The governance structure and its impact on port performance: a case of Port of Tema, Ghana

Malik Adams

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THE GOVERNANCE STRUCTURE AND ITS IMPACT ON PORT PERFORMANCE: A CASE OF PORT OF TEMA, GHANA

MALIK ADAMS
GHANA

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the reward of the degree of

MASTER OF SCIENCE
in
MARITIME AFFAIRS

PORT MANAGEMENT

2021

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Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature):

..............................................

(Date): 21/09/2021

Supervised by: **Professor Dong-Wook Song**

Supervisor’s affiliation......
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Abstract

Title of Dissertation: The Governance Structure and its Impact On Port Performance: A Case of Port of Tema, Ghana
Degree: Master of Science

The emergence of COVID-19 pandemic has once again highlighted the key role seaports play in facilitating global economic growth and development. With over 90% and 70% of the world’s cargo trade in terms of volume and value respectively being handled by seaports (UNCTAD, 2014 cited in Song et al; 2018, Yang et al., 2019, Doumbia-Henry, 2020), it is safe to argue that every feasible effort ought to be made by both governments and private interests in advancing the positive performance of seaports through superior management skills and time tested governance models albeit taking into consideration the peculiarity of the region or country where the port is situated. This dissertation is a study of Port governance structure and its impact on port performance. The port of Tema is Ghana’s largest port that handles almost all container imports and exports into and out of the country. The economy of Ghana relies very much on the performance of the port because Ghana is largely an import-driven country with considerable amounts of revenue proceeds emanating from the port. In trying to understand the impact of the port’s governance structure on performance, this work considered two regimes. Thus when the port was wholly Government--Public Service Port and when the container handling business was handed over to a private entity to operate through some performance indicators which are discussed in subsequent chapters. Data was sourced from the port authority, Meridian Port Services and other relevant agencies. A case study quantitative method was employed. The analysis of these seven key performance indicators has revealed that changing the governance structure from a public service port where the port authority was wholly responsible for both regulatory and operational management and functions of the port has had a positive impact on the port. For instance, in the case of the average number of moves per vessel, MPS was able to improve on same with a cumulative increment of 225% which is very impressive by all accounts.
KEYWORDS: Ports, Governance, Performance, Privatization, Corporate Governance, Governance Model, Port Authority, Container Terminal.
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Chapter 1. Introduction:

1.1 Background

The emergence of COVID-19 pandemic has once again highlighted the key role seaports play in facilitating global economic growth and development. With over 90% and 70% of the world’s cargo trade in terms of volume and value respectively being handled by seaports (UNCTAD, 2014 cited in Song et al; 2018, Yang et al., 2019, Doumbia-Henry, 2020), it is safe to argue that every feasible effort ought to be made in advancing the positive performance of seaports through superior management skills and time tested governance models albeit taking into consideration the peculiarity of the region or country where the port is situated. It is important to point out that seaports serve as vital conduit in the overall international trade front and therefore its level of performance determines, to a large degree, a country’s international competitiveness.

As the interface between the country and its international partners, ports do not only support the economic activities of the coastal enclaves, they also serve as important bridge between the coastal areas and the country’s hinterlands and foreland’s economic development. An important role also played by ports is their social function effort through the provision of sustainable jobs for the cohesion of societal stability because jobs are very critical to the peace and stability of any society.

Consequently, to achieve this, a nation needs to fashion out a strategic competitive mechanism to fit within the international market ecosystem. In the case of Ghana, about 65% of government’s internally generated tax revenues are derived from the ports through the local and transit imports levies into the country (Ofori-Atta, 2021). Competing for market share from neighboring West African landlocked countries of Burkina Faso, Niger and Mali with Abidjan, Lomé and Dakar Ports has been a very strong driving force for the Port Authority’s financial performance and the urge to continuously improve in order not to lose the transit market share is ever present on the agenda of the Port Authority.

Ghana as a lower middle income country (World Bank, 2011) with credible democratic tenets is heavily import-driven market oriented with a lot of government revenues accruing through the ports. This means any inefficiencies coming from the ports will
adversely affect government revenues and ultimately cause economic and social imbalance.

Therefore, the performance of the seaports of the country if targeted properly through proper governance structure system will help reduce cost and increase the level of transit trade from these landlocked countries in addition to the captive market offered by Ghanaian businesses.

The Ghana Ports and harbours Authority is a statutory regulatory body established in 1986 by an Act of parliament to “build, plan, develop, manage, maintain, operate and control all sea ports in Ghana” (GPHA, n.d). Currently, Ghana has two seaports. The Port of Tema to the east and the Port of Takoradi to the west. However, an Executive Instrument (EI) was signed in 2020 by the President to construct a third port in the town of Keta with the Port Master Plan visibility studies ongoing (Thierno, 2020). The Tema port is the largest of the existing two ports that is mainly responsible for about 85% container import whiles the Port of Takoradi caters for the rest (GPHA, 2018). The Port of Takoradi is largely responsible for bulk export which constitute Manganese, Bauxite, cocoa among other raw materials. However, before 2009, the Tema port governance structure was modeled on the Public Service Port concept where both Port structures and super structures including machines and labour were owned and controlled by the port authority. The government at the time had its political philosophy rooted in the free-market regime and started the process of inviting private participation in the affairs of the Ports in Ghana. It floated the idea in 2004 and a search for a suitable partnership between the government and the private party commenced and in 2009, for the first time a private company was selected to handle containerized cargo whiles the port authority concentrated on both being a regulatory agency and also handles the limited bulk cargo that comes to the Tema Port

Since then, the Meridian Port Services Limited has been handling containerized cargo which has culminated in the construction and commencement of a new four-berth Terminal worth $1.5 billion aside the existing container Terminal at its old site. This partnership is between the government of Ghana through the Port Authority, Bollore Africa Logistics and APM Terminals for a period of thirty-five years (Lawyer, 2019, APM Terminals, n.d).
Ghana’s ports have a unique model from the generally accepted models as propounded by the World Bank (Public Service, Tool, landlord and Private ports respectively). The Port Authority which is supposed to be the regulatory arm of government overseeing the ports, also engages competitively in active operational business with the private sector mainly on the bulk cargo side which is termed the “hybrid system”. This work, however, will concentrate on the container terminal side which is the mainstay of the port.

A lot of considerable scholarly works have been done on how port can improve operational and managerial performance whiles cutting down on waste through cost management (Sánchez et al., 2003). This research analyzes these from the governance structure perspective to determine the relation it has on port level performance as far as the port of Tema in Ghana is concerned.

The concept of Port governance has been studied considerably by both the academia and port Authorities. Varying degree of descriptions and explanations have been proffered as to what exactly constitute port governance due to the complexity and vagueness of the scope of governance (Zhang et al., 2019)

However, Brooks and Pallis (2012, p.512) appears to capture the concept of port governance saliently when they argued thus: “Governance is the adoption and enforcement of rules governing conduct and property rights.....in the case of ports, governments, or other relevant policy makers, usually impose governance structure with particular national or regional policy objectives in mind......”

The Tema port has been able to expand over the years to meet both local and international (transit) demand. As shown in table 1 below, the coming into stream of the new Terminal 3 has made the Port one of the largest in the West Africa sub region. On top of this, it also boasts of one of the largest shipyards with the following basic statistics. The large dry-dock (Dry-dock 1) is 277 meters long, 45.4 meters wide and has depth of 6.0 meters. The small dry-dock (Dry-dock 2) is 13.7 meters wide at the gate, 106.7 meters long and has a depth of 5.0 meters (GPHA, 2018).
Table 1: Basic Navigational Characteristics of Tema port

**NOTE:**

1. Max. LOA for Berths 1&2 shall be up to 265.0m 2. Max. LOA for Beth 3&4 shall be up to 260.0m 3. Max. LOA for Berths 9,10 and 11 shall be up to 240.0m 4. Max. LOA for Berths 17, 18, 19 and 20 shall be up to 367.0m

Source: GPHA (2021)
1.2 Problem Statement:

Over the years, the port industry has undergone a lot of structural changes because of its enormous contribution to world trade mainly as a derived demand that exist to facilitate international trade. One of the key changes happens to be its governance structure. A considerable number of ports around the world have gravitated towards the landlord port project. However, the ports in Ghana have elected to practice the hybrid system where the Port Authority, as a regulatory arm of government that seeks to facilitate and regulate the functions of players in the industry, is also engaged in active operational activities competing with the private sector for business. The ports in Ghana have gone through an amalgamation of different administrative, functional, legislative and managerial structures before its current status as a hybrid system. However, the container terminal sector is wholly ceded to a private entity. With the port almost wholly into containerized cargo activities with the exception a limited number bulk activity, it will be revealing to understand the performance of the container terminal--which is the main stay of the port’s activities-- in relation to when it was under the public service regime. Thus, the purpose of this research is to examine the governance structure of the Port of Tema and how it impacts port performance.

1.3 Objectives of the Research

The underlying objective of this work is to investigate and carefully examine the port governance models as espoused by the available literature and relate that to the practiced governance structure of the port of Tema and weigh the impact on the port’s performance. To arrive at an outcome of the objectives set forth, the following research objective is set:

1. To examine the relationship between port governance structure and performance with case of Tema Port in Ghana
1.4 **Methodology**

The work will be conducted through case study analysis by quantitatively relying on secondary data already produced by the port authority and other relevant agencies. By using case study, the work aims at opening up all the differences that come to play in the governance structure of the port and its impact on performance. Analyses of the performance of the port will be studied when it was wholly public service port and when private partner participation started so a comparison can be made to understand the dichotomy of both regimes. Time series of port performance indicators will be analyzed with other data sources as indicated below. Data was difficult to come by spanning many years when it was under the public governance system. Therefore, for balance of data set that can cover both governance structures, nine years of data from 2000 to 2008 under the public governance and another nine years from 2009 to 2017 during the regime of private takeover was analyzed.

