it might be difficult to see the big picture of all the transactions happening within the chains [15]. Typically, some system operators or stakeholders have access to this data, which is stored in numerous locations. The end consumer or network stakeholder (the consignee) typically has only limited access to all data in such systems [16]. Information can be treated as a commodity for a shipping line (the supplier of the carrier service) in some instances. However, due to the limited visibility, trust is assumed exclusively among the participants in the system to guarantee the tractability of transactions. Transparency and traceability in the port supply chain may be improved by implementing BC technology. This would be possible through the immutable record of data, restricted user access, and distributed storage. All the way through the service lifecycle, the technology can provide a decentralized distributed system to gather, store, and manage crucial service information for each individual service.

APPROACH

Ports in West Africa served as a case study for the qualitative method's use. The region was selected because of its customs procedures, which are very comparable to those used in other sub regions. Extensive literature reviews were undertaken of BC technology in both established and emerging fields to identify potential application areas. Issues like the birth and death registries, customs classification, port supply chain applications, and asset monitoring are examples of recent and contentious problems in rapidly expanding areas of British Columbia. A design for a BC ready port supply chain was suggested after considering these studies, and its advantages and disadvantages were highlighted.

BC READY PORT SUPPLY CHAIN

Figure 2 depicts the intended implementation of BC within port supply chain systems. The proposed method includes a BC system that employs a decentralized, distributed technology to collect, store, and manage important cargo information for each cargo during its entire life cycle. This generates a safe and shareable record of exchange for each cargo, together with cargo-specific details. As cargo moves through its service life cycle (movement of cargo from port of loading to port of discharge and delivery to consignee), it is owned by a variety of parties including the shipper, shipping line (owners or agents of ships or vessels), customs, port authorities, terminal operators, regulatory authorities (such as the Food and Drugs Authority, Environmental Protection Agency, and Standards Authority), freight forwarders, and the final consignee (customer). Each of these stakeholders or individuals plays a crucial role in this system, recording of important data.

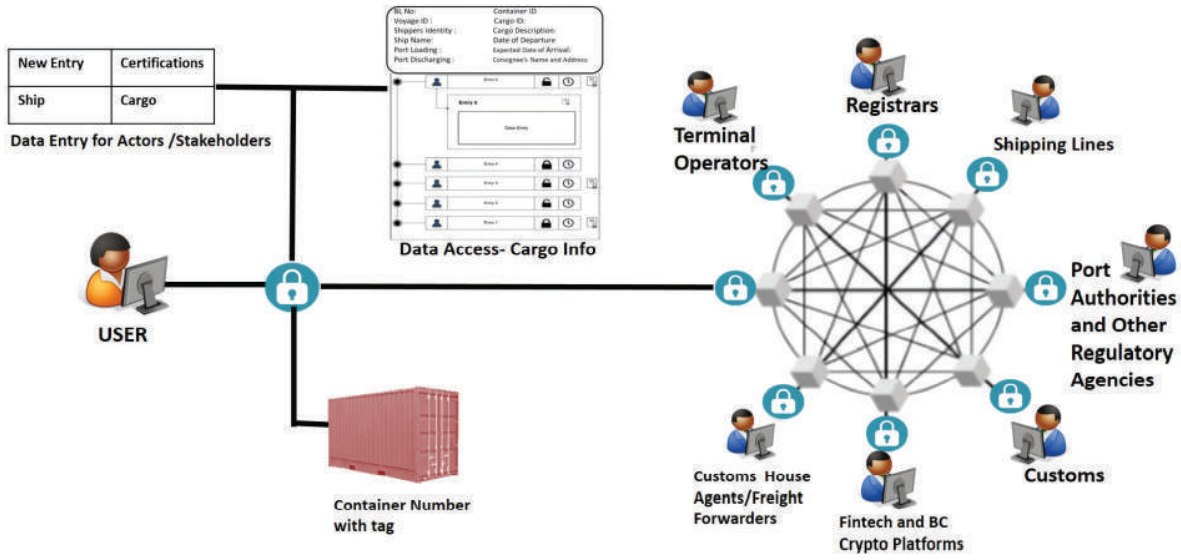


Figure 2 Overview of the proposed port BC concept.

On the BC network, information regarding the cargo and its current status (current location of the cargo, whether on terminal or ship) is uploaded. Each cargo posted on the BL would have a unique digital profile comprising all pertinent data, which would be populated at various phases of the cargo's transit. This scenario is based on the whole port logistics and transport supply chain, from the port of loading to the port of discharge, including all processes necessary to ensure cargo delivery to the consignee. Each voyage (movement of a ship from a port of loading to a port of destination) would have a unique transaction code (voyage ID), representing a unique digital cryptographic identifier that links a voyage made by a ship carrying particular cargoes to its identity on the network. In the scenario described above, it is useful to notice that containers are employed as enclosures for cargo on board a ship. These containers would also be equipped with the same digital cryptographic identity (RFIDs, barcodes, etc.) that ties the container (depending on its type: 20 or 40 feet) to its payload. It is assumed that each type of cargo in a container with a BL number has its own information tag with a manufacturer-issued unique digital cryptographic identification (RFID, barcode, or QR Code).

On the BC network, information regarding the cargo and its current status (current location of the cargo, whether on terminal or ship) is uploaded. Each cargo posted on the BL would have a unique digital profile comprising all pertinent data, which would be populated at various phases of the cargo's transit. This scenario is based on the whole port logistics and transport supply chain, from the port of loading to the port of discharge, including all processes necessary to ensure cargo delivery to the consignee. Each voyage (movement of a ship from a port of loading to a port of destination) would have a unique transaction code (voyage ID), reflecting a unique digital cryptographic identifier that ties a voyage performed by a ship carrying particular goods to its identification on the network. In the scenario described above, it is useful to notice that containers are used as enclosures for cargo on board a ship. These containers would also be equipped with the same digital cryptographic identity (RFIDs, barcodes, etc.) that ties the container (depending on its type: 20 or 40 feet) to its payload. Each cargo in a container with a BL number is considered to be a type of product having a unique digital cryptographic identifier virtual identity is provided by the system software as part of the digital profile for cargo as part of the service cycle.

Upon registering with the system, stakeholders or actors can also keep their own digital profile on the network.