1.4.1 **Data:**

1. Time series of Port performance indicators
2. Time sheet of stevedore companies
3. Government official policy directives in relation to the Port
4. Ghana Revenue Authority figures on port revenue performance
5. Central Bank figures
6. World Bank figures on Port performance
7. Scholarly Articles
8. Credible internet sources
9. Sources from government regulatory Authorities (Ghana Maritime and Shippers’ Authorities).

The choice of data sources as indicated above are relevant to this research because they help to compare and evaluate the authenticity of the information received. For instance, the Ghana Shippers’ Authority has data information on the tons of cargo and number of ship calls every year into Ghana and to receive data from the port Authority alone or the terminal operators without comparing it with other relevant data source might not give this researcher the weight of evidence needed to confidently work with such data.
1.5 Significance

This work is critical because it will give a fact-laden evidence as to whether the governance structure as being relied upon by the Port has worked well over the years in the face of an industry-wide shift towards landlord governance structure. It will also lay bare whether government’s interest through the port authority as an active terminal operator has helped in improving the performance of the port or otherwise. Further to the above, the impact of the port’s performance through its governance structure on the economy of Ghana can be deduced since the country’s economy rely heavily on the port.

1.6 Structure of the work

As indicated in fig.1 below, this dissertation structure contains six (6) distinctive chapters. While chapter one (1) deals with the introduction and background of the work, chapter two (2) attempts a review of the literature on port governance and performance. Chapter three (3) then talks about an overview of the port of Tema, Ghana. Chapter four (4) explains the research methodology used for the work. Chapter five (5) analyzes and interpret the data as espoused by the data set. Chapter six (6) then concludes with possible recommendations and further research areas.
Figure 1 Structure of Work
Chapter 2
Review of Port Governance and Performance

2.1 Introduction:

Years of scholarly works have been able to gather a large body of empirical research relating to the concept of Port governance structure and its consequential impact on the performance of ports. Governments and public institutions with oversight responsibilities over ports have, over the years, deliberately sought to remove themselves from actual port business and concentrated their role on monitoring and regulating activities that open up the space for private individuals and companies to thrive and improve on the economic outcomes, in terms of government revenue mobilization agenda and citizens’ empowerment. This trend, according to Brooks and Cullinane (2007) did not happen in a vacuum.

It was an instigation emanating from two profound episodes in global activities affecting industries generally: (1) The industrialization of production worldwide and distribution of manufactured goods and (2) The shift towards new public management in government. This phenomenon of management responsibilities through devolution underpinned the wave of reforms that were sweeping across the world. However, there was seeming lack of consensus as to which direction of governance model was the best which, as expected, led to different outcomes (Brooks and Pallis, 2012).

Cullinane and Song (2002), also make reference to two primary motivating factors driving port privatization ultimately leading to a change in governance structure in the industry. They argued that the “expected economic benefits to be derived from improved efficiency” and the desire of governments to relieve itself of the enormous financial burden that is associated with a wholly government-led port operations was enough to cause a change. Proponents of the public management principles, among them, (Manning, 2000, Osborne and Gaebler, 1992) argued to the effect that there was no single adaptable way and went on to suggest that government ought not be seen to be both directing and producing at the same time.
As the debate and process gathered pace, confirmation was given to the interesting work done by Caves et al., (1982) including that of Boardman and Vening (1989) that concluded thus, there is no magic wand inherent with the involvement of private sector operations in public transportation with respect to better performance outcome. In the same vein, Cullinane, and Song (2002) are not far from this note when it comes to the port sector. They confirmed this in their research paper: *Port privatization policy and practice* that, privatization in itself is a means to an end and not necessarily the final antidote to fully take away what affects the port industry and recommended that privatization ought not to be implemented in isolation. This argument has been supported by Ng Koi-Yu, (2009) in his Port Competitiveness Modell when he asserted that monetary cost alone does not define a good and well performing port but less quantifiable factors like beliefs and perception of port users and chances are vital.

In the midst of all these debates in search for what actually can work better, the world bank then took a critical study with the aim of coming out with a generic port governance model that will standardized the phenomenon- the Port Reform Tool Kit (2005) by building on the existing works as propounded by de Monie (1994), Goss (1990) and other refined researchers. The complexities of port governance have given rise to many different models apart from the four standardized ones as espoused by the world Bank to be the guiding post. For instance, Brooks and Cullinane (2007) in their study of 42 ports concluded that 34 different combination of port models were deduced from studying these 42 ports.

### 2.2 Change of Ownership through Privatization

Privatization generally in the last three decades has been the hallmark of many governments particularly in Europe. This action has mobilized multibillion dollar revenues for governments to undertake major social and economic projects (Valentine and Baird, 2007). For instance, Gibbon (1999, 2000) averred that up to the second quarter of 1999 saw governments around the world making about US$1 trillion through privatization with Europe accounting for half of this revenue windfall. In the context of port privatization in particular, Valentine and Baird, (2007) in their section under Port privatization in the United Kingdom in Brooks and Cullinane edited book: Devolution, Port Governance and Port Performance, demonstrated that the first port privatization in 1983 to the last one yielded to the UK government an amount of US$
824 million. They however, went further to question whether the privatization of the ports as done by the UK government was beneficial to the public in the long run by inferring to the fact that, a new container terminal proposed for the city of London was estimated to cost the exchequer an amount of US$ 1.1 billion and wondered if privatization is always the best solution.

Further to their argument above, Baird and Valentine (2007) observed that privatization is not always about government seeking efficiency of public own assets. Sometimes it is also about politics. They posited that privatization of companies underpinned the desire of some governments to obviate the nationalization of companies during world war II because governments wanted to be seen more of a capitalist society than the socialist tag that was associated with state-run companies. This doctrine gave rise to the UK government engaging in a true and total privatization of ports including the sale of port lands and regulating rights. In linking privatization and devolution, Brooks, Prentice and Flood (2000) infer that devolution as we know it may range from semi commercialization to absolute privatization. When it comes to semi privatization, they continued, there is limited operator or landlord functions which are handed over to the private player while the public sector retains full regulator functions. In the case of absolute privatization, all the activities of the operator and landlord functions are moved from the public to the private partner. However, Baltazar and Brooks (2001 p.6) postulated that in as much as the government may choose to outsource or privatized the ports regulator functions, they warned against privatizing this to the ports because if this should occur, it will amount to “the fox would be in charge of monitoring or overseeing the chicken barn and the potential for abuse of the natural monopoly position that ports may enjoy increases dramatically”.

2.3 Regional Perspectives on Port Ownership:

There are varying regional perspectives on the direction of port ownership and its structures. While the literature points to similar or almost identical governance structure pattern in terms of port governance reforms in Europe, the UK’s model stands to be highly unusual because it involves total transfer of all the three major components of the port- landownership, utility (port operations) and regulator (Baird, 1997).
However, this bold step from the UK by transferring the regulatory functions to a private entity has instigated a lot of countries to study deeper into port privatization. As the practice has always been, countries privatized but always keep the Port Authority as a public outfit that is clothed with the express power to regulate and monitor activities of the privatized ports to conform with regulations as set forth by government (Terminal operations, stevedoring, concessions and general cargo handling). Apart from the bold and reformist stand taken by the UK in relation to port privatization, it has also been proactive with other forms of port governance compared to other countries. For instance, the UK has experimented with the concept of what is known as the Trust Port governance structure which dates back to early industrial revolution and same spread to some of its former colonies like India and Pakistan.

According to Baird (1995), this form of port governance is backed by its own Act of Parliament and governed by board of trustees with the mandate to promote and sustain the wellbeing of the port with surplus revenues ploughed back into making the port more efficient. However, its structure is so vague, Baird continues, to the extent that during the introduction of the “1991 Ports Act, government acknowledged that the trust ports were neither public nor private”. In spite of its vagueness, this governance structure was quite popular to the extent that about 26 (37%) of the major 70 ports in the United Kingdom were classified to be run under the Trust Port structure (Wild et al., 1995).

Following on from the experience of the UK’s privatized ports, Baltazar and Brooks (2001) indicated that one of the fundamental reservations governments have with respect to the privatized ports is the apprehension that private entities finding themselves in a monopoly may not pass on the success achieved to customers in the form of reduced charges and high quality customer service. This apprehension is evidenced in the devolution of some ports. For instance, Saundry and Turnbull (1997) observed that there were impressive profits margin appropriated by former officers when a decent number of UK trust ports were taken over by private entities. Baird (1995) concluded that this was made possible because of the fact that many of the trust ports were sold at below real market value to the extent that with some, there were no competing bids in the real sense of business sale market competitiveness. Furthermore, it has also been proven that the notion that corporatized entities are more
entrepreneurial may also not be a foolproof assertion cast in hard facts. The above point found favour with Dick and Robinson (1992) where they noted that Australian ports failed to deliver the desired port management outcomes because they were unable to change the inherent governance structure of port authorities. Thus, the culture within port authorities stood against innovation and initiative. This notwithstanding, Shashikumar (1998) reported there were evidence of good management performance within the first six months after the privatization of the port of Bombay in India. Managers were able to improve effectiveness around 90% and credited this success to the strict adherence of the principles relating to privatization by all stakeholders involved.