This profile displays the cargo ID, cargo description, BL No., container ID, shipper's identity, ship's name, port of loading, port of discharging, date of departure, projected date of arrival, and certifications (Regulatory authorities) related to the cargo. A cargo profile that has been signed or handled by an actor (shipper, customs, regulatory agencies, etc.) will have a link to the actor's profile. The technology enables actors to modify their profile's privacy settings for different types of actors. Actors are registered on the system via a registrar with information describing their involvement in the service cycle. To build trust in the system, actors who wish to remain anonymous must, nevertheless, be confirmed by a recognized certifier or auditor. Through registration on the network by a registrar, the system provides accreditation services and a unique identifier to system participants.

Upon registration, a public and private cryptographic key pair is established for each actor. The public key is used to identify an actor within the network, whereas the private key authenticates the actor's transactions within the system. Actors can execute transactions with the network by cryptographically authenticating themselves with their private unique keys. This enables each cargo and its journey to be digitally signed by the players while being transferred from one port to another or added to the port supply chain further down the line. The categories of actors/shareholders and their assigned roles in the proposed system. This system offers each actor with a user interface to access a specific BC network. The application software can configure a specific digital profile of a cargo utilized by an actor. The system software is developed by trusted parties in the port supply chain network (such as port authorities, customs, etc.) and made available for registered organizations and stakeholders to download and run on their systems. Customized versions of the user interface would be available for consignees and customs agents to access information about a shipment with which they are linked.

The system software provides access to both existing and newly entered data. The system runs on a BC that delivers executable programmable code, such as Ethereum[17] BC. All data saved on the BC network is

accessible to anyone using the system software with the proper authorization. Nevertheless, actors' access to data would be contingent on the validity of the data. As long as these rules are written and saved on the BC system, they cannot be modified without notifying all nodes and receiving approval from relevant actors. Fairtrade or FSC, which are certification and standardization programs, may be deployed on the system. Certifiers and auditors within the network will inspect the ports and terminals for compliance with standard program regulations. Once validated by the certifiers, the certifiers and standards organization can digitally sign the actor's profile and its cargo to demonstrate their certification. The certifiers evaluate all actors to confirm their identities. The certifiers must reveal the identities of all actors to the network via a registrar.

The objective is to increase the visibility of system components while preserving the security and integrity of data kinds and places inside the port supply chain network. These rules specify how actors are to communicate, do business, and share data on the network with the system (type and position). Actors cannot alter these norms, which guarantee data integrity and are a prerequisite for data validity. As long as these rules are written and saved on the BC system, they cannot be modified without notifying all nodes and receiving approval from relevant actors. Fairtrade or FSC, which are certification and standardization programs, may be deployed on the system [18, 19]. Certifiers and auditors within the network will inspect the ports and terminals for compliance with standard program regulations. Once validated by the certifiers, the certifiers and standards organization can digitally sign the actor's profile and its cargo to demonstrate their certification.

The certifiers evaluate all actors to confirm their identities. The certifiers must reveal the identities of all actors to the network via a registrar. The objective is to increase the visibility of system components while ensuring the security and integrity of data.

APPLICATION SCENARIO (WEST AFRICA SEAPORT PROCESS)

In this chapter, we illustrate and clarify the capabilities of the suggested concept through the use of an application scenario example. The BC ready port supply chain is considered for the shipment of a containerized vehicle from a port of loading to a port of destination (port of discharging). Involved in the transportation of cargo on the high seas are a number of parties. The application of BC in this instance may be extended to various transportation supply chain networks for additional items. The scenario focuses on a segment of the port supply chain (seaport) that involves the movement of containerized cargo (vehicle) from a port of loading to a port of destination, as represented in Figure 4. Through the BC system, all of the actors in this scenario have registered with a registrar service and have been assigned a unique identity on the network, including an actor profile. The system software developed for industry participants provides an interface for them to communicate with one another. The following business processes would be involved in a containerized freight scenario that is BC-ready:

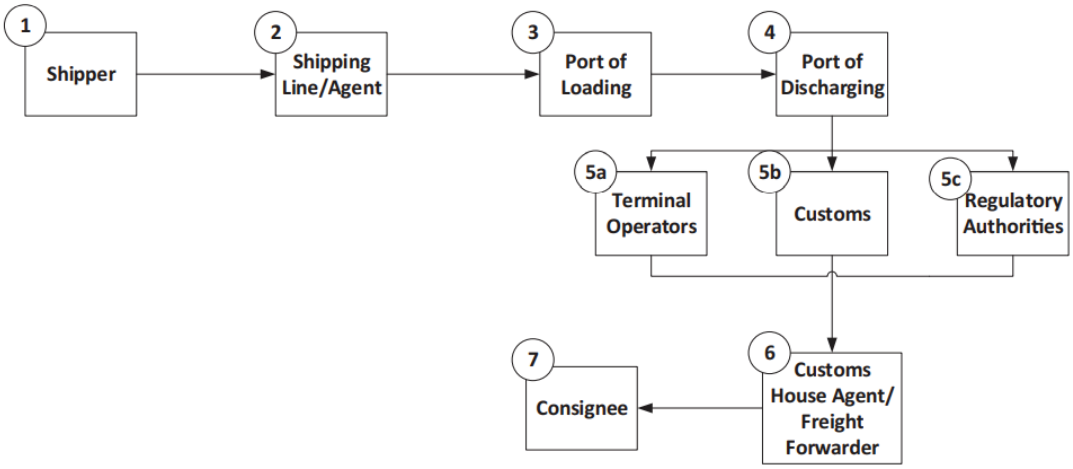


Figure 4 Port supply chain of movement of containerized vehicle from port of loading to port of discharging.

1. SHIPPER: Specific information about the vehicle being exported is entered by the shipper (type of vehicle, make, year of make, engine capacity, weight, consignee name, address and port of destination, etc.). After signing a digital contract recorded on the BC, a new trade is established between the shipper and the consignee in which cargo is swapped (data entry could be through a handheld device or a desktop computer). The registrar appoints certifiers to conduct physical checks to ensure compliance with regulations as shown on the system. The certificate is then shown alongside the digital signatures of both the certifiers and the standard bodies on the shipper's profile (regulatory authorities).