The reforms as alluded to have also caught up with a lot of economies with different port governance models as investment and financing issues have truncated the avenues available to government whiles institutional traditions and political practices continue to influence the direction of a country’s decision with regards to the port governance option to embark on (Baltazar and Brooks, 2001, Brooks and Pallis 2012, Wang and Olivier, 2003, Wang and Slack, 2002,). In taking the South African port model as another example, Meyiwa and Chasomeris (2016) argued that although the ports in South Africa appear to have public port characteristics, its governance and practices fall outside that category. It has its own nomenclature, they continued. Whiles it does not fit as a public entity, it is not also a private entity and therefore has wedged itself between public and semi-public port model.

Farther from the Southern tip of Africa, is Ghana. Yang et al., (2016) reviewed the governance structure of the Ghana Ports and Harbours Authority and acknowledged that with the advent of private sector participation in port operations, the authority is slowly but reluctantly moving towards the landlord model although port authority is still actively engaged in port operations, competing with the private sector and described that as “uncompetitive” which hinders the regulatory functions of the port authority. They concluded by arguing that the unclear governance decision by the port authority has created an unbridled monopoly for the authority and therefore inter-port competition has become a mirage and suggested a new body be set up that will clearly separate the regulator functions from the manager functions as well the operator functions for consistency of policy implementations.
In the case of the United States (US), Brooks and Pallis (2012) observe that while the US ports are predominantly publicly owned, the public authority is largely not involved in actual port operation. This assignment is handed over to the private sector through contracts and leases which they described as Non-Operating Port (Non Op.) Model. The practice is so pervasive in the US that in 2003, after analyzing the top 10 private sector container terminals in the US and Canada, 72% of these ports were found to be under this model with respect to terminal throughput.

In the context of Asia, Wang et al., (2004 P.1) bring a perspective that researchers ought to pay heed to. They argued that it is important for researchers to go beyond the usual metrics to understanding institutional cultures and socio-cultural embeddedness surrounding different countries and regions and endeavor to avoid “universalist Tabula Rasor” approach to reform capabilities. In support of Wang et al’s argument that socio-cultural embeddedness is critical in successful port reforms, Cheng (2002) posited that by the end of 2001, 25 container terminals were being jointly owned, managed and operated by foreign enterprise and of these, majority of them were of ethnic Chinese background. Hutchison Port Holdings Limited (HPH) and the Port of Singapore Authority (PSA Corp.) far outperformed other foreign companies in relation to entering the Chinese market and this was not a coincidence.

The notion of cultural embeddedness being taking seriously by some researchers in corporate entry strategies and reforms proves the significance of appreciating business network to understanding Asian institutional reforms and development (Yeung and Olds 1999, Airriess, 2001, Hamilton, 1996)

Within the domain of governance performance, there is no doubt that information on the level and evolution critical in evaluating the management and port planning strategies at all levels especially in the face of policy diversion that might impact on the governance architecture of the ports has been well established (Verhoeven, 2010). On how port governance structure can affect performance, scholars like Nagorski (1972), Heggie (1974) and Eyre (1990) cited in Cullinane and Song (2002) argue that ports operated directly by governments or public agencies and owned by the public sector are more expensive and less efficient, which invariably lead to less satisfactory results.
Tongzoni (2008) avers that, one of the factors affecting port performance can be attributed to port cost and that, for a shipper to decide to use a particular port, the cost to be incurred through port handling charges will be weighed before a concrete decision is taken as to whether that particular port make business sense. However, this argument appears to give prominence to situations where the shipper can alternatively use other port routes to get the goods to the final destination. What it failed to consider is the fact that in some developing countries where road and rail systems are in a relatively deplorable state and are not properly linked with their trading partners as seen in Europe, shippers’ only means will be to use the port. Choices then become limited and the final consumer suffers the consequences of the high cost. Also, there is evidence to the effect that in general, public ports, in an attempt to appease the public and considering the port as a tool through which the provision of a social good is attained sets rates or tariffs which end up not been able to make full recovery of cost invested. The port will then be destined to run in an inefficient manner through the machines and resources it may be using for service delivery (Wilder and Pender, 1979).

While the literature is replete with direct controllable factors like labour, capital investment, technological advancement as some of the main reasons that can determine the efficiency and performance of ports, Bergantino et al, (2013) admit that a myriad of contextual inputs play a role in assessing true performance of ports and labeled these as direct and indirect effects. They went on to argue quite cogently that, the first can be easily assessed more readily than that of the second because it is more remote and obscure to estimate.

In support of the direct factors that can affect port performance, Bergantino and Musso, (2011) aver that technological advancement has invariably increased the capacity of seaports with its attendant demand for efficiency from customers and other stakeholders. These demands from stakeholders have also led to the introduction of more degrees of maneuvering in all aspects related to management, commercial strategies and financing of port to make them serve its customer base better (Tongzon, 1995, Bergantino and Coppejans 2000, Murphy and Daley 1994).

According to Dollar et al., (2004 P.1) “Bad ports are equivalent to being 60% farther away from markets for the average country”. These inefficiencies are as a result of
either lack of investment or poor governance structure that make the port expensive and unattractive. Whilst Sánchez et al., (2003) accepted that public policy plays a vital role in determining port level performance. Dollar et al., (2002) on the other hand even equated port performance to not only resting on infrastructure development but organized crime and excessive regulation in their analysis of some Latin America’s Ports.

The above then thrust the role of the port authority into this ever changing competitive industry where decisions of the authority determine the performance of the port. Juhel (1998) cited in Cullinane and Song (2002. P.66) outlines some critical functions expected of the modern public port authority for good outcomes. Among them are:

(a) The authority position itself as the leader; financing facilities where gaining access to private or alternative sources of funds is unlikely but where the completion of such facilities appears on the critical path of national or regional development programmes,
(b) the regulator-in-chief; dealing with navigational safety, environmental protection and fostering common development policies between ports and adjacent cities,
(c) the facilitator mission; improving public governance (institutional ability to observe new public and private relationships and oversee operations and not intruding on commercial activities)

2.4 Summary

A careful study of the analysis found in the body of the literature are skewed towards the advance economies leaving a gap in the developing world to be explored. This assertion has been corroborated by Wu & Goh (2010) in their paper: Container port efficiency in emerging and more advanced markets where they analyzed container port efficiency from the BRICS (Brazil, Russia, India, China and South Africa) countries and 11 others and concluded that the literature on “port efficiency has typically centered on ports in advanced markets or comparisons within regions”. In the case of Yeung and Lin (2003), they point to the theoretical output in the area of economic development and reform in the context of Asian economies being skewed in favour of western peculiarities.
As Brooks and Pallis (2012) will point out, the devolution of ports which started intensely in the 1990s has been engaging but in a fragmented way. They documented that there is no one-size-fits-all solution and that, the drive as to which model to adhere to has been largely instigated based on regional and national peculiarities and not global or continental approach. In spite of this phenomenon of port devolution and governance, evidence points to a lot of governments control especially in developing countries although there has been a groundswell of improvement in the rate of concession given to private sector to operate. Brooks and Pallis (2012. P 25.4) concluded thus: “Our research documents the “myth of the perfect model.” Governance approaches have been more about national or regional approaches than continental or global ones. The privatization that is touted to have happened is, in many cases, “smoke and mirrors.” Ownership by government remains firmly entrenched in many countries, but there has been widespread adoption of concessions to bring greater private sector management into the provision of port services”

It is a well-established fact that the literature in its current state is not settled on any particular model that can be described as the best of all although the landlord model appears to be in the lead but as alluded to above by many researchers, handing over the operation of the port whiles the regulatory functions remain under public control does not guarantee efficiency or good performance but how willing are the operators ready to invest and drive their investment in a way that will yield the desired benefits to all stakeholders. In light of above, this research seeks to look at how effective the port of Tema has been doing after its terminal diversification from a public controlled venture into the private domain.

2.5 Port Governance:

The process of governance can be experienced in every facets of human life. Governance is associated with people’s political, social, environmental and business endeavors among others as they seek to make the best out of a situation. Simply, Governance may be termed as the art of organizing and steering societies and organizations.

Broadly, there are two main categories of governance. Political and Corporate governance. “Governance encompasses the system by which an organization is
controlled and operates, and the mechanisms by which it, and its people, are held to account” (Governance Institute of Australia, n. d). In furtherance of the above, the Organization for Economic Co-operation and Development ([OECD]) (n. d) describes Corporate governance as “involves a set of relationships between a company’s management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined”.

The definition of corporate governance may vary widely and sometimes loaded. Claessense (2006), in his argument on how to understand corporate governance, identified two distinctive definitions. He placed the first in a set of behavioral patterns - the actual behavior of corporations, in relation to performance, efficiency, growth, financial structure, and treatment of shareholders and other interested parties whiles the second looked at the normative framework - the rules of the firm for its sustenance, linked with the legal and judicial systems, financial markets, and other observable market related matters. Another layer within the literature of corporate governance that determines performance is cluster governance. According to de Langen (2006), this form of governance is different from the hierarchical form corporate governance is identified with. It consists of independent parties with limited or formal relation in the governance of their interactions and identified the governance of the Port Authority (PA) as equal to corporate governance while port governance is akin to cluster governance. In his work: “Governance in seaport clusters”, de Langen (2004) argued that for quality governance cluster to be achieved, two primary forces ought to be present. (1) The magnitude of the transaction cost and; (2) The range of interaction in a cluster. This is where the involvement of stakeholders in port governance is key in achieving set goals. Pallis et al; (2021) on the other hand talks about Port governance entailing the promulgation and following up on regulation and exercising authority and organizational resources, in order to outline and manage port activities that inures society’s expectation and that of the economy in general. The seminal work of Freeman (2010) which was first produced in 1984 emphasized the importance of stakeholders in organizational set ups. He described stakeholders as all players who can alter the course of the business or being affected by the achievement of the organization’s objectives. Table two below shows the interaction between the stakeholders in the port ecosystem as espoused by de Langen (2006b),
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Interests</th>
<th>Sources of Influence</th>
<th>Indicators of Stakeholder Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport firms (including terminal operators)</td>
<td>Low generalized (trans)port costs, high quality of infrastructure, no (or limited) interference with logistics chain due to safety, security, product quality regulation and customs procedures</td>
<td>Lobbying through branch associations, diverting cargo to other ports</td>
<td>Existence of port-specific industry association</td>
</tr>
<tr>
<td>Port labour</td>
<td>High wages, job security</td>
<td>Port strikes, impact on image of working in seaports</td>
<td>Wage level</td>
</tr>
<tr>
<td>Local port related manufacturing industries</td>
<td>Strong ‘agglomeration economies’ in cluster, space for manufacturing activities, level playing field regulation with regard to noise and environmental standards</td>
<td>Lobbying through branch associations, investing outside port cluster</td>
<td>Existence of port specific industry association</td>
</tr>
<tr>
<td>End users of ports</td>
<td>Low generalized transport costs, including factors such as reliability and damage control</td>
<td>Lobbying through branch associations, diverting cargo to other ports (limited)</td>
<td>Existence and role of port users association</td>
</tr>
<tr>
<td>Local environmental groups</td>
<td>Regulations preventing excessive negative local externalities, such as noise and pollution and spatial quality</td>
<td>Use of procedures to postpone/prevent investments such as port expansion of capital investments. Political pressure</td>
<td>Existence of local environmental groups</td>
</tr>
<tr>
<td>Local residents</td>
<td>Job creation in line with local labour market, limited traffic congestion, no reduction of ‘quality of life’ due to port</td>
<td>Political pressure</td>
<td>Existence of resident groups</td>
</tr>
<tr>
<td>Local and regional government</td>
<td>Contribution to regional economy, contribution to regional tax income, effective transformation of port/city interface</td>
<td>Regional planning, public investments in ports</td>
<td>Public land ownership</td>
</tr>
<tr>
<td>National government</td>
<td>Low generalized (trans)port costs for residents and firms, cost recovery of infrastructure</td>
<td>National investments in ports, creation of port laws</td>
<td>National role in infrastructure planning</td>
</tr>
</tbody>
</table>

Table 2 stakeholders in the port ecosystem

Source: de Langen (2006 p.5)
As Notteboon et al., (2013) found out, governance is essential in determining the direction of a particular country. They concluded that there is a casual relationship between good governance and improved development outcomes with respect to higher per capita income, lower infant mortality and higher literacy rate. In the realm of corporate governance, the core functions of a governance model are to identify the strategic objectives of the entity and clearly express who takes up the risks of the organization and the lines of accountability. Not only that, it is also, in most cases, identifies the particular set of operating principles for the entity and conspicuously written agenda on how transparent the entity is supposed to serve its stakeholders. It is important to note that before an organization decides to align itself with a particular type of port administration philosophy or model, a number of characteristics influence that decision with respect to how the ports will be structured, managed or organized. These factors may include but not limited to the socio-economic structure of the country (the type of market orientation that country is engaged in), location of the ports, types of cargoes to be handled (wet or dry, general cargo or containers) historical developments such as the orientation of the former colonial ties among others (World Bank, 2007)

2.6 Port Governance Models:

As alluded to in the literature, there are varying degrees of governance models that manifest themselves in different parts of the world depending on various factors and agenda of the stakeholders or owners. However, for purposes of clarity and conciseness, this work will look at the four standardized models as espoused by the world bank. These are: Public Service Ports, Tool Ports, Landlord Ports and Fully Privatized or Privatize Service Ports. However, before each one of them is discussed, it is important that the basic differences underpinning these models are spelt out. As regards the service and tool ports; they are mainly associated with the realization of public interest as their guiding operation philosophy. Private model concerns itself chiefly with private interest. In other words, how to satisfy stakeholder interest while the landlord model is about managing the expectation of both the public (Port Authority) and private interest.

2.6.1 Public Service Ports:

This type of model is characterized by the port owning, maintaining, and operating every available asset (fixed and mobile). Cargo handling activities are also undertaking by labour engaged directly by the port authority. Service ports are usually controlled and supervised by the ministry under which the government of a particular country places the port and the chief executive officer is directly appointed by government with the mandate to run the port authority and its activities and report to the sector minister for purposes of government’s command and control. Service Ports have interest rooted in the service of public goods whiles maintaining operation of the ports through charges to break even; at least. The available literature suggests that the number of service ports around the world is declining. Whiles some former service ports have transitioned completely in most cases in the developed world, a number of them are also in transition toward a landlord port structure, such as Tema and Takoradi Ports in Ghana. The latter is predominantly found in developing countries. Under
service ports model, the port authority offers the complete range of services required for the functioning of the seaport system.

Some of the core functions of a service port are cargo handling activities. In some developing countries’ ports, the cargo handling activities are executed by a separate public entity, often referred to as the cargo handling company such as South Africa’s Transnet and Port Regulator of South Africa (Meyiwa and Chasomeris 2016). The Public Service Ports model comes with its own unique advantages and disadvantages which will be demonstrated in table 2 below.

2.6.2 Tool Ports:

The tool port model is not common compared to the others. In this case, the port authority owns, develops, and maintains the port infrastructure as well as the superstructure, including cargo handling equipment such as quay cranes, forklifts and MAFI trucks (World Bank, 2007).

Unlike the landlord port model where superstructures, equipment and staff are owned and managed by the private party, control and management of the staff who operate all the equipment is done by the port Authority although some ports, in their attempt to prevent misunderstanding between cargo handling firms allow operators to use their own equipment which inevitably dilute the tool port model in its truest sense.

This notwithstanding, operations on board vessels as well as on the apron and on the quay is contracted to private cargo handling companies by the shipping agents or other principals licensed by the port authority. According to the World Bank (2007), a typical example of this form of port model is the Chittagong port in Bangladesh and the Ports Autonomes in France, most especially the container terminals. The tool port arrangement sometimes creates tension between contractors and staff of the port authority which impede the smooth flow of work and affects port operations and other associated problems also manifest themselves as a result of this type of model. The division of labour and responsibility this model turns to encourage act as the source of seeming confusion. Whereas the port authority owns and operates the cargo handling equipment, the private cargo handling firm usually signs the cargo handling contract with the cargo owner but the cargo handling operations in terms of machine usage is done by staff of the port authority which sometimes render the cargo handling firm less effective in the control of the cargo handling operations itself.

In the realm of similarities, the tool port is akin to the service port in terms of its public philosophy and the way the port is sustained financially. Typically, under this model, the port authority makes land and superstructures available to cargo handling companies in the port and be able to compete internationally because of the management expertise the private players may be bringing in. A tool port model may be used as a stepping stone to landlord port model especially when the legal hurdles to landlord port model can be enormous. A government with a determined quest to undertake reforms of the port quickly may rely on less cumbersome processes to operationalize its intentions and tool port can serve that purpose.
2.6.3 Landlord Ports:

The landlord port is the most widely used model being undertaken by many ports around the world especially in many advanced countries. It is characterized by its mixed public-private orientation. Contrary to the philosophy of the tool port model where the port authority invests heavily in both structures and superstructures and maintain operational staff, the landlord model has a clear separation of functions where the port authority acts only as regulatory body and also as landlord of the port, while port operations; cargo handling to be specific are carried out by private companies authorized by the port authority to carry out those functions. For instance, the ports of Rotterdam, Antwerp and New York among others are classified to be landlord ports. This type of model allows for the release of port infrastructure through lease arrangement to private operating companies or to industries such as refineries, tank terminals, and chemical plants where the money to be paid to the port authority is usually a fixed sum per square meter per year which is worked to take into consideration inflation and other economic variables to be agreed by both parties before commencement. The calculation is also to be worked to commensurate the cost involved in preparing the structures put in place. An example of such are land reclamation and quay wall construction.

While the port authority usually prepares the structures, the private port operators provide and maintain their own superstructure including buildings. They also purchase and install their own equipment on the terminal grounds as required by their business plan. The private parties also determine who work for them by employing their own dock labour personnel and are also at liberty to fire them per their companies’ regulations. The port authority has nothing to do with this unlike the tool and public service ports.

2.6.4 Fully Privatized or Privatize Service Ports:

A Fully Privatized Port can be said to be the direct opposite of public service port. While the latter is owned and managed by government with the interest and the collective good of the public as its abiding belief, the former is normally under the control and management of private parties including the land itself and same is allowed to be exploited for private gains.

World Bank (2007) and other experts have described this form of port governance model as an extreme form among the rest. They are to be found mainly in the United Kingdom and New Zealand. This model subtly suggests that state has relinquished all its rights to port operation and is no longer interested in the formulation of public policy to guide its operations. It involves the transfer of ownership of public lands to the private sector. The reason why this is seen to be extreme is the fact that, even regulatory functions are left with the private operators to decide making the involvement of government in the running of the ports non-existent.

The United Kingdom is a classic case where government-backed or public regulator is absent. The ports themselves regulate their activities.

With the private parties owning port lands, the likelihood that they can be sold for other purposes once it is lucrative to do so is very high and this defeats the purpose for which the land was acquired by government.
Another reason why sale of land to private ports is challenging is that, it may sometimes raise a national security issue especially if this is to be done in fragile states where state security intelligence is weak. This can destabilize the country. There are varying reasons why the UK government, for instance decided to take this radical stand to port reforms. While operational efficiency through the injection of private capital is a key reason, Baird and Valentine (2007) also argue that it also had something to do with the political philosophy of the government especially after the World war II where government did not want to be associated with any socialist-leaning orientation.