2. SHIPPING LINE/AGENT: After cargo has been transported to the terminal of the shipping line, the shipper picks a shipping line from the system and executes a digital contract with the shipper. After signing a digital contract with the port authority to undertake cargo activities, the shipping line enters more details about the cargo by specifying ship specifics, details of the container (Container Number, Weight, Size, etc.) and moves cargo to the port for loading/destination. This information is also presented on the system profiles of the port authority and shipping line.

3. PORT OF LOADING: The port assigns a specific berth and terminal(yard) to the shipping line for ship berthing and cargo stacking prior to the commencement of loading operations, respectively. This transaction is made possible after the shipping company and port authority sign a digital contract. When duties and taxes must be paid on exported cargo, the cargo is stopped in the system until payment is made and a customs officer physically verifies that the actual cargo at the yard matches the features provided, with the officer's digital signature added to the shipper's profile.

When cargo is loaded onto a ship, port tally clerks record the transfer of the goods from the yard to the ship at each stage to indicate whose equipment handled the cargo prior to its stacking. This provides time-stamped logs of all port activities. If a ship departs on time, the shipping line displays that on the system; however, if there are delays, the shipping line indicates a revised projected time of departure, and all system actors are told appropriately.

4. PORT OF DISCHARGING: Prior to a ship's arrival at the destination port, the system provides all actors with GPS capabilities with a platform to examine the ship's location and the status of each cargo on board. The destination port (port of discharging) assigns berth and yard space for the ship prior to its arrival, and the officer at the port of discharging enters this information into the cargo profile. Based on the permit level, the appointed officer records all cargo activities using a handheld device.

A. TERMINAL OPERATORS: Typically, cargo at the berth of the destination port is transferred to an off-dock terminal, where the delivery processes are carried out. Certain ports function as terminal operators. After a customs officer displays the container movement report on the cargo profile on the BC system, showing that the location of cargo has changed, cargo is moved from the destination port to a terminal yard.

The data is added to the cargo profile. Customs and Regulatory Agencies: Before the cargo may be delivered to the consignee, duties and taxes must be paid at the port of destination or the off-dock terminal. To gain a cargo release on behalf of the consignee, the customs agent performs physical actions. A built-in algorithm on the BC platform classifies goods based on the WCO classification nomenclature, and duties and taxes are automatically calculated after the shipper makes the initial entry into the system.

Similarly, taxes and other levies (penalties) to be paid by a consignee in order to comply with the required requirements are calculated using the same methods as those used for calculating duties. Certifiers validate that all standards have been met in the terminal and display a digital certificate on the profile of the cargo. These statistics also comprise the shipper's and receiver's cargo risk profile.

The approach classifies these dangers into three categories (Red-Poor, Yellow-Fair, and Green-Excellent) based on their severity. It is instructive to remember that cargo cannot be released on the system unless customs and regulatory obligations are satisfied.

B. CUSTOMS HOUSE AGENTS/FREIGHT FORWARDERS: A customs house agent or freight for warder facilitates the flow of cargo from the location of the shipper to the terminal (port of loading or port of discharging). Similarly, the customs house agent or the freight forwarder facilitates the delivery of cargo from the discharging port to the consignee. These practices, in which agents facilitate import and export processes for consignees, are widespread in the majority of African seaports and are typically codified in the customs legislation.

In this manner, a customs house agent utilizes a private key to enter the system once the consignee and the customs house agent have signed a digital contract. This contract grants the customs agent the authority to facilitate all import and export processes for cargo. In ports where customs house agents are not involved in the supply chain network, the consignee conducts these transactions directly with the shipping lines, customs, regulatory authorities, and terminal operators.

C. CONSIGNEE: The consignee can visit the platform at any time to determine the status of cargo transactions. For example, the number of releases made, pending releases, duties and taxes paid, port handling fees, cargo turnaround time, and all cargo-specific historical data. The consignee receives shipment from the customs house agent and marks shipment receipt by updating the shipment's profile in the system. A built-in Fintech and crypto BC platform will enable the execution of financial transactions without the need for intermediaries.

CONCLUSIONS AND RECOMMENDATIONS

The suggested system will permit the collection of voluminous data regarding cargo and its participants in the port supply chain network, which can prove advantageous to a variety of stakeholders (government, organizations, investors, producers, retailers, shipping lines, consignees etc.) This enables consignees (consumers) to immediately access precise data relevant to any cargo that has been transported via a BC-enabled port supply chain, enabling them to make more informed shipment decisions. Companies engaged in design, production, and manufacturing can have a better understanding of how their products are bundled and transported around the seaport supply chain.

This level of input can be utilized to enhance the company's production, marketing, and technological strategy. Large ports and maritime originations would be required to advocate for the potential benefits of the proposed port supply chain systems. Some may be initially resistant to characteristics such as cargo lead times, transparency, and automated payments (digital currencies), as these are occasionally exploited as corporate leverage. However, the experience with digital currencies and large financial institutions demonstrates that large industrial and political entities will recognize the technology's potential and strive to remain neutral towards it

DR. DAVID KING BOISON (PHD)
Senior Lecturer and Head of Department
(Procurement, Logistics and Supply Chain Management)
Ghana Communication and Technology
Former IT Head at Ghana Ports and Harbours Authority

DID YOU KNOW?

- **Did you know that Ghana once owned a national shipping line, the Black star line, which had about 18 ships with names such as the Volta River, Keta, Tano and Sissili?**
- **Did you know without shipping half of the world's population would starve to death whilst the other half freezes to death?**
- **Did you know the minimum age at which a Ghanaian can be employed on a ship is 16 years?**
- **Did you know the largest container ships are 400 meters long *(the length of 4 standard football pitches joined together)* and can carry up to 20,000 containers?**
- **Did you know that with the completion of phase 1 of the MPS Terminal, the Tema Port is currently the biggest port, in terms of capacity, in West and Central Africa?**

Source: *Ghana Maritime Bulletin '20*

GHANA MARITIME AUTHORITY

Regulating the Maritime Industry

- Ensure safety of navigation
- Ensure maritime and ports security
- Protect marine environment from marine source pollution
- Ensure efficient shipping service
- Promote Ghana's ship register
- Regulate training, certification and recruitment of seafarers

8th Road, East Ridge - Accra. PMB 34 Ministries Post Office, Accra.
Tel: +233 21 684392, 662122 Email:info@ghanamaritime.org Website:www.ghanamaritime,org

THE BIG DATA CONCEPT

BY
JOSEPHINE AHULU

phinnahulu@yahoo.com
+233244305236

INTRODUCTION

Enormous amounts of data are generated at high speeds by a variety of sources such as mobile devices, social media, machine logs, and multiple sensors surrounding us. All around the world, we produce vast amount of data, and the volume of generated data is growing exponentially at an unprecedented rate. The pace of data generation is even being accelerated by the growth of new technologies and paradigms such as Internet of Things (IoT).

Big data is a blanket term for the non-traditional strategies and technologies needed to gather, organize, process, and gather insights from large datasets. While the problem of working with data that exceeds the computing power or storage of a single computer is not new, the pervasiveness, scale, and value of this type of computing has greatly expanded in recent years.

WHAT IS BIG DATA?

It is difficult to give an exact definition of "big data" as it is used differently in projects, by vendors, practitioners, and business professionals. With that in mind, big data can be said to be basically, large datasets.
The definition of big data is hidden in the dimensions of the data.

Data sets are considered "big data" if they have a high degree of the following three distinct dimensions: volume, velocity, and variety. Value and veracity are two other "V" dimensions that have been added to the big data literature in recent years. Additional Vs are frequently proposed, but these five Vs are widely accepted by the community and can be described as follows:

1. Velocity: the speed at which the data is been generated.

2. Volume: the amount of the data that is been generated.

3. Variety: the diversity or different types of the data.

4. Value: the worth of the data or the value it has.

5. Veracity: the quality, accuracy, or trustworthiness of the data.

Organizations deploy a new approach and tools in analytical aspects to overcome the complexity and massiveness of different types of data (structured, semi structured, and unstructured).

So, a sophisticated technique that aims to cope with the complexity of big data by analysing a huge volume of data is required to support organizations in innovation, productivity, and competition.

Big data analytics has been defined as techniques that are deployed to uncover hidden patterns and bring insight into interesting relations in understanding contexts by

examining, processing, discovering, and exhibiting the result.

Complexity reduction and handling cognitive burden in knowledge-based society create a path toward gaining advantages of big data analytics. Also, the most vital feature that led big data analytics toward success is feature identification. This means that the crucial features that have important affection on results should be defined.

In Ghana today, Big Data in organizations is an untapped resource despite its numerous benefits. Many organizations in different industries still struggle to reap the benefits of big data. The generation of huge data from different sources such as tablets, smartphones, sensors and the Internet have led to an overwhelming growth of unstructured data difficult to process with traditional technologies.

Many organizations have struggled to turn this data into information that guides decisions more effectively. On that note, big data is considered more a challenge than an opportunity for most business sectors as they fail to tap into its promised potential value. However, it is very important for organizations to manage big data effectively to get the benefits which are not always obvious.

CONCLUSION

Big data is a broad, rapidly evolving topic. While it is not well-suited for all types of computing, many organizations are turning to big data for certain types of workloads and using it to supplement their existing analysis and business tools.

Big data systems are uniquely suited for surfacing difficult-to-detect patterns and providing insight into behaviours that are impossible to find through conventional means.

By correctly implement systems that deal with big data, organizations can gain incredible value from data that is already available.

BRING YOUR OWN DEVICE

A PERSPECTIVE FROM THE PORTS AND MARITIME INDUSTRY IN GHANA

BY

DR. AUGUSTINE BLAY

blay.augustine@gmail.com
+233542823140

INTRODUCTION

The current research looked into what makes Ghanaian workers more or less likely to take part in a BYOD initiative. Bring-your-own-device (BYOD) initiatives are policies that allow workers to use their own mobile phones, tablets, computers, and other consumer electronics for company business (Gupta, Bhardwaj, & Singh, 2019). Iovan and Ivănuş (2018) found that businesses that allow employees to use their own devices for work had gains in operational efficiency, reduced costs, increased responsiveness, and increased competitiveness.

During the COVID-19 pandemic, most firms closed their doors and allowed workers to work from home using personal devices to decrease the risk of exposure to the virus while maintaining company continuity (Davison, 2020; Richter, 2020). While nations recover from the COVID-19 epidemic, businesses are making BYOD a common practice in the workplace in order to keep the built-in cost savings and continue the elevated employee productivity advantages (Floetgen et al., 2021; Scott et al., 2021). When employees are allowed to use their own devices to gain access to company resources, they are said to be working in a "bring your own device" (BYOD) environment (AKiah, M. Palanisamy, 2019).

Employees' willingness to participate in BYOD programs is negatively impacted by a number of problems (Gökçe, K. G., & Dogerlioglu, 2019). Employees have stated that they are expected to respond immediately, no matter the time or location, to inquiries from customers, coworkers, and superiors (Gökçe & Dogerlioglu, 2019). A number of employees voiced reservations about connecting their personal mobile devices to the company network due to privacy and security concerns. Due to privacy and security measures, workers could not use their personal gadgets to their full potential (Weidman, J., & Grossklags, 2017). Workers lost faith in management's ability to keep control when inquiries found private information they were not yet willing to discuss in the event of a company-wide examination (Ratchford, M., Wang, P., & Sbeit, 2017). Employees' BYOD adoption is being stymied by growing levels of anxiety over the practice (Chen et al., 2020).

The port and maritime economy seaports are vital to the economies of the nations in which they are situated (Ho et al., 2018). Eighty percent of the world's trade occurs on the water, while more than seventy percent occurs on land (UNCTAD, 2021). Growing globalization has boosted competition in the movement of commodities between seaports, resulting in a dramatic increase in the number of vessels operating through various seaports using a range of transport modes (Zeng et al., 2019). The maritime and port sectors play a vital role in the facilitation of trade as well as the development of value and wealth. Previous studies on bring-your-own-device (BYOD) adoption focused on businesses, employees, and consumer markets, respectively (Akin-adetoro, 2021; Klesel et al., 2018).

From the standpoint of enterprises, the research focused on control frameworks and the benefits of bring-your-own-device rules. These governance frameworks oversee how devices used by employees connect to the organization's network, as well as the risks and cyber security attacks posed by employees' personal devices (Aguboshim & Udobi, 2019; Chen, Het al., 2020; Koesyairy, 2019). The research conducted on bring-your-own-device (BYOD) adoption assessed how employees felt about the practice in relation to the possible risks it posed.