These types of models as espoused by the world bank has helped standardized the process of port reforms. Table 3 and 4 below outlines the strengths and weaknesses of these models and the responsibility of stakeholders respectively. As indicated, they are a generalized form of structures that have not taken, wholly, the peculiarities of countries and their political orientation. Therefore, countries most times use them for guidance and try to fashion out structures that fit their own geopolitical inclinations to figure out who does what with what inputs.
Table 3 Strengths and Weaknesses of Port Management Models

<table>
<thead>
<tr>
<th>Public Service Port</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• Superstructure development and cargo handling operations are the responsibility of the same organization (unity of command).</td>
<td>• There is no role or only a limited role for the private sector in cargo handling operations.</td>
</tr>
<tr>
<td></td>
<td>• There is less problem solving capability and flexibility in case of labor problems, since the port administration also is the major employer of port labor.</td>
</tr>
<tr>
<td></td>
<td>• There is lack of internal competition, leading to inefficiency.</td>
</tr>
<tr>
<td></td>
<td>• Wasteful use of resources and underinvestment as a result of government interference and dependence on government budget.</td>
</tr>
<tr>
<td></td>
<td>• Operations are not user or market oriented.</td>
</tr>
<tr>
<td></td>
<td>• Lack of innovation.</td>
</tr>
<tr>
<td></td>
<td>• No or limited access to public funds for basic infrastructure.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Landlord Port</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• A single entity (the private sector) executes cargo handling operations and owns and operates cargo handling equipment. The terminal operators are more loyal to the port and more likely to make needed investments as a consequence of their long-term contracts.</td>
<td>• Risk of overcapacity as a result of pressure from various private operators.</td>
</tr>
<tr>
<td>• Private terminal handling companies generally are better able to cope with market requirements.</td>
<td>• Risk of misjudging the proper timing of capacity additions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Port</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• Investments in port infrastructure and equipment (particularly ship/shore equipment) are decided and provided by the public sector, thus avoiding duplication of facilities.</td>
<td>• The port administration and private enterprise jointly share the cargo handling services (split operation), leading to conflicting situations.</td>
</tr>
<tr>
<td></td>
<td>• Private operators do not own major equipment, therefore they tend to function as labor pools and do not develop into firms with strong balance sheets. This causes instability and limits future expansion of their companies.</td>
</tr>
<tr>
<td></td>
<td>• Risk of underinvestment.</td>
</tr>
<tr>
<td></td>
<td>• Lack of innovation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fully Privatized Port</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• Maximum flexibility with respect to investments and port operations.</td>
<td>• Government may need to create a port regulator to control monopolistic behavior.</td>
</tr>
<tr>
<td>• No direct government interference.</td>
<td>• The government (national, regional, or local) loses its ability to execute a long-term economic development policy with respect to the port business.</td>
</tr>
<tr>
<td>• Ownership of port land enables market-oriented port development and tariff policies.</td>
<td>• In case the necessity arises to redevelop the port area, government has to spend considerable amounts of money to buy back the port land.</td>
</tr>
<tr>
<td>• In case of redevelopment, private operator probably realizes a high price for the sale of port land.</td>
<td>• There is a serious risk of speculation with port land by private owners.</td>
</tr>
<tr>
<td>• The often strategic location of port land may enable the private operator to broaden its scope of activities.</td>
<td></td>
</tr>
</tbody>
</table>

*Source: World Bank (updated, 2007 p.65)*
Table 4: Basic Responsibilities of Port Management Models

<table>
<thead>
<tr>
<th>Type</th>
<th>Infrastructure</th>
<th>superstructure</th>
<th>Port Labour</th>
<th>Other functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public service port</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
<td>Majority Public</td>
</tr>
<tr>
<td>Tool Port</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
<td>Public/Private</td>
</tr>
<tr>
<td>Landlord Port</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Public/Private</td>
</tr>
<tr>
<td>Private service port</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Majority Public</td>
</tr>
</tbody>
</table>

Source: Adapted from World Bank (2007, p.66)

2.7 Port Performance Indicators

As Ghana’s economy continues to strive to achieve appreciable growth to satisfy the socio-economic needs of its people, the ports remain a major conduit to achieve this set objective. According to (Ghanaweb, 2021) Fitch has projected the economy of Ghana to reach $70 billion by the end of 2021 and has further estimated it to be the second and eight largest economies in West Africa and Africa as a whole respectively with expected per capita income moving from $2,020 in 2020 to $2,206 in 2021. This therefore brings a considerable pressure on the ports in the country due to the amount of international trade within and without Africa. Another important factor that will put pressure on the ports is the actualization of the Africa Continental Free Trade Area (AFCTA). This continental free-trade zone with its headquarters in Accra, Ghana, has a combined Gross Domestic Product (GDP) of USD$3.4 trillion with all participating countries opening up their countries to enjoy the returns that may accrue (Boateng and Dankyi, 2020). With Ghana being highly import-driven country and a considerable effort been put in place to increase exports, the economic transformation of the country will heavily rely on the efficient use of the ports. The country in recent years has invested heavily in its port infrastructure. In 2019, a collaboration between the government, APM Terminals and Bollore Logistics opened the first phase of a $1.5 billion terminal to revolutionized the operation at the port (Lawyer, 20219b). However, the lingering question that remains to be answered is whether the construction of this kind of terminal is enough to classify it to be operationally efficient or can positively impact positively on the performance of the port.

Port performance can typically be measured by the number of containers moved through a port in a given period of time based on the understanding that ports are in business to maximize their throughput operational capacities. (Tongzon, 1995). There are several port performance indicators propounded by researchers and
industry partners to identify the efficiency of ports based on the KPI used. For instance, whiles European Sea Ports Organization [ESPO] (2010) have market trends and structure indicators, socio-economic indicators, environment indicators, logistics and operational indicators and governance indicators, Ville et al; (2018) also considered operational, financial, environment, quality and safety indicators as the thematic grounds upon which other KPIs like vessel turnaround time, vessel traffic, throughput, maritime connectivity, financial health, total energy consumed, crane moves among other varying KPIs are selected for measurement. According to Sorgenfrei (2018), while terminal operators consider operational moves in assessing their productivity, shipping lines do ignore this aspect of productivity assessment because, in their estimation, those operational moves are not cargo moves and therefore make it difficult to get a unified criterion in measuring port performance or criteria. Notteboom, and Haralambides (2020), for instance, also list engineering designs, planned maintenance work, veterinary, health among others as, although maybe difficult to measure, constituting an indication of how the port is performing.

The above notwithstanding, this research will consider operational, Financial, quality, environmental and safety indicators as the broad themes but under them will be labour utilization, Total handled (in TEU’s), Total handled (in moves), Average Number of moves per vessel, Average anchorage wait (in hours/vessel), Berth occupancy, Berth Productivity, Gross STS crane productivity, Dwell time among others in understanding their impact on the performance of the port under consideration.

2.7.1 Operational indicators:

A port’s operational organization is a significant indicator of its performance levels. As ships grow in size to take advantage of economies of scale, shipping lines expect a corresponding effort from port authorities and terminal operators in handling the cargo they bring to the ports. How long a ship remains in a port or how easy and quickly it leaves the port has been a critical indicator in the decision making process of the shipping lines to use a particular port especially in instances where there is a competition among ports. Other operational indicators that determine the performance of a port are labour utilization. In this case, the capacity of the port to manage idle time to its advantage, berth and dwell time can be a very key asset for the port. Resource utilization rate looks at the charge that is attached to the time spent on providing client service in order to improve on port operations.

Kraemer (2021) espouses two methods of calculating utilization rate. The first calculates the number of billable hours divided by the number of hours recorded in a particular time period. For instance, in a case where 40 hours of time is recorded in a week but only 30 hours of that was billable, the utilization rate would then be $30 / 40 = 75\%$. With this method, however, it’s easy to see how the utilization rate can be gamed: if a business stops recording non-billable time, its utilization rate will always be $100\%$.

The second way to calculate the utilization rate is to take the number of billable hours and divide them by a fixed number of hours per week. For instance, if 32 hours of billable time are recorded in a fixed 40-hour
week, the utilization rate would then be $32 / 40 = 80\%$. It is instructive to extend that, with this second method it is possible to have a utilization rate that exceeds $100\%$. That is; if 50 hours of billable time are recorded in a fixed 40-hour week, then the utilization rate would then be $50 / 40 = 125\%$

The volume of throughput achieved within a specific period of time through the crane moves, berth occupancy and dwell time can be a good performance determinant of a port. An efficient port operation should be able to handle as much volume in the shortest possible time, use a few resources as possible, let cargo out of the terminal and berth as soon as possible and also keep investments as low as possible (Kraemer, 2021)

### 2.7.2 Financial Indicators:

Port business is a very capital intensive venture. Investing in both infra-and superstructures can be daunting. However, the provision of port services for a country is almost impossible to ignore considering the inter-dependency of the world and the natural desire of all countries to engage in international trade in a way that increases economic gains for national development. Port pricing differs substantially depending on the orientation or focus of the port. While private ports and terminals set to maximize profits, public service ports per their institutional philosophy aim at providing affordable and less financially invasive pricing structure for the benefits of the tax payers.

Sorgenfrei (2018), argues that there are four major categories of port pricing. These are (a) Service to ship for its proper and safe navigation (Pilotage, Towing) (b). Provision of service to ship at berth (Berthing, /Mooring, stevedoring, wharf handling) (c)Hinterland service provision (gate services, storage, tracking and (d) Provision of services to the cargo (storage, equipment rental warehousing). A port’s ability to prudently structure these financial services determines its performance level while keeping the quality of service it provides its clients for their sustained custom.