There was a paucity of empirical study on the factors that influenced employees' inclination to participate in BYOD notably in the maritime and ports sector, given the significant contribution of the maritime and port sector to the economies of most countries

around the globe (Zhang et al., 2019; Ho et al., 2018). Comparable studies assessed the participants' BYOD intentions in Ghana using UTAUT2 as the theoretical framework focused on students and not employees from diverse economic sectors (Wang et al., 2017; Weeger et al., 2018). To fill this specific theoretical and empirical gap in the study, we ask the following overarching question: "What factors influence maritime and port users' behavioral intention to enroll in a BYOD program?".

From this perspective, the following contributions are made to previously published research: As a first step, the UTAUT2 theoretical framework is adapted to the maritime and port industry in order to gain a knowledge of the unique features that influence port users' willingness to participate in a BYOD program, which is currently absent from the relevant body of research. Second, we present empirical evidence about the six predictors of UTAUT2 and their contributions to BYOD adoption in Ghana, particularly in the maritime and port perspectives. This is done with the purpose of fostering dialogues among industry participants regarding the major determinants of BYOD adoption. Thirdly, from a maritime and port perspective, we contribute to the UTAUT2 theoretical framework.

This paradigm is appropriate for the adoption of new technologies because its forecast accuracy is 70 percent, which is much greater than other technology adoption theories (V. Venkatesh, 2012). In addition, Crawford (2020) says that over 5,000 articles analyzed by specialists in the field utilized UTAUT2 as a theoretical framework to explain the factors that influence the adoption of new technologies. The remaining portions of the paper are divided into the following sections: In Section 2, a survey of pertinent literature and a theoretical foundation are provided. In Section 3, the research approach, data collection procedures, and analysis processes are detailed. In the 4th segment, the findings will be provided and discussed, and the 5th section will explore and describe the recommendations, along with their practical and policy implications. This section concludes with a summary of the paper's findings, a discussion of the study's limitations, and a discussion of prospective future research directions.

LITERATURE

Employees now use mobile smartphones and other network-capable technology on a daily basis (Krumm, 2018). These devices are ubiquitous in the homes, workplaces, and social environments of employees (Lee et al., 2016). During the global COVID-19 epidemic, businesses lacked a BYOD policy that allowed employees to complete work-related tasks with their own devices (Bonacini et al., 2020). In previous research on BYOD acceptance in the workplace, both company and employee viewpoints were considered (AkinAdetoro & Kabanda, 2021; Klesel et al., 2019).

The literature focused on governance structures and the corporate benefits of BYOD. These governance frameworks regulate how employees connect their own devices to the organization's network and protect against data breaches and cyber threats (Aguboshim & Udobi, 2019; Koesyairy et al., 2019). In addition, independent constructions indicate a connection based on the predictability of the UTAUT2.

In the studies conducted by Tamilmani et al. (2020), performance expectancy (PE) was determined to be the most accurate predictor of behavioral intention (BI). In addition, the researchers discovered that effort expectancy (EE) was the second best predictor of BI. Again, Wang et al. (2017) discovered that the impact of social influence (SI) on BI varied between Americans and Germans. As a result of their emotional connection to the group, individuals of collective cultures place a greater emphasis on their personal brand within the community. It was determined that BI was significantly affected by facilitating conditions (FC) and that this had a direct effect on employees' attitudes (Ouattara, 2017; Dwivedi et al., 2017) hedonic motivation (HM) and Habit (HT) predicted employees' BI to use technology in Ontario, Canada (Ouattara, 2017).

Moreover, Price Value (PV) was less significant for employees whose daily activities were well-aligned with technology (Tamilmani et al., 2020). Contradictory results were reported for the moderating effect of age, as previous research demonstrated that citizens' ages greatly affected their behavioral intention to use e-government services (Munyoka and Maharaj, 2017). Nikolopoulou et al. (2020) showed no statistical difference between age groups in the adoption of personal mobile devices in educational settings.

Over the past few decades, research on technology adaptation has produced a variety of theories and models to clarify and identify the elements that drive the adoption of new technologies. This collection of theories includes Theories of Reasoned Actions, Innovation Diffusion Theory, Planned Behavior, Decomposed Theory of Planned Behavior, Theory of Innovation Resistance, Perceived Characteristics of Innovation (PCI), Theory of Perceived Risk, and Unified Theory of Acceptance and Use of Technology

(UTAUT). The UTAUT theoretical framework was chosen since it explains 70% of the variance in BI and around 50% of the variance in consumption (Crawford, 2020). The UTAUT2 theoretical framework served as the foundation for this study. As an expansion of the original UTAUT paradigm, UTAUT2 contains eight new overlapping concepts regarding technology adoption. The Theory of Reasoned Action, the Theory of Planned Behavior, the Theory of Technology Acceptance Model, the Model of Personal Computer Use, the Motivational Model, and the Innovation Diffusion Theory (Venkatesh et al., 2012). Venkatesh et al., (2012) extended UTAUT2 to account for the influence of social impact, hedonic advantages, end-user experience, and age on people's technology adoption behavior in enterprises.