### 2.7.3 Quality Service Indicator:

The port industry, like all business-related industries rely substantially on its client base for business continuity. Therefore, provision of quality service to the satisfaction of these clients is very critical. There are several proposition from both academia and industry experts in explaining what constitute quality service. Lopez and Poole (1998), used three dimensional illustrations to describe port service quality which bothers on efficiency, timeliness, and security. However, Ha (2003) focused on port turnaround time, information availability to customers, port location and customer service convenience. The underlining theme that binds all these views is that, customers need to be provided with the highest form of service satisfaction to be able to show consistency in extending their custom to a particular port. Customers do not appreciate delays because delays have ripple effects on their business plans. In view of this, it is safe to propound that for a port to be able to enjoy high level of performance, service provision to its clients can be one of its key determining factors.
2.7.4 Environmental and Safety Indicators:

Increasingly, a port’s performance level is critically determined by its commitment to both environmental and security considerations. Burns (2005 p.87) states that “The level of a port’s energy consumption and the energy type determine a port’s commitment to protect the environment”. Undoubtedly, investing in green port projects or upgrading the so-called brown fields to meet the expectations of a green-inspired generation can be costly. Many ports in developing countries including the port of Tema, in spite of their lack of resources are doing their best to contribute their quota to the collective global effort. For instance, the port of Tema has a robust environment and sustainable unit that is mandated to enforce all ISO-related protocols and other environmentally sensitive policy instructions to bring the port closer to the dictates of the current trend which has a positive correlation with capital expenditure and operational expenditures.

The quality of security architecture also determines where the port’s performance level is at. The implementation of the ISPS code and all other maritime protocols are to be strictly adhered to by ports because all these allow for safe and efficient port operations and therefore the lack of these protocols and other relevant regulations make the port less efficient. A weak port security enforcement is tantamount to an unimpressive port performance.

2.7.5 Summary:

The future of what constitutes uncontested port performance indicators is still evolving as the advancement of technology means port operations and the kinds of service expected to be delivered to port users will keep changing. The likes of “boxbay” is a typical example of the changing phase of port service delivery phenomenon. This tool is developed by DP World and SMS group to revolutionized container storage system where it is able to place each container in an individual rack thereby moving each one easily compared to the current industry standard. This means there will always be different variables to be considered for measuring port performance depending on the goals and KPIs of the port concerned.
Chapter 3
Overview and Developments of Ports in Ghana

3.1 Introduction:
The Ghana Ports and Harbours Authority (GPHA) is the regulatory institution mandated by the charter establishing it – The Provisional National Defense Council Law (PNDCL 160) of 1986 to - “build, plan, develop, manage, maintain, operate and control all sea ports in Ghana” (GPHA, n. d). GPHA was established out of the Ghana Cargo Handling Company (GCHC), Takoradi Lighterage Company (TLC), and Ghana Ports Authority (GPA). GPHA per the instrument takes governmental policy direction from the Ministry of Transport.

Under the control of this comes the port of Tema. Ghana currently has two ports. The Ports of Tema and Takoradi. However, government through GPHA has commenced a feasibility studies to construct a third one in the eastern town of Keta. Before the construction of Tema Port, the Takoradi port was the only port in Ghana built in 1928 by the British mainly to aid them in carting raw materials from then Gold Coast to feed the industrial needs of Britain. However, after independence and with an increased international trade between Ghana and the rest of the world, the then President of Ghana, Dr. Kwame Nkrumah, decided that the nation needed another sea port which would be modern enough to trade with the outside world.

3.2 The Port of Tema:
The Port was established in 1962 and currently responsible for about 80% of Ghana’s international maritime trade imports compared to the port of Takoradi which is mainly responsible for bulk cargo exports -Bauxite, Manganese, Cocoa (GPHA, n. d). Like many ports at the time of its construction, its governance structure was built on the public service port model until government decided in the early 1990s to gradually cede part of its operational activities to the private sector (Ansah, 2015). According to Ansah (2015), the port of Tema no longer functions as a public service port in relation to its governance make up. It has private participation in operations (handling, stevedoring, terminal concession). However, the port remains an active player in port business mainly in the relatively low scale bulk cargo sector but the container terminal business is being undertaken by the private sector in what the port termed as the “hybrid system”. This means, while remaining as regulator of the port, it is also an operator, grantor and landlord simultaneously. The port has a vision to be the leading trade and logistics hub of west Africa. Ansah (2015) avers that the process of diversification from a wholly state controlled-activities in the port to part private was done in two phases. It started off with the
port Authority licensing 10 stevedore companies with an agreement to work 75% of the stevedore business while the authority maintained the remaining 25% and also the ceding of the dock labour management to private dock labour companies. The second phase was the licensing of private companies in terminal operations and Inland Container Depot operations.

Currently the port has 21 berths with draft spanning between 8.2 meters to 16 meters capable of handling modern and large size container vessels.

To ensure safety of ships, the port also has dry-docked facility with a slipway of 277.4 meters long and 4.5 meters wide sustained by an average draught of 8.2 meters. The dry-dock has a 100,000dwt capacity serviced by 20 and 60 ton mobile cranes for efficient service delivery (GPHA, n. d). The port also has a fishing harbor basin that caters for the fishing needs of the country.

Over the last few years, the port has taken some key measures that has placed the port in a good trajectory to be a major player and gained competitive edge in the maritime industry in the West Africa sub region. There has been improvement in service, automation, information transparency, application of international standards, ethical business practices and increased focus on sustainability.

As Ghana’s biggest port, the coming into stream of the new $1.5 billion container terminal with automatic gating systems, boom barriers and turnstile systems to electronically verify vehicles and trucks, electronic vessel booking as well as automatic vessel identification has enhance the port’s vessel traffic services and also ensure safe and efficient movement of vessels in the port (Gyebi-Donkor 2019). In 2017, the port introduced the paperless regime and automated billing systems which has significantly improved cargo and service turnaround time and also lead to cost savings for the port and its users. The Port is currently using the Jade Master Terminal System to enhance operational activities. It also operates an Integrated Management System in line with ISO 14001:2015 (environmental management), ISO 9001:2015 (quality management) and OHSAS 18001:2007 (occupational health and safety). When it comes to port performance, its operational performance keeps improving. According to GPHA (2019), Total Cargo traffic volumes increased by 16% from 22 million tonnes in 2017 to 25.5 million tonnes in 2018 with total container traffic moving from 1 million in 2017 to just over 1 million as shown in the graphs below respectively.
Figure 2 GPHA Cargo Traffic 2009-2018. Source-GPHA 2019

Figure 3 GPHA Container Traffic 2009-2018. Source: GPHA
3.2.1 Tema Port as a Transit Corridor for West Africa Landlocked Countries

Tema port plays a vital role as the gateway for Ghana’s landlocked neighbours. The provision of a dedicated transit terminal, tariff rebates, hassle-free corridors coupled with strategic security and focused customer services have yielded remarkable results. According to GPHA (n. d), Transit traffic hit 1,043,771 million tonnes in 2017 and further grew to 1,251,129 million tonnes in 2018 representing a 19.9 per cent growth.

The transit business forms an integral part of the port’s strategic thrust not only to grow traffic through the port of Tema but also as an avenue to diversify the revenue portfolio of the port by not concentrating on the custom of the Ghanaian populace alone.

Since January 1998 to September 2019, the ports of Ghana have handled 16,006,204 metric tons of cargo for the three (3) landlocked countries of Burkina Faso, Niger and Mali. During this time frame, the Port of Tema has handled 14,183,694 metric tons representing 89% with the Port of Takoradi handling 1,822,510 metric tons representing 11% of total transit traffic. Burkina Faso’s traffic is dominant with 9,454,598 metric tons representing 58% followed by Mali with 2,872,878 metric tons representing 18% with that of Niger in third place with 2,145,152 metric tons representing 13% of total transit traffic handled through the ports of Ghana. The remaining 1.5 million metric tons representing 11% of cargo handled is attributed to traffic to Ivory Coast, Guinea, Togo and Benin (Gyebi-Donkor 2019). However, the port authority argues that until the implementation of the axle load policy in Ghana in 2009, (policy that ensures trucks do not overload and destroys the roads) Niger’s traffic was doing very well although the distance from Ghana is relatively farther from Abidjan and Lomé. It fell sharply afterwards. This points to the fact that, cost and distance alone do not determine the choice of port by clients but rather a combination of quality experiences along the service delivery chain, goes a long way to influence the choices made by port users.
Figure 4 Organizational Structure. Source: Author

Figure 5. Overview of the port of Tema. Source: GPHA Media Office (2021)
Chapter 4
Research Methodology

4.1 Introduction

This chapter is critical in helping to come out with evidence-based answers to the set objective and also helps in giving meaning to the research question. As indicated in Kothari (2004), research methodology acts as the systematic but scientific approach in unraveling a research problem. There are different approaches that are employed in gathering data and information to solving a particular problem identified. Whereas the quantitative method is primarily concerned with testing and understanding both hypothesis and statistical inferences (Jackson, 2008), the qualitative method in most cases avoid or does not invite statistical inferences or quantification. What it does is to concentrate on understanding the circumstances or nature of the problem instead of the quantity of the characteristics observed (Denzin and Lincoln, 2011).

This work attempts to use quantitative research case study through comparing the performances of two different regimes to understand or extrapolate their performance outcomes given the same variables. Embedded case study appears to be the best method to be used for this work because with embedded case study, multiple methods for data generation is used and it also helps to access different types of knowledge sources which may be from different stakeholders or disciplinary perspectives such as the listed data sources in chapter one (Scholz and Tietje 2002). As argued by Gerring (2004), case study can be deductive as well as inductive and can also be based on single or multiple cases with either qualitative or quantitative data sourced employed contrary to the erroneous notion that case study is the preserve of qualitative research work.

GAO (1990) and Dooley (2002), posit that in a case study, data is accessed, analyzed and the outcome thereof is used to shape the available set of observable variables or the next data collection process. However, with the embedded case study method, answers can be derived beyond the quantitative statistical results and understand the inherent reasons that influenced the actor’s perspective in the process. By using a quantitative data, it helps to project both the procedure and results of a particular situation in a manner that can be reconstructed and analysed (Tellis, 1997 as cited in Zainal, 2007).

As Yin (2009 p.18) observed, in a case study scenario, usually there are “many more variables of interest than data points and also rely on multiple source evidence with data converging in a triangulating fashion” and enjoying “from the prior development of the theoretical propositions to guide data collection analysis”.

There are varying reasons why case study may be chosen as a method of answering a research question or objective(s). According to GAO (1990 p.25), cases may be chosen based on “convenience, purpose and probability”. However, Yin (2009) argues that reasons for accepting case study may include critical case, an
extreme case, a representative or typical case, a revelatory case (a novelty) and longitudinal case. A purposive case adaption helps to collect the required and relevant data while longitudinal case tells us the trend over time (Edmonds and Kennedy 2012, GAO, 1990). In spite of the guidance above, Dubé and Paré (2003), has opined that many case studies, unfortunately, have failed in establishing a concrete argument in choosing this method which this work has taken steps to avoid.

In choosing case study as the most appropriate methodology, a critical look at Yin (2009 p.1) almost universally accepted six-prone case study plan was employed. It talks about Plan, design, prepare, share, analyze and collect as depicted below.

**Figure 6: Case Study Proce**

Sources: Adapted from Yin (2009, P.1)

The planning stage identifies the research question and the reason for electing a case study whiles the research problem ought to be succinctly stated. Ravitch and Riggan, (2011) argues that a case study must begin with a detailed literature review, a research question and stated objectives which have all be outlined in the preceding chapters. In the case of the research design, it helps in reasonably linking the research question to the conclusion via the systematic process undertaken during the data sourcing and data analysis. The preparatory stage identifies all the important issues in the study design and does well to resolve all of them before the data collection phase commences. However, the collection stage involves the use of multiple data sources which are of evidential value whiles the share stage involves considering the audience of the research and how the findings will be disseminated with interested parties for them to come to their own conclusion of the research outcome. According to Miles and Huberman (1994), there should always be an auditable sequence of evidence to explain how an eventual conclusion is arrived at. With reference to case study “data analysis
consists of examining, categorizing, tabulating, testing, or otherwise recombining evidence to draw empirically based conclusions” (Yin, 2009, p. 126).

4.2 Data Sources and Time Frame.

The determination of the performance of the port as regard the two comparable governance regimes under investigation from 2000 to 2008 and 2009 to 2017 was obtained from multiple sources. Internal and external sources were considered. Internally, data was accessed from the port authority and terminals while externally, agencies like the Ministry of Transport, Ghana Shippers Authority, Freight Forwarders Association, Shipping Lines and Stevedore Companies were also considered. The information was made available through email correspondences and official online portals. Accessing multiple sources of information was in line with case study guidelines to be able to uphold the relevance of data quality through it being believable, accurate and consistent (Wang and Strong 1996) and avoid what Baškarada (2010) calls data corruption during transmission, storage and analysis.

4.3 Limitation of Data

One of the most challenging encounters in the course of sourcing for data was the inconsistency of data across many agencies. Consistent with data poverty that bedevils many developing countries, the early years’ data was difficult to come by and that made the work to cut off data from the 1990s and concentrated on early 2000s so the author could compare when the governance regime changed before and after to be able to understand its impact on the port’s performance. Thus, the ten years of data set as envisioned was reduced to nine years which is also relatively strong and acceptable in data analysis.
CHAPTER 5
Data Analysis

5.1: Introduction

This chapter will talk about the findings as espoused by the data. After a careful examination of the data set, the results were analyzed to understand the impact of the governance structure being practiced by the management of the port of Tema on its performance through some seven key indicators. The average of each of the seven key indicators was derived for the respective time frames (GPHA: 2000-2008 and MPS: 2009-2017) to obtain more representative values for comparison purposes. The results were then presented using bar charts. No statistical comparisons were performed as the averages adduced and patterns observed are enough to meet the objectives of this research. These carefully selected indicators will be discussed in the subsequent paragraphs below. In this case, the governance structure was elected as the input variable while the output variables were the performance indictors which acted as the guiding rode in helping the author explain and conclude on whether the port’s governance model has helped it to improve on its performance or it has led it in the opposite direction after the container terminal, which is responsible for almost all of Ghana’s container imports, was handed over to the Meridian Port Services (MPS) by the port authority. It is instructive to note that, before the advent of MPS in 2009, the port of Tema was managed and operated under the public service port where regulations, operations, management and other auxiliary port works were under the full control of the port authority.
As indicated in the preceding paragraphs, the handing over of the terminal to the Meridian Port Services (MPS) was done in 2009. From the numbers above in fig.6 between the Ghana Ports and Harbours Authority (GPHA) and MPS, there is every possible indication that government may have seen and experienced a lot of operational inefficiencies on the side of the port authority due to a combination of factors (old machines, poor staff supervision, planning etc.), hence the motivation to invite a private partner who, to all intents and purposes, had the financial wherewithal to bring modern and efficient machines and can-do-spirit to do the job. It is important to indicate here that throughput does mean that all the containers handled in the port and not necessarily only the containers that are destined for Ghana. And to be able to improve on throughput outcomes, a company will have to have reliable machines and personnel to achieve same. For instance, during the nine years under review (2000-2008 under the port authority and 2009-2017 under the MPS respectively), total average throughput (total handled) rose from 364,831 TEUs to 648,239 TEUs respectively which translates in ratio terms of 78%. Observing the graph carefully, MPS came in started improving on the number of containers handled. Whiles the line for GPHA is almost straight with minimal changes, MPS’s is steep with significant increment in the numbers been handled. This was achieved because MPS came in with calculated determination to justify its presence to its new partners besides the investment made in new cranes and other operationally efficient tools which culminated in cutting down on waste and improving on staff supervision to give off their best.
5.3 Berth Occupancy:

The data shows in Fig. 7 above that after the arrival of the MPS, on average, berth occupancy increased comparatively to 89.4% from 50.9% occupancy rate under the port authority. Translating into a cumulative rate of 76%. The high difference can be explained in three ways. The first one can be attributed to the demand for more goods after the world financial crisis of 2008 which led to reduced economic activities around the world. The improvement that followed after the financial crisis was over led to a positive economic performance of the Ghanaian economy compared to the years preceding. Ghana is traditionally an import-driving economy and therefore, once the economy is doing well, there will be a corresponding increase in the demand for foreign goods. Which demand will invariable lead to increased vessel activities in the port culminating into the berths at the port been busy (89.4%). Another factor may be that, as MPS brought in modern and efficient equipment to work on cargo, the port was able to attract a lot of importers from its landlocked neighbours of Burkina Faso, Mali and Niger from other competing ports. Indeed, there was consistency of cargo from the landlocked partners to the extent that in 2018, the port was able to achieve 1 million metric tons of transit cargo for the first time its history. The third factor may be adduced from the Tema port been designated as a transshipment hub within the west African enclave by the port and other shipping lines (Hellenic Shipping News, n. d). Again. This has been made possible due to the superior services MPS brought onboard in the form of state-of-the-art gantry cranes and other maritime logistics that are able to work on larger vessels relatively faster than other competing ports.

5.4 Dwell Time

One of the most important indicator of a good performance from a port is the port’s ability to turn around vessels as quickly as possible. The longer the vessels stay in port the costlier it becomes for the owners, and the costlier it becomes for shippers too because the shipping lines take account of this parameter into their fright charges and more worrying is; the more it becomes costly for the port due to the fact that vessels delay
means the lines may want to use alternate ports if possible especially in a competitive market. In the case of Tema port as depicted in the graph below in fig. 8; before the structure was changed to bring MPS into handling the container terminal, it took the port authority an estimated 11.7 days on average in relation to ship dwell time compared to a relatively good outcome exhibited by MPS in the region of 7.4 days during the years under consideration culminating in a reduction of 63%. Bad vessel dwell times are normally occasioned by lack of adequate equipment and limited working hours. While the port authority was struggling to acquire new equipment to improve on their overall performance, MPS came in with new cranes, Mafi Trucks, Reach Stackers and also significantly improved on the hours they worked on a vessel through a shift system.

![Dwell Time Graph](image.png)

**Figure 9. Dwell Time (in days/TEU)**

### 5.5 Gross STS Crane Productivity

In fig.9 below, there is a clear causal and direct evidence linking the dwell time and crane productivity in the port of Tema. While it takes on average 7.4 days for MPS to work on a vessel as regards the years under review with a corresponding crane productivity of almost 18 moves per hour, that of the port authority was 11.7 with a crane move of 14.6. Although the data shows that MPS has managed to improve on the crane moves per hour compared to that of the port authority from 14.6 to 17.9, it was still not the best compared to international standards. A survey conducted by Mooney (2017) of some selected ports in Asia, Middle East and Europe (Busan, Tanjung Pelepas, Yangshan, Ningbo, Hong Kong, Jebel Ali, Yantian, Rotterdam, Hamburg, Qingdao, Antwerp, and Bremerhaven) showed that crane productivity had fallen from 26 to 24 moves per hour around 2017 and concluded that this fluctuation was dependent on the size of the vessels. Larger vessels were difficult to work on compared to medium ones. Thus, for MPS to improve the crane productivity rate to about 23% by doing 17.9 moves per hour may not be the best with regards to international standards but certainly a significant improvement for the port of Tema and a positive outcome for its performance.
5.6 Average Number of Moves Per Vessel.