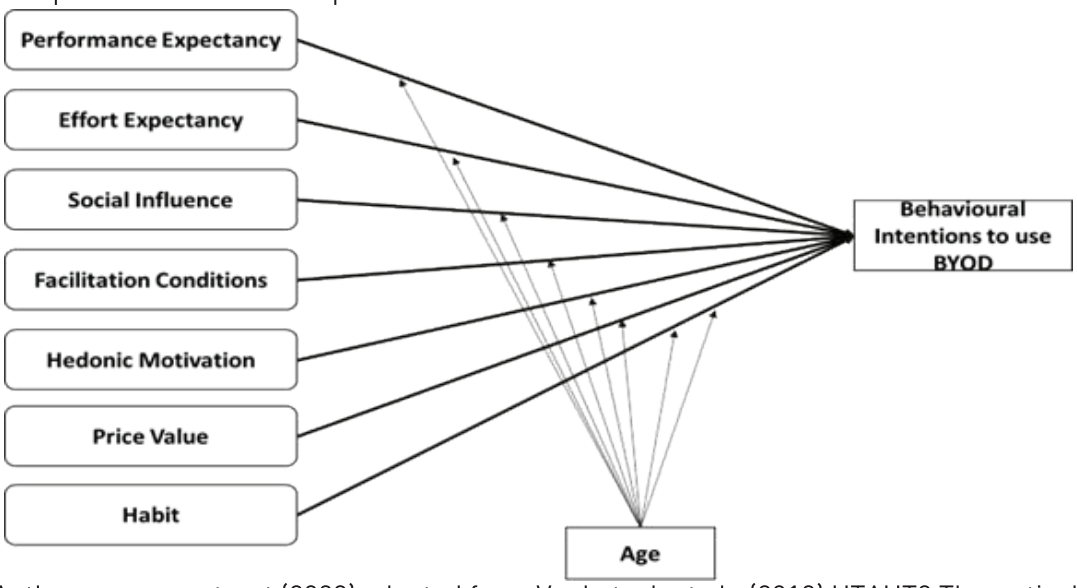


Figure 1: Authors own construct (2022) adapted from Venkatesh et al., (2012) UTAUT2 Theoretical Framework

Construct	Operational Definition	Hypotheses
Performance Expectancy (PE)	Defined by Wang et al. (2017) as "the usage of new technology by individuals because of the perceived benefits of technology.	Ha_1, PE has a beneficial effect on the BYOD participation of marine and port users.
Effort Expectancy (EE)	Venkatesh (2012) defines EE as the degree of ease of use of a technology system	Ha_2, EE influences the willingness of maritime and port users to participate in the BYOD Program
Social Influence (SI)	Defined by Venkatesh et al. (2003) as the extent to which individuals think that significant others in their lives expect them to utilize the new technology.	Ha_3, SI significantly influences BYOD Program participation among maritime and port users
Facilitating Conditions (FC)	Defined by Venkatesh et al. (2003) as the degree to which individuals perceive the presence of organizational and technical infrastructure to facilitate utilization of the technology system	Ha_4, FC promotes maritime and port user participation in the BYOD program positively.
Hedonic Motivation (HM)	HM is the degree of pleasure or enjoyment caused by the use of technology and is essential for determining the pace of technology adoption (Venkatesh et al. 2012)	Ha_5, HM positively influences BI of maritime and port users to participate on BYOD Program
Price Value (PV)	PV is the perceived tradeoff between new technology and the cost of adopting that technology	Ha_6, PV positively influences BI of maritime and port users to participate on BYOD Program
Habit (HT)	HT is behavior thought to be repetitive because of repeated activities over time	Ha_7, positively influences BI of maritime and port users to participate on BYOD Program.
Moderating effect of Age	The age range of Ghanaian maritime and port personnel is between 18 and 64 years old (Adeniran et al., 2019)	Ha_8: the independent constructs (PE, EE, SI, FC, HM, PV and HT) strongly influence BI of maritime and port users to join in BYOD Program, mediated by Age.

Source: Authors own Construct (2022)

APPROACH

This study used a correlational research approach to investigate the factors that influence marine and port users' propensity to join in BYOD initiatives. The survey instrument created by Venkatesh et al. (2012), which utilized a 7-point Likert scale to obtain data from participants, was utilized in the present investigation. Seven-point Likert scales were necessary for Structural Equation Modelling (Bhardwaj et al., 2021). Respondents could access the survey instrument through a third-party data collection site (googleforms). We utilized Google Forms to end the survey automatically for respondents who did not fulfill the inclusion requirements based on their responses to certain questions. The target demographic of the study comprised of maritime and port users aged 18 to 64.

According to Omondi (2020), eighty percent of the adult population possesses at least one mobile device; accordingly, it was projected that eighty percent of the 2,584,625 adults will comprise the study's population. At a significance level of 5%, a sample size of 410 was recruited from the target population (Doná, 2006). Gob et al. (2007) measured respondents' value judgment based on their attitudes, opinions, and viewpoints on the statements in that section using a Likert-type scale. Principal Component Analysis (PCA) in Statistical Package for the Social Sciences (SPSS) version 23 and Structural Equation Modelling(SEM) in Stata version17 were used to evaluate the gathered data.

FINDINGS AND DISCUSSIONS

All 401 participants with unresolved questions contributed to the study by providing feedback. 28.7% of the 401 survey respondents were female, while 71.3% were male, indicating that males are more prevalent than females in the maritime and ports industry. The age group between 25 and 34 years old had the highest percentage (61.9%), showing that the maritime and port sample population is predominantly young. 14.3 percent of respondents had a high school diploma, 13.5 percent had no certificate, 12.8 percent had a bachelor's degree, 12.3 percent had a master's degree, 11.3 percent had a PhD, and 9.5 percent had a professional certificate.

According to these data, despite the technical character of the industry, which demands specialist knowledge, the maritime and port sector has seen a considerable increase in schooling. The degree to which participants agreed or disagreed with the statement was also considered when evaluating the responses (1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, and Strongly Agree-5). The weighted mean score for all dimensions was 4, indicating that all participants were pleased with their performance. The standard deviation represents the degree of dispersion among the responses of the participants. According to the findings, there were several reactions. In general, the majority of responses exhibit some degree of precision in measuring constructs, which is an encouraging sign for the data description.

MEASUREMENT OF CONSTRUCTS

Based on a weighted average Bartlett's test of sphericity score of 0.01 (Sig ← 0.05) and a weighted average KMO score of 0.758%, the sample is eligible for factor analysis. According to Hair et al. (2014), the factor loading score of each component was larger than 0.70. Except for SI and PV, all factor loadings in the component matrix are over the threshold, with the exception of SI and PV. The research revealed twenty-five factors with a cumulative variance explained value of 82,686%, indicating that the variables account for a larger part of the variance.

Table 1: Measurement of Constructs

Constructs	KMO	Bartletts Test of Sphericity	Total Variance Explained	AVE	Composite Reliability	Cronbach Alpha	Factor Loadings
PE	0.839	0.001	78.708	0.624	0.868	0.909	0.787
EE	0.858	0.001	86.099	0.741	0.920	0.946	0.861
FC	0.762	0.001	66.233	0.778	0.913	0.933	0.882
HM	0.500	0.001	92.848	0.619	0.765	0.923	0.964
HT	0.815	0.001	81.259	0.886	0.661	0.923	0.813
BI	0.774	0.001	90.966	0.935	0.828	0.950	0.910
Weighted Average	**0.758**	**0.001**	**82.686**	**0.764**	**0.826**	**0.931**	**0.870**

Source: Field Data (2022)

RachansLogistics

..International freight forwarding

Rachans Logistics is a wholly owned Ghanaian company that offers origin and destination services for its clients, serving destinations all over the globe. Rachans Logistics Ltd was incorporated in 2011 and has its Head Office in Tema. Rachans is one of Ghana's leading specialist logistics providers, offering complete, personal and trustworthy solutions to the broadest range of supply chain issues. We provide services to land locked countries in West Africa such as Burkina Faso, Mali and Niger etc. Our objective is to ensure we deliver safely to the door of our clients in the same condition as received. We also make it our target to minimize cost, avoid delays and damages. We understand that logistics business is critical and are constantly challenging conventions and methods to improve our business performance in order to satisfy our clients. Our services:

- Custom Brokerage
- Air Freight
- Sea Freight
- Land Transportation
- Household Removal
- Project & Bulk Cargo

Coverage:

- Ghana
- Togo
- Mali
- Niger
- Burkina Faso
- Cote D ' Ivoire

RachansLogistics
International freight forwarding
Fast - Efficient - Reliable

GLA GLOBAL LOGISTICS ALLIANCE

"We Deliver "

Contact Us

Visit our Head Office
First Floor, Aba Fosua Plaza, Rotary Avenue.
Community 5, Tema-Ghana

Office line: (+233) 0303-217747
Mobile: (+233) 020 7578700

Email: rachans.logistics@gmail.com
Website:www.rachanslogistics.com

Construct validity was assessed using both convergent and discriminant validity. The weighted Average variance extracted (AVE) score of 0.764 exceeded the Fornell, C., & Larcker, (1981) threshold of 0.5, confirming convergence validity. The weighted Composite Reliability (CR) score of 0.826 also showed the internal consistency of the 25 items used to generate the CR scores. According to Fornell and Larcker (1981), a CR score above 0.70 implies convergence validity. This rule was not broken.

GOODNESS IF FIX INDICES

The Root Mean Square Error of Approximation (RMSEA) = 0.082 (acceptable fitness level), Comparative Fit Index (CFI) = 0.95 (optimal fitness level), and Tucker-Lewis Index (TLI) =0.95. (ideal level of fitness). Indexes of goodness of fit quantify the extent to which the data correlate to the model. According to Hair et al., the SEM route analysis undertaken revealed no breaches of fix index limits (2014).

HYPOTHESIZED MODEL TEST RESULTS

The structural equation model demonstrated that the hypothesized constructs, including PE (P= 0.20, sign ← 0.001), EE (P = 0.24, sign ← 0.001), FC (P = 0.10, sign ← 0.001), and HT (P= 0.61, sign ← 0.001), have a substantial positive influence on the BI of employees to participate in the BYOD program. SI, HM, and PV failed to explain and forecast the employees' BI to join in the BYOD program. Age did not moderate the prediction as predicted initially. The link between the predictors and the endogenous variable was unaffected by age BI.

CONCLUSIONS AND RECOMMENDATION

The findings indicate that a 20% rise in BI is associated with a 20% change in PE, demonstrating that PE predicted or explained BI at 0.20. PE was found to be the third largest predictor of BI among maritime and port users' BI to join in a BYOD program in this study. This result is consistent with the findings of Tamilmani et al. (2020) and Weeger et al. (2018), who found that PE is the best predictor of BI. According to Niehaves et al. (2012) and Wang et al. (2017), employees utilize technology when there is a good task-to-device match. The authors continued by asserting that technology enhanced organizational productivity and employee performance.

The BI of port users to participate in a BYOD program was shown to be most highly predicted by HT, which contributed 61% of the variance. Previous research has demonstrated that HT predicts BI. According to Hu et al. (2020), HT had a significant impact on the BI of academics at work. Similar findings were reported by Nikolopoulou et al. (2020), who discovered that adopting and utilizing mobile internet had a positive effect on instructors' real use of technology. In this study's research of the predictability of HT on BI, the construct is evaluated as the most accurate predictor of BI (61%).

Consequently, BYOD program users who work in maritime and port sectors are more likely to participate in the program and maintain this habit over time (Kim et al., 2005; Limayem et al., 2007). The next strongest predictor of BI was EE, which contributed 24% and ranked third. In their respective studies, Tamilmani et al. (2020) and Weeger et al. (2018) found that EE was the second strongest predictor of BI; however, the present analysis ranked EE third. Wang et al. (2017) discovered conflicting evidence that EE associated with technology use negatively influences PE and task completion efficiency. FC contributed 10% to BI and served as the least accurate predictor of BI (Dwivedi et al., 2017; Ouattara, 2017). Similar to the findings of our study, these data indicate that FC directly impacted employees' attitudes and substantially influenced their propensity to use technology.

The likelihood of maritime and port users to participate in a BYOD program could not be accurately predicted by any of the three predictors (SI, HM, or PV). The study that has been done thus far suggests that regardless of a person's native culture, the effect of effort anticipation and social influence on a person's social intelligence may be significantly dependent on the setting in which the interaction takes place (Wang et al., 2017). Since Venkatesh et al. (2003) argued that in voluntary conditions, SI may not significantly alter intention, the effect of SI on BI was inconclusive. Their analysis showed that SI had the second-greatest influence on BI's decision to participate in a BYOD program in certain cultures; therefore, its unpredictability in this study may be due to the fact that it was one of the factors they examined.

According to previous research (Ouattara, 2017), HM correctly predicted the BI of employees in Ontario, Canada to use technology. Even though employees were required to establish satisfaction, which is more important, and induce some fun in conducting a specified task on a technology that is easier to use than on a system that is difficult to use, HM was initially conceived of as a predictor of BI by Venkatesh et al. (2012). This was the case despite the fact that HM was initially conceived of as a predictor of BI. The findings of this study were inconsistent, leading the researchers to conclude that HM was unable to accurately predict the percentage of maritime and port users who would sign up for a BYOD program in

that sector of the economy. The value of PV followed the same pattern as HM, which was unable to accurately predict BI. According to the findings of Blut et al. (2022), the effect of PV was significantly less significant for employees who were imaginative and early adopters and who used the most recent consumer market equipment than it was for employees who were laggards. On the basis of the research that were available, it was not possible for PV to explain or anticipate the BI of maritime and port customers to participate in a BYOD program.

Another issue that was noticed was that age did not seem to have any moderating effect on any of the expected independent variables when it came to predicting BI. The research conducted by Nordhoff et al. (2020), who found a modest negative effect of new technology adoption on BI, made it abundantly clear that age does not have a moderating influence on BI.

In a study that was carried out by Munyoka and Maharaj (2017), the researchers came to the seemingly conflicting conclusion that the participants' ages had a significant impact on their BI to adopt e-government services. Chang et al. (2019) conducted a series of tests in which they observed that age had an effect on the connections between EE, SI, HM, and BI. Because this study did not find a moderating effect of Age, it is safe to assume that Age does not have the ability to moderate the extent to which PE, EE, SI, FC, HM, PV, and HT predict maritime and port users BI's likelihood of enrolling in a BYOD program in that sector.

1. PRACTICAL IMPLICATIONS FOR THEORY AND PRACTICE

The theoretical and practical significance of this paper are related to the study needs that were stated in the previous section. It was common knowledge that the vast majority of research on bring-your-own-device had been carried out in fields apart from the maritime and port industries. The researcher conducted a study of the relevant literature, and found that none of the studies had focused on the broad adoption of BYOD among working class people in the age range of 18 to 64 in the maritime and ports industry. In addition, none of the research had made use of the UTAUT2 in order to gain an understanding of the Ghanaian instance in terms of the marine and port consumers that are involved in that business. When viewed from these vantage points, it was clear that there were theoretical, empirical, and methodological gaps in the existing research. This study offers some theoretical insight into the UTAUT2 paradigm, focusing on how it applies to users of marine and port facilities in Ghana. As a direct result of this, the operational model that includes all four elements (PE, EE, FC, and HT) has developed into the key predictors of BI in the maritime and port industries. Academics now have a road map for adopting this methodology in other jurisdictions as a result of this. The empirical findings of the current study relate to the ongoing debate surrounding the implementation of BYOD in the subregion in the wake of the COVID19 epidemic.

2. RECOMMENDATION AND LIMITATION OF THE STUDY

BYOD providers, governments, and maritime and port stakeholders have a larger market to facilitate trade and generate wealth; as a result, the provision of BYOD infrastructure to facilitate BYOD adoption is essential. This is because the maritime and port sector is important to the economies of most nations.

This is crucial since the outcomes of this study were unable to account for favorable conditions as a predictor of behavioral intention to adopt BYOD among marine and port users. In order to foster the expansion of BYOD services throughout the industry, the Ghanaian Maritime and Ports Authority ought to investigate the possibility of formulating BYOD policies that are both one-of-a-kind and adaptable.

To encourage stakeholders in the maritime and port industries to adopt BYOD initiatives, BYOD service providers in these industries should improve their offers. The inclusion criteria for this study were for participants to be Ghanaians who were either employed in the maritime or port industry or were between the ages of 18 and 64.

Those who have already participated in one or more BYOD programs while being temporarily based outside of the maritime and ports industry are unable to join, as was previously mentioned. In the future, researchers can extend the scope of the study to include additional facets of Ghanaian society in order to gain a deeper comprehension of the factors that play a role in determining the rate of BYOD adoption.

www.nia.gov.gh

One Nation
One Ghana Card

Get your Ghana Card NOW!

Register at your Workplace

- **Minimum of 50 applicants aged 15+ years**
- **Fee of GHC 100 per applicant**
- **Logistical charges**

Registration requirements include

- Either a Valid Passport or Birth Certificate
- Evidence of acquired citizenship such as Naturalization or Registration Certificates
- Ghana Post Digital Address

For more details, Call **055 0788 810** or
Email **mobileregistration@nia.gov.gh**

GOVERNMENT OF GHANA

NATIONAL IDENTIFICATION AUTHORITY

nia.gov.gh | nia.gov.gh | niagovgh | 0302 738 333 / 0242 438 615

BRIDGING THE GAP BETWEEN ACADEMIA AND INDUSTRY

KNOWLEDGE WEB CENTER

CONSULTING PARTNER TO THE GIFF RESEARCH HUB

GIFFACADEMY

Provides You With The Following

- Proficiency Certificate In Freight Forwarding
- International Diploma In Freight Forwarding
- Fiata Higher Diploma In Supply Chain Management

giff
GHANA INSTITUTE OF FREIGHT FORWARDERS

2022 ADMISSION IN PROGRESS

TEMA | KIA | TAKORADI | ELUBO | AFLAO

TELEPHONE

024 989 5278 | 020 020 4098

EMAIL

education@ghanafreightforwarders.org

APPLY NOW!

FIATA WORLD CONGRESS 2022 BUSAN

11-16 September 2022
Busan, Republic of Korea

Uniting for Global Solutions

All set to welcome you again!

Check the information at FIATA2022.or.kr

The International Federation of Freight Forwarders Association(FIATA), with the Korea International Freight Forwarders Association(KIFFA), is pleased to announce that the FIATA World Congress 2022 will take place in Busan, Republic of Korea from 11 to 16 September 2022.

Why **Busan** Republic of Korea

Marine Capital City, Busan

1) Historical

Busan was the capital city during the Korean War, where most heritage of the modern history of Korea remain. Busan Modern History Museum and UN Peace Memorial Hall are a couple of must-see attractions.

2) Beautiful

Nature Beautiful Nature: Busan has the ocean, mountains, rivers, and hot springs so you can find the beauty and wonder of nature. While walking along Galmaetgil in Busan, for example, you can encounter beauty in each corner.

3) Seaside Advantage

The special features of Busan, as a maritime city, are the beaches, ports, and coastal cliffs. Well known places are Haeundae Beach which is registered in the Guinness Book, Haedong Yonggungsa temple situated on the cliff and Igidae Skywalk.
Busan is famous for maritime leisure, but you can also experience baseball games, temple stays, and traditional Korean culture.

DESIGNED AND PRINTED BY
GEMax INNOVATIONS
0540589906 / 0547157105

ISSN 2955-7836
9 772955 783000