The most significant percentage change in the performances of both regimes is the number of moves per vessel as shown in the graph below in fig. 10. The data shows that MPS and GPHA within the years under consideration was able to achieve average moves of 973 and 299 respectively culminating in 225% change in favour of MPS. This clearly demonstrates that the changing of the governance structure through the introduction of private partners into port operation has helped the port to be relatively both effective and efficient and serving its customer base well. The main aim of customers is to be able to get their cargo out of the port and onwards to its final destination on time. For MPS to be able to increase the number of moves per vessel by 225% makes the argument in favour of the introduction of private partners or moving away from the public service port governance structure.

Figure 10. Gross STS Crane Productivity

Figure 11. Average Number of Moves Per Vessel
5.7 Average Anchorage Wait (in hrs./vessel)

The data with regards to the average anchorage wait per vessel in fig. 11 below has proven that the port authority did better than MPS. While the port authority under the public service port which meant that almost total operations and management were devoid of private resources was able to keep vessel waiting at anchorage at 36.2 hours, MPS managed 46.7 hours. This better performance from the port as compared to MPS may stem from the fact that, as MPS came in with new machines and renewed sense of staff supervisory skills leading to more vessels been worked on coupled with Ghana’s economy recovering from the world financial crisis meant that more vessels were arriving at the port leading to the terminal been overwhelmed. As demonstrated in the percentage change in berth occupancy from 50.9% to 89% by the GPHA and MPS respectively in fig. 7, MPS berth was having a high occupancy rate relative to the 50% GPHA used to do. The cumulative increment is 29%. This explained the construction of a new $1.5 billion terminal with four berths opened in 2019 (APM Terminals n. d). This will go a long way to cut down on the time vessels spend at anchorage because there will be enough berths and cranes to work on vessels that arrive in the port.

![Figure 12. Average Anchorage Wait (in hrs./vessel)](image)

5.7 Berth Productivity:

Berth productivity is inherently not the responsibility of only the terminals but all stakeholders. It is a product of the logistical chain in the port and any weak link with respect to any of the parties in the process will reflect on the performance of the terminal or the port. However, the terminal has the primary responsibility to make sure that vessels are turned around as quickly as possible because there is a positive relationship between dwell time and berth productivity. If the vessels delay at berth, it will reflect on the recorded berth productivity of the port. Higher berth productivity is the target all stakeholders should be aiming to achieve because a higher productivity will have a rippling effect on the supply chain and can even lead to less cost incurred in the chain that ultimately inures to the benefit of all involved.
In the case of the port as evident in fig. 12 below, before MPS took over, GPHA was doing an average of 23.9 per gang hour. However, MPS moved the number to 38.3 per gang hour. An improvement of 61% in cumulative terms. This shows that the introduction of MPS in operation has had a positive impact on the performance of the port, most especially, with regards to container operations and how fast ships are able to leave the port with a corresponding impact on how fast customers are able to get their boxes, all other things being equal.

![Berth Productivity Graph]

Figure 13. Berth Productivity

5.8 Summary

In analyzing the seven performance indicators of the port of Tema, there is an overwhelming evidence, save one indicator (Average Anchorage Wait in hrs./vessel), to show that the introduction of MPS into the governance structure equation of the Tema port has significantly improve on service delivery to the customers of the port. It is also prudent to reason that an efficient delivery of service will certainly have a better impact on the economic activities of the country since the country is heavily reliant on import and export related goods and services for its growth. As the country is projected to increase its GDP to $70 billion by the close of 2021, the port will be key in sustaining growth and opening up the country to the outside world through its international trade with its partners (Ghanaweb, 2021).
6.1 Summary

This research was motivated by the changing phase of Ghana’s ports and government ongoing policies to radically improve on performance delivery. These efforts put in place by government are not only instigated by the fact that Ghana’s economy is growing and therefore the need for improved services delivery will be essential, but also, the leading role the country plays in the sub-region as a political and commercial force. A certain leverage is sought from the three leading landlocked countries in West Africa and to be able to attract them, it calls for improved port operations where cargo can swiftly move in and out of the port to their destination. The objective that underpinned this research work was to determine the relationship between the governance structure as practiced by the port of Tema and its consequential impact on the performance of the port. Based on the seven key performance indicators analyzed in chapter five of this work, it has become evidently clear that the governance model introduced by government through the port authority from 2009 onwards by bringing in private partners to manage and operate the container terminal of the port has had a positive impact on the performance of the port.

This is significant because as alluded to above in chapter three, Ghana’s economic reliance on international trade cannot be overemphasized. A good port performance, therefore, helps in growth acceleration and standard of living. The research shows that goods are able to leave the port (import and export) in a relatively quicker time frame compared to when the terminal was being handled by the port authority where it was challenged with slow and old machinery and the general lack of government resource input for effective and efficient operations.

However, this lack of government’s resource infusion in getting modern and efficient equipment has been shown by the literature under public service port model to be a problem for a lot of port authorities because governments are normally faced with competing needs which make it difficult to adequately resource the ports and Tema port, in this case was no exception to this phenomenon until it decided to move towards private partnership. In arriving at the research objective, a chronological analysis of what the literature espouses regarding the types of port governance models pertaining in the industry was performed. Whiles it is generally accepted that there are four main port governance models (Public Service Ports, Tool Ports, Landlord Ports and Fully Privatized or Privatize Service Ports), there are nonetheless a number of models that are tailored to suit the unique and peculiar nature of ports. This is given credence in Brooks and Cullinane (2007) work; where they found that out of 42 ports studied, 34 different combination of port models were deduced from studying these 42 ports. The weaknesses and strengths of these four port models were gauged together with port devolution and concluded that there is a strong relationship between the type of governance model a port decides to adopt and its performance. A good governance practice or structure will certainly lead to an improved performance whiles doing anything than that will see the port retrogress or move in a direction that
will not be beneficial to the stakeholder involved. It is this type of bad governance structure that eventually forces stakeholders to change course culminating in management moving from one model to the other until a particular model suits stakeholders’ objectives and business philosophy. Although this work found out the port authority still engages in some aspects of port operations, it was mainly focused on bulk cargo which was not the focus of this work and certainly, to an extent, not the focus of the port either as the chunk of bulk business is undertaken by the port of Takoradi in the western enclave of the country. The work was concentrated on the container terminal of the port which undertakes about 85% of the country’s container import and export needs and came to the conclusion that the shift to private operations of this important section of the port has improved on service delivery enormously. In the end, the research objective was achieved because government changing the governance structure from a public service port to include private partners in the container terminal operations has brought a lot of positive performance changes to the port and the Tema port, with its new $1.5 billion container terminal is a testament of its leading role in the West Africa sub region.

6.2 Recommendations

The results of the research have raised some fundamental policy issues the government of Ghana ought to look at if it wants to continuously improve on the operations of all of its ports and help push the kind of accelerated growth it is looking for in the years ahead. Besides, Ghana is considered as one of the leading economies in West Africa. In fact, it is the second largest economic power force after Nigeria (World Bank 2018), and to continue to hold on to this accolade or do better, government needs to take deliberate decisions to manage its port sector very efficiently because of the enormous benefits international trade brings to the country. The following recommendations if well executed will put Ghana in a steady pedestal for economic transformations.

1. Government should consider making all ports in the country independent of each other instead of the current administrative guide where one single port authority oversees all policy, regulatory and sometimes operational needs of all the ports in the country.
2. The Port of Tema, based on the performance of the private partner needs to go fully landlord where even the bulk cargo operation and management is handed over to private partners who will bring the needed capital to boost operational efficiency
3. Although the port authority does not do much operational work, its staff strength is much higher than the private partner. This is obviously putting a lot of financial stress on the authority which monies could have been used to improve on efficiency and therefore, there should be staff rationalization to make sure that staff who are employed are actually needed.
4. On the basis of the success of the private operator at the port of Tema, the Port of Takoradi ought to be given out or transformed into a landlord port for improved efficiency because the source of inputs
like machinery is the same as it used to be with Tema port (government). Note: There are negotiations by government and private partners in this direction.

5. The port authority should concentrate on being the regulatory arm of government to ensure a fair playing field for all parties involved in the operational chain of the port.

6.3 Limitations

The research was faced with data acquisition challenges that made this author reduced the time from to nine (9) years because data from the port authority side was limited to 2000. Data prior to 2000 could not be found with the explanation that the system crushed when data was being migrated from the 90s to the new millennium. Also there were few discrepancies from the data provided by the authority and one from Ghana Shippers’ authority. It must be noted that data from other sources were reviewed to making sure that the ones provided by MPS and GPHA were in tandem with the general trend and where there were few discrepancies an average was struck although this was on a very limited scale which did not have any impact on the overall outcome of the work.

6.4 Further Research Area

In assessing the general position of the literature, to the best of my knowledge and understanding, it appears that there is a loud silence on the other factors apart from the direct ones like the performance indicators outlined above in this research. It is recommended that especially in developing countries like Ghana where the overriding authority of government on the ports is enormous, a thorough research is done on how the exertion of political influence and the agitations of traditional authorities with regards to port lands are impacted on port performance. This recommendation is emanating from the fact that the literature is overwhelmingly western-oriented and the peculiarity of other regions may have played less or inferior role in the general understanding of the industry as found in the literature and therefore more research is needed to address those peculiar circumstances. Another area is the impact of work ethics borne by societal orientation on port performance regardless of which governance structure is in place. Concentrating on the physical and tangible indicators alone may not tell the whole story in the industry especially in a part of the world where these indirect variables are integral part of society.
References:


