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A SITUATIONAL ANALYSIS OF THE PHENOMENON OF THE FREIGHT TRUCK OVERLOAD ON WEST AFRICAN INTERNATIONAL HIGHWAYS

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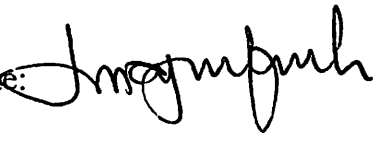
OCTOBER 2015

DECLARATION

CANDIDATE'S DECLARATION

I, Innocent Samuel Kwame Appiah, hereby declare that except for references to other people's work, which have been accordingly acknowledged in this thesis, this is my own original research work, and that no part of it has been presented for another degree in this Institute or elsewhere.

Candidate:  Date: 29/10/2015

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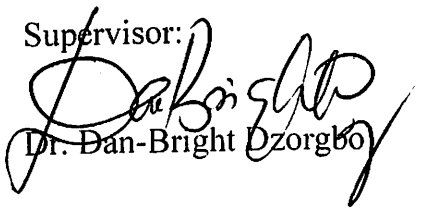
Supervisor:  Date: 29/10-15

Dr. Dan-Bright Dzorgbo

DEDICATION

This thesis is first and foremost dedicated to the Jehovah God for giving me life and strength to be able to produce this research work. All praises must be given unto Him, for His love endures forever.

I also dedicate this work to my family and loved ones. A special feeling of gratitude to my wife Anna and my wonderful loving children: Jemimah, Michael and Samuel. I also dedicate this dissertation to Noble Johnson Kukubor, who supported me throughout the process. I will always appreciate all he has done.

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ABSTRACT

The purpose of the study was to analysis the phenomenon of freight overloading on West African highways. The study had its objectives to examine the predisposing factors that gave rise to freight overload and identify their respective socio-economic implications. The researcher also described how stakeholders regulate freight overload through a pure qualitative research process. The participants of the study involved 20 drivers, purposely sampled, who plied the three corridors of Ghana, as well as the security services and other stakeholders who were conveniently sampled. Through focus group discussion, interviews, issuing of questionnaires and participant observations, the data revealed that, though security personnel are mandated to inspect the certifications of freight loads, some of them engaged in an 'ugly' act of collecting monies from drivers whether they overload beyond the legal axle weight limit or not. These inactions caused freight merchants to compel their drivers to overload their trucks which posed financial stress on the Government in maintaining and improving bad roads. Economic reasons were the main influence on freight overloading, as the drivers made up for the sums of money given to security officers as bribes. It was recommended that through corporate bodies like Borderless Alliance and the Ghana Shippers Authority, public sensitization should be maximized in the form of forums, workshops and seminars. Based on the findings of the study, it was further suggested that the introduction of entrenched laws and prosecution of persons involved in bribery would deter other personnel from engaging in such acts.

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ATP	Agribussiness and Trade Promotion
BA	Borderless Alliance
FGD	Focus Group Discussion
GDP	Gross Domestic Project
GHA	Ghana Highway Authority
GPHA	Ghana Ports and Harbours Authority
GPS	Ghana Police Service
GRA	Ghana Revenue Authority
GSA	Ghana Shippers Authority
HGV	Heavy Goods Vehicles
ICT	Information Communication Technology
JKHTL	J. K. Horgle Transport and Logistics limited
MoT	Ministry of Transport
MRH	Ministry of Roads and Highways
MTTD	Motor Transport and Traffic Department
NHVSS	National Heavy Vehicle Safety Strategy
RTMS	Road Transport Management System
UEMOA	West African Economic and Monetary Union
VAT	Valued Added Tax
WIM	Weigh-In-Motion

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The government of Ghana has a policy of improving routes to facilitate the easy movement of freight and passengers to foster greater integration and economic co-operation in West Africa. Road transportation facilitates the movement of people, goods and services within the country. It provides service to other sectors such as tourism, mining, health, trade, education, agriculture, energy, among others. Road transport is by far the dominant carrier of freight and passengers in Ghana's land transport system. It carries over 95 per cent of all passenger and freight traffic and reaches most communities. However, as road infrastructure comes with other social and economic benefits they are difficult to quantify in monetary terms. These social benefits in turn improve the well-being of the citizenry concerned. Good roads also lead to a reduction in the average travel time. This reduction in time in turn, leads to savings in terms of fuel and man hours. The evaluation of investments in road infrastructure development should therefore not be based solely on the economic benefits expected from the road in question (Teravaninthorn & Raballand, 2009).

Similarly, freight truck drivers, especially long-distance haulage drivers across the region, play a significant role in the economies of their countries. Roads are classified under three categories namely trunk roads, urban roads, and feeder roads. The Ghana Highway Authority (GHA), established with the aim

of developing and maintaining the country's trunk road network (GHA). Trunk roads in Ghana are classified as national roads, regional roads, and inter-regional roads, all of which form the Ghana road network.

National roads link all the major population centers in Ghana; regional roads are a mix of primary and secondary routes, which serve as feeder roads to national roads; while inter-regional roads connect major settlements across regional borders. The Ghana road network is 64,323 kilometres and road transportation is the most dominant choice of transportation in Ghana (Kyerefo, 2014). Road transport infrastructure in Ghana can be used to facilitate the exchange of commodities and enable regular school attendance and fast access to health facilities in Ghana. Good road infrastructure network contributes to poverty reduction. Farmers who have their companies, warehouses, among others close to good roads have easier access to markets for their produce than those who have their farms situated along bad roads. The availability of good roads in low income areas leads to improved mobility and access to employment and business.

A study conducted by Vision Consult and Optimal Consultancy Limited for the Ministry of Transport (MoT) of Ghana between 2005 and 2007 showed that farm gate price of a major produce (maize) is higher along completed roads than along uncompleted roads in all the ecological zones of the country. This means that improvements in the road infrastructure network lead to

improvements in the general well-being of the citizenry (MoT, Road Sector Development Project, 2007, Review Report). Thus, a country's road network plays a very key role in its socio-economic development through enhancing transport and communication, trade and commerce and serving as the fulcrum around which the economy revolves. As a result of the importance of transportation to a country's economy, it costs Ghana millions of Cedis to construct roads.

As at August, 2015, available information from the Ghana Highway Authority (GHA, field data) showed that it costs about GH¢6,076,000.00 million to construct a one-lane kilometre of asphalt road; GH¢8,232,000.00 dualization, GH¢3,508,400.00 to rehabilitate a one-kilometre road; and GH¢855,000.00 is spent to do one-lane kilometre surface dressing. Unfortunately, the country's road networks are in deplorable states draining the national economy through extra maintenance cost; all as a result of overloading.

Since the early 1970s, the population of heavy haulage vehicles in Ghana has increased significantly. It is not the proliferation of these vehicles which is the issue but the fact that these vehicles are invariably overloaded. Overloading is responsible for the rapid deterioration of roads. More so, when more bulk goods have diverted from rail to road. Construction and mining equipment have also been identified to have contributed to the devastating nature of the roads. An independent study carried out in 1993 established that about 31 per cent of trucks and heavy buses were overloaded. Sometimes the excess

loadings were as much as seven and 10 tonnes for heavy buses and trucks respectively (GHA, 2010). This notwithstanding, bridges in Ghana were constructed in the early 1930s, during which period very few trucks had loads exceeding four tonnes. In 1974, the Road Traffic Regulation restricted the axle load to 10 tonnes. Again, in 1985/86, the Economic Communities of West African States (ECOWAS) member-states adopted 11.5 tonnes per axle on the Trans-West African route. Excessive axle loading affects pavement and bridge performance and traffic flow (ibid).

Furthermore, due to the impact of an effective and efficient road transportation system on the socio-economic development of the country, the focus of the Ministry of Roads and Highways (MRH) is first and foremost to craft policies that will make it possible for the provision of access. This is never done through better distribution and integration of the road network system with special emphasis on safety, affordability as well as accessibility and mobility. The Ministry to also ensure that the roads are maintained and prolonged has put in place some interventions. One of such interventions is the installation of weighbridges to check overloading of heavy-duty trucks.

The Ministry of Roads and Highways, through the Ghana Highway Authority devised an Axle Load Control Strategy to forestall premature deterioration of the roads under its jurisdiction and seeks to reduce overloading of heavy-duty trucks to the barest minimum. It is envisaged however that restricting the total vehicle loadings and axle load distribution to the approved limits will go a

long way to prolong the road tremendously and also improve upon road safety (GHA, 2010). This notwithstanding, people still overload due to ignorance and for economic gains. Therefore, the GHA has so far constructed 18 weighbridges in various parts of the country out of the 26 programmed, 13 of which are functional, while three have just been completed and yet to start operations; two are under construction, and rest have been put on hold due to budgetary constraints. The construction of the weighbridges is to ensure that trucks keep to the permissible load weights.

The West African International Highway is very critical to economic development of the whole region of ECOWAS. The transport sector in West Africa plays a key role in the economic development of the sub-region and generates about six per cent of its Gross Domestic Project (GDP) especially the direct influences it has on the price levels of goods and services in the economy. Heavy vehicles travelling from origin to destination use the public road network, which includes roads as well as bridge structures. Due to the strategic socio-economic positioning of Ghana, many landlocked countries depend on the country's Tema and Takoradi Ports to freight their goods.

Overloading on the country's road network seems problematic and can potentially drain the national economy because of the maintenance cost. While an improvement in the quality and quantity of physical infrastructure such as roads and highways is a critical need in the region, it is unlikely to be sufficient to effectively reduce costs of freight road transport to desired levels.

This may be due to the continued prevalence of delays and costs incurred at road blocks along main transport corridors linking the West Africa sub-region in Ghana. A research gap aimed at reducing the cost of freight road transport therefore exists that needs to be investigated. Also, fluctuations in petroleum prices and the associated increases in transportation costs have contributed to the upward trend in the prices of some basic goods and services in the country.

Furthermore, the nature of roads in Ghana is one of the determining factors of general price levels in the country. Generally, it is accepted that where the roads are relatively motorable, the cost of transport goods from one part to another within the West Africa corridor is relatively less as compared to poor roads. It appears that the poor nature of some of the roads in the country has contributed to the high level of prices, especially foodstuffs. This situation may contribute to the phenomenon of the occurrence of overload on major roads linking the West Africa sub-region in Ghana.

1.2 STATEMENT OF THE PROBLEM

The movement of freight transportation has a strategic role to support economic growth on some region. Ghana can boast of widespread infrastructure of roads and communication networks. The road system is the most important element in the country's transportation network, carrying a larger percentage of all the country's goods and passengers. However, in spite of massive works going on in the road network in the country, most of the roads are in disrepair because of poor preservation and years of heavy traffic. As a result of the challenge of overloading, authorities in Ghana installed

weighbridges across the country. The reasons for the installation of weight bridges as indicated earlier, include preserving the roads and ensuring more efficient use of vehicles. This is because if the size and mass of a vehicle are not controlled, heavy loads may cause excessive damage to the road infrastructure. Consequently, legal load limitations have been imposed on major roads linking the West Africa sub-region in Ghana. The seemingly prevalence of freight overload on road transport on West Africa International Highways in Ghana, therefore is a cause of concern. In spite of this, there appears to be the occurrence of freight overload on these major roads.

Furthermore, in a previous study entitled "The Movement of Vehicles and Corruption on West African International Highways: Tema – Paga Corridor as a Case Study," Appiah (2010) indicates there was profound conclusion that delays during controls and checks at the border points as well as incorrect travel documents result in bribery and corruption. That work mainly sought to expose corruption, while the current study looks at a broader perspective to look at the interaction that goes on along the roads in view of the importance of sustainable development and making sure the huge amount invested on roads do not go wasted. This study is a situational analysis of the phenomenon of freight truck overload on the West African International Highways to determine the state of affairs five years on. It must be noted that the previous study focused mainly on bribery and corruption but the current study looks at a broader perspective, thus, the predisposing factors of the phenomenon of freight truck overload and their implications.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study is to examine the state of the phenomenon of freight truck overload on the West African International Highways. The specific objectives of this study are to:

I. Describe freight truck activities on the International Highways;

II. Examine the disposing factors that give rise to freight truck overload on International Highways;

III. Describe how stakeholders regulate freight truck overload; and

IV. Make recommendations as to how to minimize freight truck overload.

1.4 SIGNIFICANCE OF THE STUDY

The West African International highway is very critical to economic development of the whole region of ECOWAS. One thing Ghana has is that many landlocked countries have to depend on those with Ports to freight their goods, and in recent times, Ghana has become such an important country because of Tema and Takoradi Ports, due to its socio-economic strategic positioning. Additionally, the transport sector in West Africa plays a key role in the economic development of the sub-region and generates about six per cent of its Gross Domestic Project (GDP) especially the direct influences it has on the price levels in the economy. The current study would fill these gaps by empirically analyzing the situation on the West Africa International Highways with Ghana as the focus.

Impacts of freight truck overload comprise social, economic and environmental losses. Many developing countries are challenged with these

problems. A classic negative consequence of freight truck overload is that it badly harms the economy of an entire country and has thus become a major concern to governments. However, low levels of fines, the low level of enforcement, limited success with prosecution in the courts and varying levels of corruption at weighbridges have actually encouraged some heavy-duty truck drivers to apparently flout the law on axle load limits and rather result to overloading. The overloading of trucks is known to cause extensive damage to the roads, and constitutes a source of danger to other road users.

The study is geared towards providing a forum for the exposition of the ills of overloading on Ghanaian highways and therefore seeks to bring awareness to especially truckers and law enforcement agents to ensure that freight truckers conform to the permissible axle load limit do as enshrined in the Road Traffic Regulation of 2012. Although, this study is confined to selected roads in Ghana, it will help policy-makers to get a better understanding of the situation of truck overloading on West Africa International Highways. Further, it would assist in the redefining investments in safety and traffic management of International Highways in the country as well as in the sub-region.

Regulatory bodies such as the Customs Division of the Ghana Revenue Authority (GRA), Ghana Immigration Service, Ghana Police Service (GPS) as well as the Ministry of Foreign Affairs and Regional Integration, can use the findings of this study as a framework for strategic educational drive in the system. Theoretically, this study will serve as a reference material for future researchers who may want to conduct research in similar area of study by

adding to the body of existing knowledge about truck overloading on international highways.

The findings will equally serve as reference for other anti-corruption institutions on the effect of activities of uniformed officials whose duty it is to regulate vehicular movements and check anti-social activities harmful to the national economy. The study would further help create the requisite legal framework and enabling environment to help address issues of the predisposing factors of overload and their implications for Ghana.

1.5 SCOPE OF THE STUDY

The study specifically seeks to examine the operations of the weighbridge stations along the three corridors (Tema-Paga, Tema-Aflao and Tema-Elubo) and the effects of overloading on the roads. The socio-economic implications of the activities among the study population for trade and integration of West African states is also within the scope of this study. Hence, the study would provide insight into the phenomenon of overloading on the highways and the results may be of interest for policy-makers. Participants from both the public and private sector formed the scope of the study, truck owners (Companies or Individuals), Ministry of Transport (MoT), GHA, Motor Transport and Traffic Department (MTTD) of GPS, Customs Division of GRA, Axle Load Operators, GSA, Ghana Ports and Harbours Authority (GPHA) and Borderless Alliance (BA).

Thus, the main purpose of this study was to understand and establish the extent to which vehicle overloading is happening in a developing country like Ghana. Hence, the objective of this research effort was to broadly examine the factors that influence overloading of freight trucks vis-à-vis its predisposing factors and their implications for Ghana, and thereby generate information that will enhance an appreciation and understanding of the challenges that confront the road transport business along the major trucking highways in Ghana.

1.6 LIMITATIONS OF THE STUDY

This study must be seen as an effort to examine the common practices of freight overload on West Africa International Highways. Its findings should therefore be assessed by keeping some limitations in mind. These limitations need to be considered in interpreting the research results. The researcher faced some struggles and challenges gathering data for the research. The researcher was not able to get the population in terms of figures of all the drivers who ply the three corridors. The participants of the research were also not readily available to give information about a topic they considered sensitive. This however led to the researcher to use his own discretion to conclude on some findings. One might argue that such line of research studies might lead to bias; however, the researcher reviewed literature from similar studies to ensure that the data collected was fair on all accounts.

Some of these constraints are time as well as and delays in getting feedback from the respondents as some sensitive information had to be protected from

third parties. For instance, there were times that the researcher spent much time waiting to get responses from the respondents as they were busy at the time the researcher visited. Finally, since this research was done using the Ghana link of the West Africa Highway, the study findings cannot be generalized. Recommendations or conclusions made in this study can only serve as guidelines and is limited to the institutions or parties under study.

1.7 ORGANIZATION OF THE STUDY

This research work is made up of five chapters. Chapter one is the introduction of the study and it is made up of the background of the study, statement of problem, research questions, study objectives, study significance, study organization, study scope and study limitations. Chapter two of the study reviews the literature on predisposing factors of freight truck overload on West African International Highways and their respective implications. Chapter three considers research methodology and covers target population, data collection instrument, sampling method, procedures for collecting and analyzing data, reliability of instrument for collecting data while chapter four delves into the presentation and analysis of data used in the study. Lastly, chapter five also covered the conclusion, summary and recommendations based on the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discusses related theories, conceptual issues or the major variables around which the study revolves as well as related empirical studies. It subsequently gives an overview of the situation of freight truck overload vis-à-vis its predisposing factors and implications. This chapter also reviews documents related to bribery and corruption related and road transport as well as other related studies. It draws particularly on the negative impact of bribery and corruption as well as the impact of harassment and associated delays on the socio-economic development of Ghana.

2.2 THEORY

The theoretical framework of the research is generally based on Hardin's (1968) "Tragedy of the Commons" theory as cited in "The myth of the tragedy of the Commons" Angus (2008), *Socialist Voice* (August, 24). The term 'the tragedy of the commons' was first introduced by Hardin (1968) in an important article in *Science*. Hardin asked us to envision a pasture 'open to all' in which each herder received large benefits from selling his or her own animals while facing only small costs of overgrazing. When the number of animals exceeds the capacity of the pasture, each herder is still motivated to add more animals since the herder receives all of the proceeds from the sale of animals and only a partial share of the cost of overgrazing. Hardin (1968, p. 1244) concluded:

> *Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons.*

The tragedy of the commons' arises when it is costly and difficult to exclude potential users from common-pool resources that yield finite flows of benefits. This results in those resources being exhausted by rational, utility-maximizing individuals rather than conserved for the benefit of all. Pessimism about the possibility of users voluntarily cooperating to prevent overuse has led to widespread central control of common-pool resources. However, such control has itself frequently resulted in resource overuse. In practice, especially where they can communicate, users often develop rules that limit resource use and conserve resources (Hardin, 1968. 62, 1243–8).

Hardin's article deals in general with a broad class of resources that are referred to in the more technical literature as 'common-pool resources'. Common-pool resources yield finite flows of benefits (such as firewood, fish and water) where it is difficult and costly to exclude potential users (Ostrom, Gardner and Walker, 1994). Each person's use of a resource system subtracts resource units from the quantity of units available to others. The initial theoretical studies of common-pool resources tended to analyze simple systems. It has frequently been assumed that the resource generates a predictable, finite supply of one type of resource unit (for example, cubic feet of water or tons of fish) in each time period. Users are assumed to be short-term, profit-maximizing actors who have complete information and are

homogeneous in terms of their assets, skills, discount rates and cultural views. In this theory, *anyone* can enter a resource and take resource units.

Hardin thought of users as being trapped in this situation – largely because he did not envision that users could self-organize and devise institutions to extract themselves from tragic overuse. Clark (1976) in the conventional textbook theory states that scholars have tended to agree with Hardin that the users could not extract themselves from this situation. Organizing so as to create rules that specify who is an authorized user and the rights and duties of authorized users creates a public good for those involved. All users benefit from this public good, whether they contribute or not (Olson, 1965). Thus, getting 'out of the trap' is itself a second-level dilemma. However, since much of the initial problem exists because the individuals are in a dilemma whereby they impose negative externalities on one another, it is not consistent with the conventional theory that individuals can solve a second-level dilemma when they are already predicted to be unable to solve the initial social dilemma. Thus, extensive free-riding is predicted in most efforts to self-organize and govern a resource as a community of users. Because of these predictions and because many open-access resources have indeed resulted in tragic levels of overuse and sometimes destruction, many scholars and public officials have relied upon the conventional analysis to justify the need for centralized control of all common-pool resources.

2.2.1 The Present Study and the Theory of the Tragedy of the Commons

The Tragedy of the Commons is related to this study, especially about the roads as a common pool of resources, where nobody seems to really care as long as the drivers would achieve their gains for overload, and the others would continue to collect fines or bribes despite the fact that overload has various adverse effect on the roads, they don't really care how the government manages to maintain the roads. The theory is usually used for studies that talk about people using a common facility. At the end of the day, nobody cares because it doesn't belong to anybody, and for that matter, nobody cares about the maintenance and all those things. So the researcher sought to see whether the truck drivers even understand the implications of overloading; and find out from the people connected with the whole linkage if they really understand the implications; whether they know of the law of overloading; and whether they think the law should be enforced.

In other words, the theory is about morality and national interest, where people that share resources unavoidably pave the way for their own destruction, instead of wealth for all, there is wealth for none; a situation to indicate individuals acting independently and rationally according to their self-interest behave contrary to the best interests of the whole group by draining some common resource.

2.3 CONCEPTUAL ISSUES

2.3.1 Road Freight Transport

Road freight transport, or trucking, is essential to modern economies, occupying a unique socio-economic position linking supply to demand and linking many industrial sectors. As the mode of transport that brings most goods to their final destination, it is indispensable to tourism, trade, and the well-being of any economy, and is a primary indicator of economic health—generating a significant portion of GDP, employing millions of people, and offering the primary means for moving domestic, trans-border, and international cargo. Road transport represents more than 70 per cent of the land freight service at origin and destination points, connecting businesses to world markets (Londoño-Kent, 2009). Road transport is the backbone of the real economy, but its future health depends on providing better, not simply more transport. The industry comprises carriers that transport commodities for shippers using a commercial motor vehicle. Demand is driven by consumer spending and manufacturing output. The profitability of individual companies depends on efficient operations. Large companies have advantages in account relationships, bulk fuel purchasing, fleet size, and access to drivers. Small operations can compete by providing quick turnaround, serving a local market, or transporting unusually sized goods.

There is, nevertheless, growing recognition by Governments of the problems of the freight transport sector and opportunities for improving its sustainability in the economics of various countries. Cai (2013) agrees that transportation is the most important link for the whole logistics system which plays significant

role in the supply chain operation although Cai believes that transportation sometimes consumes resources as well as cause pollution and damage to the environment.

While the operations of HGVs are significant and form an important part of economic activities of any country, there is a need for control in the usage of HGVs as is the case in industrialized countries. Regulation and traffic management is used to minimize their danger and nuisance, especially in sensitive locations such as residential areas (Chan, 2008). Controls are also imposed to restrict axle weights so that roads are not damaged and to avoid inconvenience and danger to pedestrians and others through illegal parking. Unfortunately, HGV operations in developing countries are not adequately regulated. Lack of restrictions of entry into the operation of HGVs or freight trucks has led to the use of all kinds of goods-vehicles with their attendant implications.

In Ghana, the situation is aggravated by the easy and cheap way of becoming a goods-vehicle operator without any strict qualification criteria for those who drive the vehicles. The case of long distance driving for instance being undertaken with the aid of alcohol or drugs to keep awake whilst the vehicles themselves are frequently grossly overloaded (Anornu, 2011; Keketsyor, 2008).

2.3.2 Freight Truck Overload

According to Chan (2008), the issue of truck overloading is an untenable problem around the globe; occurring in not only developing countries but also the developed ones. He notes that the developed countries of USA and Australia cannot eliminate overloaded trucks entirely but they have succeeded in reducing it to less than five per cent as a result of the application of extremely high enforcement and inspection. To him, the situation in developing countries is serious because whiles there is rapid development of the economies and the increase in freight demand, the road network lacks the capacity to sustain such huge demands; hence pavements were damaged by excess traffic. For most enterprises in the sector as well as truck drivers, overloading their trucks reduces their running cost and overheads for freight transport. Thus, the impacts are enormous to the whole country and society but these have tended to be ignored.

Chan (2008) also indicates that compared to the developed countries which have less than five per cent of their trucks overloaded, more serious numbers are seen of the developing countries. He blamed the lack of enforcement and inspection to the high level of truck overload. An analysis of the pavement condition was done vis-a-vis the overloading of trucks and it was realized that overloading truck traffic brings unexpected deterioration for pavement within the service period. Additionally, to Chan (2008), although, maintenance and rehabilitation activities are carried out regularly, pavement structure and overlay are damaged unexpectedly. He further asserted that overloaded truck traffic does not only affect the economy but also injurious to society and the

environment. However, the researcher was concrete that economic impact is the major concern in developing countries which he emphasized in the findings of his research on truck overloading study in developing countries and strategies to minimize its impact.

Data sampled in 2007 for a World Bank Report 2008 on freight overload, revealed the increased waiting times and oversupply at the port extend the rotation times between the port and their destinations (World Bank Report, 2008). The consequence of the long delays is that there is encouragement of inducement because of the queuing processes in order to skip the queue; contravention of road safety regulations and overloading; leaving the drivers open to extortion by the Police and other security officers on these International Highways. The informal sector incentives are self-perpetuating as drivers pay bribes to agents of the organizations overseeing the monopoly to allow their trucks to jump the queue. This benefits the shipper as the extra tonnes of freight loaded beyond legal limits but not declared to Customs at the border between the coastal and landlocked country and therefore rewards the shipping Agents accordingly (Zerelli & Cook, 2010). This unending cycle shifts to the shipping agents to give extra cash to truck drivers who pay bribes to Customs officers and Police personnel to ensure that the under-declared cargo and overloaded trucks reach their destination without detention or official fines.

Similarly, investment for improved transport infrastructure and transit facilitation in the West African system, worth millions of dollars annually

from the budgets of donors and African governments, is achieving nothing and would cause long economic loss (Teravaninthorn & Raballand, 2009). It is for this reason that investment in road infrastructure and services is very important if not critical. Consequently, the MRH in Ghana has the main responsibility to ensure that, the huge investment being made by government in the road sector is optimized. Excessive loading, which leads to premature failure and deterioration of the road network, is therefore of primary concern to the Ministry.

2.3.3 Antecedent and Consequent Factors of Freight Truck Overloading

Increasing movement of freight brings associated pressures to develop land for freight-related uses. Industrial uses are constructed to manufacture and assemble the goods demanded by the public. Warehouses and terminal facilities are developed to store and transfer the goods by trucks. The potential impact on the economy has been frequently cited as a challenge associated with traffic congestion, as trucks inefficiently spend time in slow-moving traffic, perhaps even missing critical delivery deadlines as a result. The increasing use of just-in-time delivery means that a larger share of truck movements is time sensitive. However, even though shippers plan their schedules to account for recurring congestion, they cannot always allow enough slack to account for traffic incidents or unusual delays. With delays, and the need to accommodate them, transportation costs may rise and a fall in productivity across the supply chain (Munnich et al., 2015).

The complexity of operations and conflicting goals are generally felt with urban goods transport. Urban goods transport plays an important role in the quality of life in urban areas, since a large share of the traffic moves take place in areas with a high density of population and mixed use of public space, where external costs of transport are easily felt. The various problems encountered and caused by urban goods transport have implications on the local, national and international agenda. Some of the challenges of freight transport are examined below:

According to Sriraman (2015), accessibility problems encountered by urban goods transport are often caused by insufficient urban goods transport infrastructure, access restrictions and traffic congestion. Although delivering goods to city centres is essential for maintaining economic and social functions of cities, freight vehicles in many cities encounter the problem of not having the infrastructure necessary to function properly. There is a serious lack of parking places for freight vehicles, both on-road and off-road, which can be used for loading or unloading. Even where such places exist, they are often illegally occupied by other vehicles, since restrictions allowing only freight vehicles to use such places are rarely enforced. This results in freight vehicles being forced to double park on roads when they stop for delivery, causing disruption to traffic and safety problems.

The Road Traffic Regulation (2012) outlines the requirements for registering heavy vehicles and their minimum mechanical fitness standard. Heavy truck mechanical defects cause or contribute to crashes in a number of ways. Some

mechanical defects cause complete failure of components (example, tyre blow outs), while other mechanical defects reduce performance and therefore reduce a vehicle's ability to avoid a crash (for example, as a result of worn out or poorly adjusted brakes). More attention is now being paid to externalities associated with the road freight transport industry. Safety, congestion, ambient air and noise pollution, greenhouse gas emissions, and cost recovery for road damage caused by heavy vehicles are issues likely to become more and more important over time. So far, reforms for correcting externalities associated with trucking have been few and directed at road damage and safety.

2.3.4 Worldwide Enforcements and Management Practices to Curtail Freight Overload

Research on how enforcements are implemented to curtail truck overloading has been limited. However, a few freight overload management practices in some developed and developing countries are outlined. Wen, Xuhong & Jie (2007), noted that the most popular equipment used in overloading enforcement in China is fixed/portable low-speed weight-in-motion (WIM) system which is set at the roadside inspecting station or just put on the emergency parking strip. Firstly, using their experience, the enforcement staffs will head off the doubtful vehicles. Then, the doubtful vehicles will queue up to be weight by WIM system. If the vehicle is judged to be overloaded, the enforcement staff will order that a fine be paid or unload. In Anhui (a Province of China), two fixed overloading inspecting stations located in Yangxiaodian and Caoan have put this into use since 2003.

The Chinese government is however planning to build more and more inspecting stations. As the freight routes of overloading vehicles are relatively fixed, it seems easy for inspecting station to catch these vehicles. The Australian Trucking Association has recommended that an increasing level of safety, through continued development and implementation of initiatives under the National Heavy Vehicle Safety Strategy (NHVSS) by all key players; industry, government and stakeholders. The components its management system are: Increased seatbelt usage by heavy vehicle drivers; Routine guidance; Speed reduction for HGVs; Reduced driver impairment; Safer heavy vehicles; Enhanced driver and industry management; Traffic information including information on combined transport facilities.

In South Africa, the Road Transport Management System (RTMS) is an industry-led voluntary self-regulation scheme that encourages consignees, consignors and transport operators engaged in the road logistics value chain to implement a vehicle management system that preserves road infrastructure, improves road safety and increases the productivity of the logistics value chain. The RTMS has standards on driver wellness, vehicle operations, loading and productivity. Furthermore, the RTMS offered support for the implementation of the following components: National Standards; Auditors; Tools (manuals, templates, implementation guidelines); Information portals (website, data sharing) RTMS (2013).

With regard to Kenya, there are laws and regulations to control vehicle overloading, but there is a continuing debate within the country on specific

issues (for example, decriminalization, axle spacing, super-single tyres), with resolution of some issues requiring further research. The Integrated Transport Policy (2009), Kenya's overarching transport policy, identified road damage and axle load regulation as key issue areas. Specific policies include: the strict enforcement of axle load regulations; elimination of administrative and other weaknesses (e.g., corruption in law enforcement); privatization of axle load control operations; location of weighbridges only at major sources of freight and exit border points; installation of weigh-in-motion equipment together with modernization of existing equipment; and freight transport operators to be sensitized on the need to adhere to axle load regulations.

However in Brurundi, an adequate law to protect the road infrastructure against overloading is yet to be in force and because they have no (functioning) weighbridges, they have not put much effort into developing the legal text(s). Burundi is still at the early stages of development of laws and regulations to control vehicle overloading, at least in part due to a lack of functioning weighbridges (Pinard, 2010).

2.3.5 Axle Load Management Practices in Ghana

Roads and highways in Ghana being very important to Government due to being avenues for revenue, statutes and rules guiding freight drivers who use the highways and Ports are in place. These laws emerge from the Constitution of the Republic of Ghana, 1992; Road Traffic Act 2004 (Act 683); Road Traffic Regulation 2012 (LI 2180); Customs Division of the Ghana Revenue Authority (Management) Act, 1993, PNDC L 330 and Road Traffic

Amendment Act 2008 (Act 761). These laws encompass the rules for freight trucks, and the rules governing drivers or users of the various International Highways. The statutes stipulates that such vehicles have at least two standard advance warning triangles, first aid box and fire extinguishers, a spare tyre in good condition, either white or yellow visible lamps and reflectors. The required measurement limit for freight trucks are 12.2m to 22m depending on the types of vehicle.

Ghanaian law prohibits drivers from more than four hours driving. It also stipulates drivers to take breaks of at least 30 minutes to stay alert when driving long distances. For foreign cargo vehicles, a temporary custom importation permit is issued called 'laissez passer/C59 and it is valid for 30days. The maximum renewal period that is mandated to be granted to drivers with expired documents is 90 days. The speed limits for commercial vehicles carrying freight should not be above 75 for loaded trucks and 80 for empty trucks. The common offences and penalties for violations are stipulated in the Road Traffic Act, 2004 (Act 683) and the Road Traffic Regulations 2012. The offences range from dangerous driving and careless driving to using an unregistered vehicle or trailer. The maximum penalties, however, involve payment of fixed cash amounts to four months to 84 months imprisonment. The statutes also prohibit freight drivers from transporting hazardous goods. Drivers are liable to a fine of GH¢300.00 or less if found guilty or a term of imprisonment not exceeding six months or to both, if drivers contravene the above regulations.

In Ghana, permanent weighing points for trucks are located across various parts of the country. There are however mobile weigh vans located along the corridors for monitoring purposes, drivers pay GH¢300.00 fine and/or eight months imprisonment for overloading. Aside these payments, offenders are liable for the payment of overloading fees to cover the cost of damage done to the road. Such overload trucks are detained until the fees are paid and in some cases, trucks shed excess weight in other to meet the required axle load restrictions. Even though Ghana through its axle load policy rakes in revenue, the fines are not deterrent enough to remedy the damage caused to the road.

2.3.6 Transit Traffic at Ghana's Port

The Tema Port is Ghana's main gateway to international trade and the country's most important Port for transit traffic to the Saheli through Takoradi Port also handles some of the major cargos. GPHA has invested to promote transit trade, conducting marketing campaigns in the landlocked countries, opening an office in Burkina Faso, leasing port land to landlocked countries to develop their own storage facilities, and building transit sheds and truck parking facilities. This development by the GPHA adds to the ongoing development in Ghana's offshore industry and its infrastructure.

2.3.7 Tema Cargo Volumes

In 2008, Tema Port handled nearly 8.7 million tonnes. Imports constituted about two-thirds while exports account for about one-third. Containerized cargo amounted to 4.8 million tonnes, or 55 per cent of total tonnage. Tema is Ghana's most important container port, handling close to 550,000 20-foot in

2008. Since 2003, annual transit traffic has remained fairly stable at about 850,000 tonnes as shown in *Figure 1.* About 85 per cent of Tema transit cargo is transported to/from Mali, Burkina Faso and Niger.

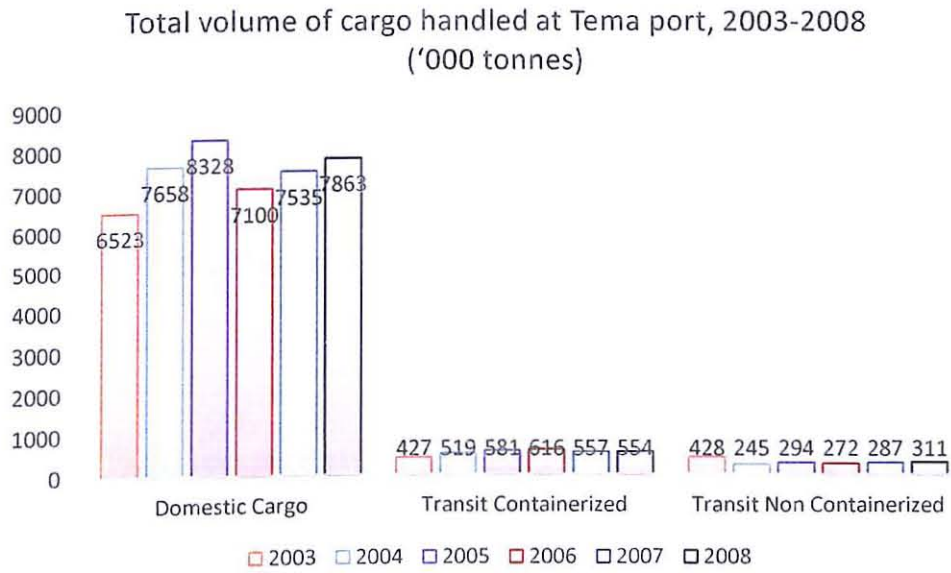

Figure 1.Total volume of cargo handled at Tema port, 2003-2008 ('000 tonnes). Source: GPHA

Within Ghana, Tema Port competes with Takoradi, Ghana's second Port, which emerged as a transit Port as a result of Tema Port approaching full capacity. In the year 2013, for example, Ghana's Ports handled more than 17.6million tonnes of cargo, of which over 68 percentage was handled in Tema (12 million) while 5.5 million tonnes in Takoradi, with both of them recording steady growth without signs of slowing down (Ghana Ports handbook 2014/15).

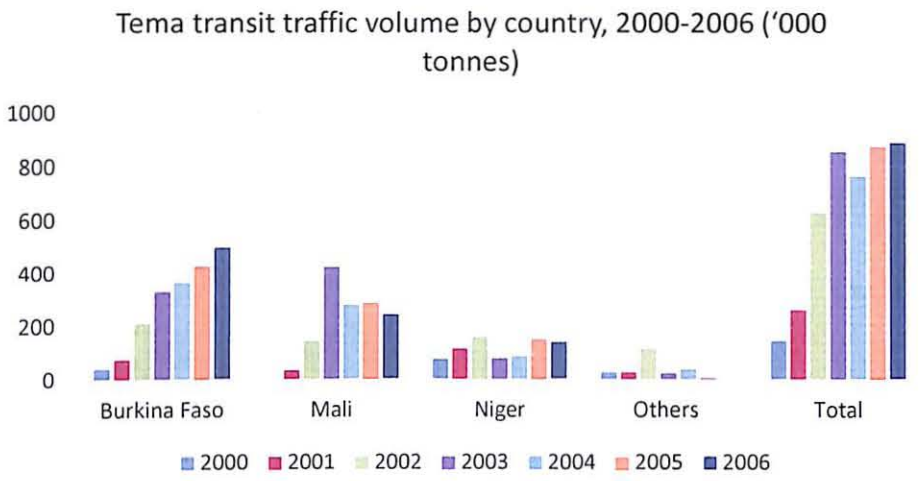

Figure 2: Tema transit traffic volume by country, 2000-2006 ('000 tonnes) Source: GPHA

Burkina Faso accounts for more than half the transit volume, which had been rising steadily until 2006. Flows to and from Mali have remained approximately constant from 2004 to 2006. Flows to and from Niger fell in 2003, but have since increased again in 2005 and 2006. Figure 2 shows the transit import and export traffic through Tema Port to Burkina Faso.

Heavy vehicle drivers are also prone to driver fatigue especially if it involves long working hours and long distance trips with limited recovery time (Friswell & Williamson, 2013). The monotony of long distance driving task may also increase the effects of fatigue on the driving performance and safety of heavy vehicle drivers (Larue et al., 2011). A study by Liu and Wu (2009) showed that fatigued drivers faced greater attention demand, were less alert, and tended to over-estimate the distance to road side traffic signs. Fatigue caused by driving in complex road environment had the greatest negative impact on driving behaviour and visual distance estimation, and the fatigue

transfer effect worsened significantly but differently on both driving behaviour and performance of fatigued drivers when switching from a complex to a monotonous road environment and vice versa (Liu & Wu, 2009). In situations when heavy vehicle drivers experience fatigue due to the factors mentioned above, the traffic safety level on the road may be compromised. It can only get worse if the heavy vehicles are overloaded because the safe handling of an overloaded truck will be more difficult as compared to a non-overloaded truck. Thus, truck overloading in combination with driver fatigue will jeopardize the safety of road users in a traffic stream.

2.4 EMPIRICAL STUDIES

Karim, Abdullah, Yamanaka, Abdullah and Ramli (2013), in a study entitled '*Degree of Vehicle Overloading and its Implication on Road Safety in Developing Countries*' sought to examine the extent and degree of vehicle overloading in a developing country. They used data gathered between October 2009 and January 2010 on weigh stations operated by the Malaysian Road Transport Department on Federal Route 54 in the Province of Selangor in Malaysia. They found that half of 3-axle trucks were found to be overloaded and the degree of overloading is up to 101 per cent of its legal weight limit. The effect of truck overloading on safety is discussed by establishing the relationship between truck stopping distance and gross vehicle weight for a certain travel speed. Comparison between actual overloading data for 2-axle, 3-axle and 4-axle trucks and the stopping distance illustrates the gravity of the situation which needs a comprehensive and effective strategy from the relevant agencies.

While significant number of studies on vehicle overloading in developed countries and the use of weigh-in-motion (WIM) technology to monitor the occurrence of vehicle overloading for various purposes have been conducted, the use of WIM technology and further discussions on the issue in developing countries is not much known. But this study conducted in a developing country has offered some new insights. With the lack of advanced facilities such as the WIM system and the corresponding static weigh stations and weight enforcement mechanisms, the problem of vehicle overloading in a developing country like Ghana may not have been fully realized to enable appropriate and effective mitigation measures to be employed. The current study in a similar vein could not employ the WIM technology as result of the afore-mentioned challenges coupled with time constraints as this research must be conducted within a limited time and presented for an award.

Empirical data from Foltz and Bromley (2011) and Bromley and Foltz (2011) reveal that petty corruption on the major truck routes of West Africa is widespread, pervasive, and intransigent. They point to an entrenched corruption mechanism, one that varies across countries and checkpoint types, but preys on trucks and drivers of all types. Freund and Rocha (2009) show that delays in the time it takes to get goods in and out of ports—to say nothing of movement along road corridors—represents a major deterrent to the level of trade within and among African countries, but especially so for those that are landlocked. Foltz et al. assert that combining estimates from Teravaninthorn & Raballand (2009) and from Freund and Rocha (2009), the elasticity of exports with respect to transport costs is about -1, suggesting that eliminating bribes

on these roads could increase exports by more than one per cent but less than five per cent.

In a study, Chan (2008) used a secondary data which was an overloaded truck traffic survey undertaken by APCD and supported by the World Bank Group in the Anhui Province and concluded that overloading of heavy goods vehicles is a critical problem in developing countries and that it has immediate impact in terms of increased road damage, which causes a dramatic increase in road maintenance costs. Explaining the extent of damage, Chan (2008) added that about 50 to 70 per cent of heavy vehicles are overloaded in China and that the overloading causes accelerated deterioration in the road network and pavement. "The pavement life analysis and net present value estimation presented the result that overloaded truck traffic induced a huge economic loss."

For his MSc thesis, Anornu (2011) conducted a study on the impact of heavy goods vehicles (HGVs) on safety and traffic management in the Tema Metropolis. He used secondary data on accidents gathered from the MTTD as well as primary data gathered through manual classified counts on the major roads within the Metropolis. The analysis showed that there was rapid increase in the number of HGV-related accidents over the study period (2007-2009) with a total of 238 accidents, 21 per cent occurred in 2007, 34 per cent in 2008 and 44 per cent in 2009. A total of 116 fatalities were recorded between 2007 and 2009 with 30 per cent in 2007, 33 per cent in 2008 and 37 per cent in 2009 respectively. The number of vehicles involved in HGV-related accidents

increased in percentage terms from 25 per cent in 2007, 34 per cent in 2008 to 41 per cent in 2009. It was revealed that speed limit signage, inadequate marking and existing marking have faded with use and other pedestrian facilities are critical in the Metropolis. It is recommended that the Department of Urban Roads should improve and incorporate traffic management measures in all future road projects. In addition, the Taskforce of the Metropolitan Assembly in collaboration with the MTTD of the Police Service should monitor the compliance with traffic management measures by all road users.

In summary, the interaction between the agents, the planner and the carriers in the overloading issue is explained by each party aiming to minimize their own costs. The road planner is the proactive party, anticipating the carriers' reactions to the possible deterrent actions taken by the planner. To reduce overloading, the road planner implements a penalty scheme, determining a fine and a probability of detecting violators. Given the tonnes to lift and the trip distance, determined either by the market or by logistics needs, the carriers who are the reactive party choose the amount to load their vehicles, aiming to minimize the transportation cost including any expected fines to be paid. The fines collected from the remaining violators also partly offset the planner's expenditure on road maintenance, yet enforcement is itself a potentially expensive task, the cost of which must be balanced against its positive impacts in reducing road wear.

Table 1: Various levels of axle load tonnes with their charges

Number	Axle load (Tonnes)	Excess of Total weight (Tonnes)	Charges (GH¢)
1	11.5	0	Legal
2	12	0.5	Tolerance margin
3	12.5	1	100
4	13	1.5	200
5	14	2.5	500
6	15	3.5	1000
7	16	4.5	1500
8	17	5.5	2000
9	18	6.5	3000
10	19	7.5	4000
11	20	8.5	5000
12	Unauthorized out gauge load		65.2
13	Unauthorized transformation of gauge		293.04
14	Refusal to pass through weighbridge		293.04

Source: Road Traffic Regulations 2012 (L.I. 2180)

A report by Borderless - Removing Trade Barriers in West Africa (2010), which is aimed at reducing barriers to trade across West Africa talks about stoppages on legal trucks going from Ouagadougou to Tema. Instead of three days, cargo trucks made the trip in six or more days. This is due to the number of checkpoints, which are unnecessary along West Africa's primary routes. Removing these unnecessary checkpoints would allow goods to move more quickly and help reduce the cost of trucking, which is among the highest in the world. The research suggests that legal trucks with drivers who have proper permits and licenses, cargoes that are properly documented and vehicles which

are in roadworthy shape and not overloaded should be able to roll without being held up or subjected to bribes.

According to the Borderless report, the effects of harassment on the road are far more effective than just time and money lost. The report found out that border towns had a higher prevalence rate of HIV/AIDS compared to other cities, putting drivers at risk of exposure to the pandemic when delayed. Often, drivers are unable to process their papers on time and are therefore forced to stay the night in a border town until the border opens the following day. These barriers add to the highest rates of HIV/AIDS and other sexually transmitted infections among truck drivers. Delays at checkpoints also keep truck drivers away from home for a longer time, adding days to trips and permitting greater opportunity for promiscuous activities.

The Borderless (2010) indicates that an Agribusiness and Trade Promotion's (ATP) road harassment reports on the "onion" corridor from Kantchari in Burkina Faso to Accra, Ghana, reveals bribes over seven times higher than what the Trade Hub finds to be the case for legal truck from Tema and Lome. Onions from Niger and Burkina Faso are transported to Bitou before moving to markets throughout the region. The higher levels of bribes on the "onion" corridor suggests that uniformed officials are using the perishable nature of the cargo to extort more monies from transporters and traders; corrupt agents realized that every minute a driver delays the quality of his onions deteriorates. Rather than wasting time at barriers, drivers prefer to pay bribes

to pass through checkpoints faster. Across the region, forward-looking authorities are taking action to stop corruption. The corrupt actions of disgraced officials are topics at national and regional meetings, and media reports and officials are castigated for the negative economic impacts they cause (Borderless, 2010).

Poorly-maintained, old, overloaded trucks have a greater propensity to break down, have accidents, pollute and most significantly damage the roads. Sometimes these negative externalities come with very high social cost. There is encouragement of inducement because of the queuing processes in order to skip the queue; contravention of road safety regulations and overloading leave drivers open to extortion by the Police and other security officers on these International Highways. The informal sector incentives are self-perpetuating as drivers pay bribes monies to agents of the organizations overseeing the monopoly to allow their trucks to jump the queue. This benefits the shipper as the extra tonnes of freight loaded beyond legal limits but not declared to Customs at the border between the coastal and landlocked country and therefore rewards the shipping agents accordingly. This unending cycle shifts to the shipping agents to give extra cash to truck drivers who pay bribes to Customs officers and Police to ensure that the under-declared cargo and overloaded trucks reach their destination without detention or official fines. It is for this reason that investment in road infrastructure and services is very important if not critical. The Ministry of Roads and Highways (MRH) has the main responsibility to ensure that the huge investment being made by government in the road sector is optimized.

The resulting oversupply of trucks on the market serves as an incentive for poorly-maintained and older trucks to remain significantly damage the roads. Sometimes these negative externalities come with very high social cost economically active. Without these incentives and supports, their owners would scrap them. According to data sampled in 2007 for a World Bank report 2008 on freight truck overload, the increased waiting times and over-supply at the ports extend the rotation times between the ports and their destinations (Teravaninthorn, & Raballand, 2008). This results in reduction in the distance covered annually and to further counter the low distance covered annually, freight truckers tend to overload their trucks. Poorly-maintained old overloaded trucks have a greater propensity to break down, have accidents, pollute and most significantly damage the roads. Sometimes these negative externalities come with very high social cost.

Meanwhile, the Police Administration has issued a caveat instructing all personnel at the various checkpoints spanning the Tema and Takoradi Ports through to the neighbouring landlocked countries including Mali, Niger and Burkina Faso to desist from stopping transit trucks that ply the corridor. The decision was arrived at after several stakeholders complained of extortion and delays of transit trucks from the ports through the northern parts of the country en route to the neighbouring land locked countries. The Ghana Ports and Harbours Authority, the Borderless Alliance and other relevant organizations after a joint consultative meeting met the police hierarchy over the issue

culminating in the issuance of the directive with the view to promote trade within the ECOWAS sub-region.

The Police Administration said apart from the four approved Police barriers across the country specifically for haulage and transit trucks, no officer of the service is allowed to stop any haulage or transit truck, and warned that sanctions would apply should anyone flout the directive. The main objective is to cut down on harassment and that because all the security agencies are present in the Port and perform their checks on the cargoes being carted by the haulage and transit trucks, there was no need for such trucks to be checked again once they exit the port. "We have issued a directive, in fact a stern warning to all Policemen to cease conducting checks on them. Not only stopping them, the Police is a security agency, we have our supervisors, the District Commanders, the Divisional Commanders and the Regional Commanders and each one of them will have access to documents covering the cargo on the trucks so that they can act swiftly if they receive any complaints to the contrary with regards to the directive'' (GHPA, 2015).

The Police Director General in-charge of Public Affairs, DCOP David Ampah Benning said all Regional Commanders have been reminded of their responsibility to ensure that the activities of the personnel on the roads do not hamper trade between Ghana and other ECOWAS countries, adding that the Regional Commanders should ensure easy passage of the haulage and transit

trucks. He warned that no Police officer should harass any haulage or transit truck and even in situations where they receive intelligence or a tip-off, they must forward such information to the appropriate barriers. He also entreated all drivers who require Police assistance by way of escorts among others not to hesitate to call for such assistance and that they should receive such assigned officers well and accommodate them in their vehicles. DCOP Ampah Benning further assured that the Police Administration was more than willing to play its part to ensure that international trade especially within the ECOWAS sub region does not suffer (ibid).

The axle-load limit, applied in Ghana for some time now, has been different from what is applied in other countries of the sub-region. Ghana is currently noted to be the only country in the sub-region implementing a limit of 60 metric tonnes gross weight for 6-axle trucks, whereas other neighbouring countries continue to go with 68 metric tonnes. This situation is said to have given rise to various adverse effects for the country, and as such, the that chances of the Ghana reaping some revenue from the transit trade operations continue to decline due to non-uniformity in enforcement of the axle-load control regime among member-countries of ECOWAS and the West African Economic and Monetary Union (UEAMOA) in the sub-region. According to reports, average transport costs shot up by 50 per cent, resulting in the loss of substantial cargo to neighboring countries that were not implementing the axle load regime. This is believed to have among others things, led to a sharp decrease in transit trade through the Ports of Ghana since initial implementation of the axle load policy in 2009. In the wake of these

developments, many truck operators who could not cope with the permitted axle-load limit per the Axle Load Regulations which were being enforced relocated to neighboring countries where the regime is not being strictly applied.

The GHA, which is in-charge of enforcing the Axle Load regime, initially pegged the maximum allowable tonnage for six-axle vehicles at 51 metric tonnes. Following a review of the limits at UEMOA level, Ghana now implements an allowable limit of 60 metric tonnes, and fines any excess up to 68 metric tonnes – with a much higher fine thereafter. This development has not pleased haulage transport operators, who have called for an upward adjustment of the maximum allowable tonnage of the new Axle Load Regulation under the Road Traffic Regulations of 2012 per LI 2180. It is believed that the implementation of the axle-load limit has brought untold hardship to truck operators in the transit trade business (Peacefmonline, 2013).

This situation has given rise to various adverse effects. There has been a sharp decrease in transit trade through the port of Tema since its initial implementation in 2009. Although, there may be additional factors accounting for the decrease in the port's competitiveness as a gateway to the landlocked countries in the sub-region, Ghana's unilateral implementation of the axle load policy is the major issue having the greatest impact on the transit trade. The current allowable axle load limit in Ghana is "pushing businesses out of the corridor," leading to the loss of economic ventures, unemployment and hardship for many stakeholders. Volumes of transit trade through the Port of

Tema from 2001 to 2013 indicated that it had moved more than 150 of its 200 fleet of trucks to operate in neighboring countries which has led to loss of jobs for many of their employees here in Ghana.

More effort and initiatives are therefore needed to increase competitiveness of the Tema Port as a gateway to cargo destined for landlocked countries. Several other coastal countries have initiated development of their railway systems as a cheaper and quicker option to moving cargo by road. An axle-load Focal Group was formed to engage all stakeholders in discussing the implementation of axle load limits. The implementation of axle load limits is a sub-regional problem which needs a sub-regional solution. ECOWAS needs to be involved in order to ensure a harmonized the implementation across the region. Participants also wondered why the pressure of the axle load policy implementation as being felt in Ghana, was not evident in the rest of the ECOWAS/UEMOA states (Borderless, 2013).

In a study entitled *"The Movement of Vehicles and Corruption on West African International Highways: Tema – Paga Corridor as a Case Study,"* Appiah (2010) examines the nature of bribery and corruption associated with travel along the country's road network. The study used both qualitative and quantitative methods, popularly known as hybrid design employed to elicit information from subjects. The researcher purposively sampled 135 respondents, where 100 questionnaires were administered to the Police and CEPS, while 10 top security personnel, who had in-depth knowledge in the study and 25 transit drivers, were interviewed. The sample was purposively

drawn in order to allow the study to identify the factors that influence the nature of bribery, corruption and associated delays, in order to generate information that will enhance an appreciation and understanding of the challenges that confront the road transport business along the major trucking highways in West Africa.

The study established that the delays at the checkpoints by the security personnel has adverse effect on the socio-economic development of the state because drivers carrying perishable goods easily offered bribes in order to avoid the long process of road checks, even when they are not guilty of any transport and traffic offence. Instances of Police or CEPS officials demanding bribes are rare, though occasionally, the security officials demanded bribes implicitly, putting drivers in a situation where the only way out was to pay a bribe. The fact that the officers did not solicit for the bribe, but was 'voluntarily' paid by the givers, gives one the impression that bribery has been institutionalized within the security services, where junior officers were accountable to their senior officers. The researcher described such a situation as a system of paying returns, where personnel were expected to pay up the chain of command a share of extortion money. Delays on the road, due to security officials working to extort from drivers also affect turn around time for drivers and have adverse economic effects.

2.5 Conclusion

This chapter is about a vivid examination of the issues regarding freight truck overload. It delved into the freight transport sector and the issue of

overloading trucks; examining the issues in both international and local literature. It also considered freight transport user issues like accessibility and traffic congestion, environmental impact, safety and technology. Other subsections of the chapter consists of the management strategies of truck volume and overloading as well as the factors that affect the competitiveness of the industry, including trade logistics and intermodal transportation, and how the industry itself is a factor in general competitiveness. Finally, a systematic review of predisposing factors of truck overloading, implications of truck overloading and freight management practices in selected developed and developing countries were examined while juxtaposing the situation in Ghana is the setting of the study.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

Chapter three covers the study setting, that is, the study area and the study institutions and organizations - the profile of the study area helps in appreciating the kind of findings emanating from respondents within the respective study areas. The research design, study population, sample and sampling technique and the data collection tools and data sources as well as methods of data analysis are also presented in this chapter.

3.2 RESEARCH DESIGN

The rationale for selecting qualitative research method is because it puts emphasis on the process of discovering how the social meaning is constructed and stresses the relationship between the investigator and the topic studied. Berg (2001:3) states that qualitative research refers to the meanings, concepts, definitions, characteristics, metaphors, symbols and descriptions of things. The work was purely qualitative because the phenomenon that the researcher sought insight into involved a lot of negotiations and meanings. The study also involves the collection of data with the use of a combination of semi-structured interviews, participant observation and focus-group discussion. This allowed the researcher to inductively observe real practices and interact with the respondents.

3.3 STUDY SETTING

Distance from Tema – Paga, which is known as the 'north-bound corridor, which takes about 70 per cent of the transit volumes, is 763.3 kilometres. It is envisaged that a transit truck that leaves the Tema Port, should cross the Paga border not later than seven days, failure to do so would result in payment of a fine. The Tema – Aflao, which is 167.3 kilometres, and Tema – Elubo also 380.9 kilometres form part of the Abidjan-Lagos corridor popularly known as ALCO. The transit traffic on the Aflao – Elubo corridor is very minimal. This is because of the Lome and Abidjan Ports, which are the main competitors of the Tema Port. (Field data, 2015).

- **Ghana Shippers Authority**

The Ghana Shippers Authority, which was established by NRCD 254 in 1974, was subsequently inaugurated in 1975. The Authority started operations as a subvented Agency under the ministerial supervision of the Ministry of Trade. In 1987, with the passage of the Ghana Shippers Authority Cargo Sharing Regulations L.I 1347, the Authority weaned itself from government subvention and became a net revenue earner supporting the foreign exchange requirements of Bank of Ghana (Ghanaweb, 2014).

- **Ghana Ports and Harbours Authority**

Ghana Ports and Harbours Authority is a Statutory Corporation established under the PNDCL 160 of 1986 to build, plan, develop, manage, maintain, operate and control Ports in Ghana. As a Port facility and service provider which began as Ghana Railway and Harbours Company in 1928 with only the

Port of Takoradi, the Authority owns and operates two Ports in Tema and Takoradi. The Takoradi Port is being re-positioned through an extensive expansion and modernization programme to better serve the needs of the oil and gas, mining and trading sectors. Its vision is to make the Seaports of Ghana the leading maritime hub and the beacon of trade and commerce in West Africa (GHPA, 2013).

- **Ministry of Transport**

The Ministry of Transport, which is a government establishment, was established in January, 2009 by re-aligning the functions of the erstwhile Ministries of Aviation, Harbours and Railways and the Road Transport Services. It is responsible for the formulation, coordination and monitoring of Aviation, Transport and Highway infrastructure policies and programmes for both public and private sectors of the economy. Its mission is to provide well integrated and well-maintained roads and transport infrastructure and services that meet national requirements and international standards on a sustainable basis (Peacefmonline, 2012).

- **Borderless Alliance**

The Borderless Alliance, officially launched in May 2012 with support from the USAID West Africa Trade Hub and its partners, provides an independent, sub-regional platform for leading producers, traders, transporters and financiers to propose and advocate for systemic and practical improvements to the movement of goods, transport, capital and services across West Africa (Borderless Alliance, 2012).

- **Ghana Highway Authority**

Ghana Highway Authority was established as a body corporate by GHA Degree 1974 (NRCD 298), and was later repealed by GHA Act 1997 (Act 540) which, however, continued the Authority in existence with responsibility for the administration, control, development and maintenance of the country's trunk road network and related facilities. Its mission is to provide a safe and reliable trunk road network at optimal cost by taking advantage of modern technology in road building, maintenance and new income-generating methods to facilitate socio-economic development in the country (Ministry of Roads and Highways, 2015).

- **Ghana Police Service**

The Ghana Police Service is the main law enforcement agency of Ghana. The Service is under the control of the Ghanaian Ministry of the Interior, and employs over 30,000 officers across its 651 stations. The service was established to perform the following functions: the detection of crime; the apprehension of offenders; the maintenance of law and order; the maintenance of internal peace and security (Ghana Police Service, 2015).

- **Customs Division of GRA**

The Customs Division of GRA, which is part of the country's security network, is responsible for collection of Import Duty, Import VAT, Export Duty, Petroleum Tax, Import Excise and other taxes. It also ensures the protection of revenue by preventing smuggling. This is done by physically patrolling the borders and other strategic points, examination of goods, and

search of premises, as well as documents relating to the goods. As a frontline institution at the country's borders, Customs also plays a key role in surmounting external aggression and maintains the territorial integrity of Ghana. In addition to these functions, it performs agency duties on behalf of other Government Organizations and Ministries by seeing to the enforcement of laws on import and export restrictions and prohibitions (Ghana Revenue Authority, 2015).

*** Private Transporter**

J. K. Horgle Transport &Logistics Limited was established in 1971 as a bulk peddling transporter in the petroleum business, which was then managed by Abla Horgle of blessed memory. About 27 years ago, it became a bulk product transporter for Shell and was later incorporated as a limited liability Company in 2003. The Company seeks to make a positive and sustainable impact on society by transporting fuel and allied petroleum products in safe and cost-effective manner. Its mission is to become a first class petroleum haulage company of choice and a leader in Ghana. J. K. Horgle Transport and Logistics (JKHTL) Limited for seven years running continued to win the Transporter of the Year Award. The Company is into the haulage for petroleum and allied, as well as engages in driver training (JKHTL, 2014).

3.4 POPULATION

The population is freight truck drivers on the three main corridors. Out of them, 20 were sampled based on purposive and availability sampling, after which there was one-on-one interviews with them. The 20 were sampled because the researcher needed information that they could give due to their being operational on the roads, and hence, they were sampled because they suited that categorization. Through some of their leaders, the researcher used available sample to sample those who were ready for the discussions. In all, 20 people were used for the one-on-one interviews, after which, 15 of them were used for a Focus Group Discussion (FGD) to validate the one-on-one interviews. The population of the research also involved key informants from some institutions that are involved in the road and transport industry that share common characteristics. Thus, GPS, Customs Division of GRA, GPHA, GHA, Axle Load Operators, GSA, MoT, Borderless Alliance, as well as JKHTL, who represented transport companies.

3.5 SAMPLE AND SAMPLING METHODS

Sampling is the process of selecting a number of study units from a defined study population (Varkevisser, Brownlee, & Pathmanathan, 2003). The researcher employed purposive sampling and convenience sampling to select a total of 30 persons as the sample for this study. Purposive sampling as indicated by Sarantakos (2005) is a non-probability sampling technique in which a sample is selected for a particular purpose or because of a particular reason. Consequently, purposive sampling was used extensively due to the

nature of the research and the fact that the involvement of certain people or particular institutions can enrich the study.

Among the truck drivers, a sub-sample of 20 respondents was chosen using convenience sampling method. This was applied due to the high challenge of getting access to truck drivers on highways. A quota sample of five participants for Tema – Elubo route, five for Tema–Aflao route and 10 for Tema - Paga routes were selected. The latter had the larger number of participants because it is where the chunk of the traffic volumes goes through to neighbouring countries such as Burkina Faso, Mali and Niger. The sub-samples of 10 from the participants of institutions and 20 from the drivers were then put together to form the total sample of 30. The selected participants were purposively selected to provide deep insight into the phenomenon of freight overload in the study area.

3.6 SOURCE OF DATA AND INSTRUMENT USED

The researcher of this study employed qualitative techniques in obtaining information from respondents on the research field. Data was gathered with the use of instruments such as semi-structured interview guides and focus group discussion with purposely and conveniently selected people. Participant observation was also employed to gather data. The qualitative data sources for the study included transcripts of tape-recorded interviews, documents, photographs and diaries. Data for this study was also gathered from secondary sources such as the use of relevant literature from text books, journals and

internet sources. Three methods of data collection were employed, which include focus-group discussions, in-depth interviews with key informants and qualitative data collection using structured questionnaires. Focus group participants were identified from the transit yard at the Tema Port.

There were three sets of semi-structured interview guides: targeted authorities who had in-depth knowledge in the study; another set went to transit truck drivers, whilst the third set had the MTTD and Customs Division of the GRA, who are enforcers of the law. Participants in the semi-structured interviews were made up of a sub-sample of 10 which included one personnel each, purposively selected from the Customs Division of GRA, GPHA, GHA, Axle Load Operators, GSA, JKHTL, MoT, BA and the GPS that had two personnel.

The methods of data collection are discussed according to the specific objectives of the study. Relevant data was obtained from both primary and secondary sources for objectives 1, 2 and 3. For specific objective 1, in order to identify what informs the nature of participation, literature was reviewed from secondary sources. Information was also obtained from empirical studies and other sources of relevant documentation. As regards primary data sources for the first specific objective, different types of interviews were held with various stakeholders to obtain the required information. The types of interviews include in-depth and one-on-one interviews as well as FGDs. All types of interviews were semi-structured interview guide to enable informants the freedom to express their views in their own terms by developing a rapport and dialogue, so as to provide reliable, comparable qualitative data.

3.7 VALIDITY

Although, validity was not measured through repeated testing of the instruments, the following issues were observed in the study: Validity is supported by extensive literature review by experts (including researchers and international experts in freight truck overload in developing countries and on the West African International Highways to be specific).

3.8 RELIABILITY

To assure data quality, the researcher pretested 10 per cent of the sample outside of the studied area to identify potential problems that was to arise during the actual data collection period. Pretest makes the researcher know whether the questions were going to be asked on the field were going to give the data the researcher intended getting. Completeness, accuracy and consistency of the collected data were checked on daily bases during data collection by the researcher. Observation was used to check the content reliability. Additionally, during the coding process, the researcher entered the data collected twice separately to maintain reliability. To ensure transferability, the data about participants, research context and setting were adequately provided.

3.9 PROCEDURE AND DATA ANALYSES

The data collection process took 20 days to complete. With the drivers, initial contact was made with them in person. The data were collected after thoroughly explaining the objectives of the study to each respondents and informed consent was obtained. The researcher engaged in focus groups

discussions where all grievances and suggestions were brought on board. Additionally, the researcher participated as a freight attendant from Tema to the three routes to witness first hand situations and pictures were taken to give a visual impression of the research problem.

In terms of data analysis, this was done thematically. Manual transcriptions of the recorded interviews as well as translations into English of all the interviews conducted in Twi, were done. Quotations were provided to give depth and details on certain phenomena where appropriate.

Therefore, data analysis involved distilling information from the transcription and translation of the generated information based on the electronic recording; and notes taken in the course of the focus group discussions. After reading through the translated transcriptions for identification of major opinions and attitudes that were expressed by the groups in line with the objectives and thematic areas for the study was done, master sheets were developed. These contained summarized information of the dominant and strongly held opinions; and identification of patterns and similarities in responses based on words used and context. Findings were thus generated and verbatim quotations have been used where necessary to provide supportive information for the various issues that came up in the discussions

3.10 ETHICAL CONSIDERATION

A central ethical implication of this study was the issue of anonymity. In order to mitigate any ethical issues due to the use of voice, the recordings were

deleted as soon as they were properly transcribed, to increase the degree of privacy. The respondents were informed that participation was voluntary and they could withdraw from the study without fear of being penalized by the researcher or the institute. The researcher informed all participants about the research project, their anonymity and that participation was voluntary. The participants from the Institutions involved were issued with informed consent forms, however, due to the conversational nature of semi-structured interviews, combined with the fact that many informants (drivers) were illiterate, the use of an informed consent form to the drivers were not applicable. Rather, the process was done orally in Twi for informants with limited or none English proficiency, and in English for others, mostly official personnel.

3.11 BENEFITS

The participants were informed that they would receive no monetary benefits from participating in the study. The researcher explained to the respondents that the findings could benefit them and add to the knowledge of the national database in terms of providing inputs for improving freight transportations practices in the region.

CHAPTER FOUR

DATA PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

The study aimed at determining the phenomenon of freight truck overload on West African International Highways, identifying the predisposing factors and their socio-economic implications. This chapter is thus concerned with the presentation of the analysis and interpretation of data pertaining to 20 freight drivers who ply their route on the three West African corridors of Ghana as well as officials of the institutions concerned with the activities on the International Highways. The chapter is divided into three sections: the first presents the demographic data of the drivers; the next section presents the descriptions of how stakeholders regulate freight overload, and the last section examines the disposing factors that give rise to freight overload on international highways.

4.2 DEMOGRAPHICS OF STUDY PARTICIPANTS

Out of the 20 drivers who participated in the study, one had plied the road between 1 and 5 years. Whilst two were found to be regular users of the International Highways for between 6 and 10 years, another two had driven between 11 to 15 years. The majority of the drivers (15) had 21 years and above working experience. The fact that majority of the respondent drivers had used the three International Highways as their main routes for more than 21 years suggested that they were very conversant with the activities of these

trucks and roads. Thus, they were an excellent database for the research topic. Interestingly, all the drivers interviewed were Ghanaians.

Additionally, most of the drivers (7) had Senior High School education as their terminal education which indicated that they were knowledgeable about the road traffic regulation and had the ability to read and interpret them. Six drivers had basic education while three others had other forms of education aside the ones stipulated by the researcher. These were predominantly drivers who had formal Arabic schooling known in Ghanaian parlance as 'Makaranta'. Meanwhile, four drivers did not have any form of education. On the whole, 16 out of the 20 drivers had one form of education or the other. Through the focused group discussions, those without any form of formal education were catered for. The researcher explained the research study in their respective local dialect for easy understanding.

4.3 DESCRIPTION OF FREIGHT TRUCK ACTIVITIES ON THE INTERNATIONAL HIGHWAYS

The majority of goods carried on these International Highways are mostly steel, tiles, salt, onion, general goods and vehicles. Salt is mostly carried from Tema to Sege along the Paga corridor; and steel from Ouagadougou in Burkina Faso. Overwhelmingly, all the drivers transit their respective goods from the Tema Port. The breakdown of the goods carried along these highways is illustrated below:

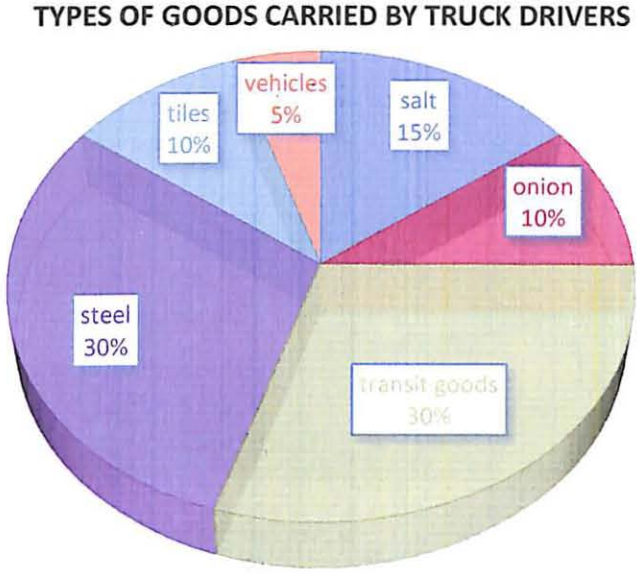

Figure 3: Types of goods carried by drivers. Source: Researcher's field data, August 2015

From the study the most carried goods transited from Ghana to any of the neighbouring countries were general (transit) goods and steel (n=6). Salt was the next most carried goods and three respondents confirmed it. It is interesting to know that the least carried goods were vehicles (n=2) and the main reason attributed to this was the high levies and duties imposed on the importation of vehicles into the various Ports in Ghana.

Figure 4: A long heavy-duty vehicle on road. Source

The drivers, freight custom agents and the Customs official are the main actors of the processes a truck goes through before permitted to ply the highways. First, through the respective custom agents, these truck drivers are accompanied to the shedding point at the Tema Port to load their goods. This process at times takes more than a day to load the goods onto the trucks depending on the drivers' willingness to pay their way through and it is the duty of customs security to verify the documents from the agents to check the goods before it is been loaded as enumerated by Yakubu, a freight driver who plied Tema - Paga:

> *At times when you enter the Port to load, the authorities can turn you away more than once before you are finally allowed to load with the excuse that there is no parking space. But in a situation that you give them something, then you would automatically not encounter such a problem. After loading too you can go round several times before getting a space to park to go through the necessary process before leaving the Port.*

The drivers are then issued additional documents (two to three days' time-frame) to be taken to the transit section of the Port and subsequent checks are made. More often than not, there would be no parking spaces, so drivers join long queues to wait for their turn. Some agents pay monies in order to overcome these delays. There are weighing scales at the harbour and though there had been countless complaints of their malfunctioning and therefore the readings of the scale not corresponding to that on the Tema Motorway, nothing had been done about it. When the scale reads above the required legal limit, truck drivers are required to shed off some load to meet the requirement. These agents again pay their way through by giving monies ranging from GH¢100.00 to GH¢1,000.00. When all these verification and documentation are satisfied by the Customs officers and the Police, the drivers are issued a sticker to be placed on the windscreen of their trucks. This is to serve that the goods loaded are verified.

4.4 FACTORS THAT GIVE RISE TO FREIGHT OVERLOAD ON INTERNATIONAL HIGHWAYS

This section of the chapter examines the factors among drivers that gave rise to freight overload. The researcher devised the common socio-economic characteristics that influenced freight overload on the roads and it is categorized into three sub-topics: the activities of Police/Authorities; weighing bridges; and fines and levies.

Findings from this research indicated the merchant owners exert pressure on the truckers to overload; the truckers overload because it is a long distance,

they want to maximize their investment; and also because of monies paid to the security personnel, they overload to recoup whatever amount they pay illegally on the road. Majority of the respondents (n=17) do not overload their trucks.

However, the rest of the respondents explained the penalties of when caught overloading and thus desist from it because the monies they would pay as bribes to the security officers far exceed the benefits of the additional loads. On the contrary, three drivers indicated overloading their trucks because of personal gains, fuel cost and other costs envisaged along these highways. These overloaded trucks provide a means to cover for the above-mentioned expenses. Below are samples of conversations affirming the above assertions.

> *Yes we sometimes engage in overloading. This is because the agents force us to do so otherwise, we should not get closer to the goods but to give way to those who would comply. But since we want to remain in business, you have no option than to go ahead with the directive. Imagine that you have waited for about a month before you get load, and because of overloading you say you would not, and then you will go hungry with your family (Baba, Field data 2015).*

In some circumstances, the drivers genuinely do not know their trucks are overloaded since the agents are responsible for those weighing and checks. These errors leave the drivers at the mercy of the security officials to be exploited since the drivers have to pay bribes so as to prevent the transit goods from going bad or from further delays. Samuel, a truck driver with 10 years' experience plying the Tema - Elubo corridor stated that,

> *A driver only gets to know at the Port that he has overloaded after loading and when he reaches the weighing scale. When it happens like that, the merchant/agent goes to sort out things*

with the people operating the scale secretly and after which he comes to order you to move. But I am not in a position to tell whether money exchanges hands or not, since the negotiation is between them alone (Field data 2015).

Alhaji Musah supported the argument by further highlighting that sometimes some of their transit goods are stolen at the Port in situations where loading was not completed at a schedule time. This creates further financial loses to the drivers who account to their respective merchants/agents irrespective of these unfortunate situations.

When you are loading your truck and in a situation that you have not finished the loading before dusk, the port authorities chase you out of the port, leaving the truck alone, only for you to realize the following day that your valuables have been stolen' (Alhaji, Field data 2015).

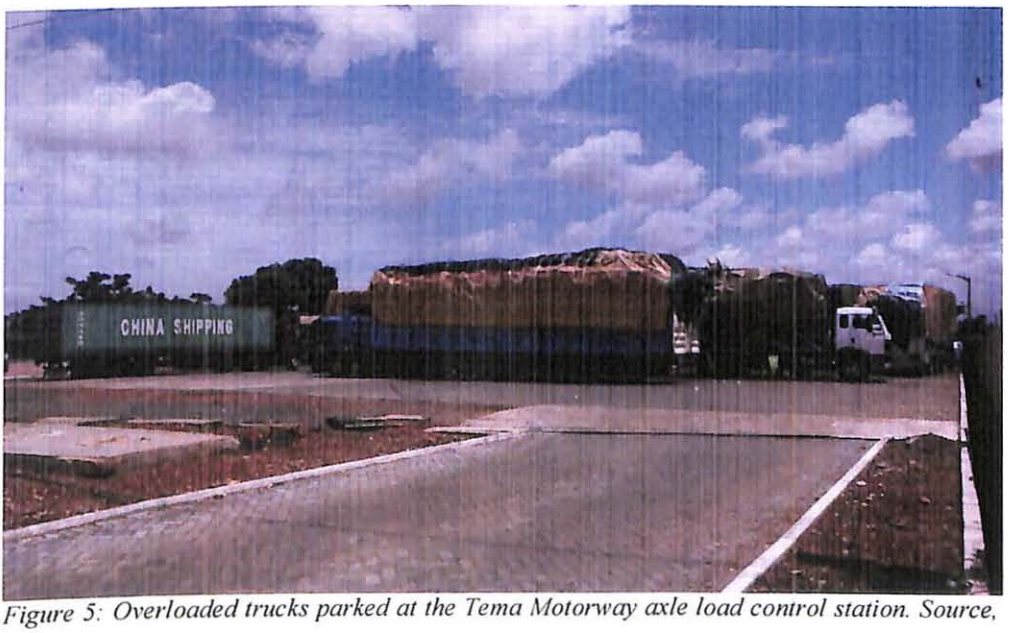

Figure 5: Overloaded trucks parked at the Tema Motorway axle load control station. Source, Appiah, 2015

According to the security personnel, the implication of freight truck overload damages the asphalt road surfaces and easily leads to break down of vehicles as result of the failure and other mechanical faults which also pose danger to other road users. This is indicated in the picture below which shows the damage caused to the road by freight trucks.

Figure 6: Cracks caused by freight overload. Source, GHA

Interestingly, most of the neighbouring countries do not have the 60 tonnes axle limit practiced in Ghana, so most of the foreign drivers find it difficult adapting to it. Some of them understand the ration in paying for overloading because of the economic profits so they normally pay bribes to the security personnel. From observation, the researcher detected more than 10 foreign freight trucks with huge load paying unreceipted monies to security officers. Failure to pay these monies leads to load shedding off as shown in the picture

below but generally the foreign truck drivers do comply with the huge bribery demands of the security personnel. It is worth noting that as the drivers begin their journey, they put money aside for payment along the routes, since it has become the 'tradition.'

Figure 7: Load being shed-off from an overloaded truck to an empty vehicle. Source, GHA

Extracting money from these truckers by the security personnel has now become a daily ritual that has to be performed before the drivers are allowed to move their trucks. Unlike a few years ago when Police personnel who checked drivers would go behind the vehicle with the driver to collect the money, they now take it openly without checking the documents and physical appearance of the vehicle and its load. So, as the vehicles approach the checkpoints, the security personnel immediately stretch out their hands and collect the money. They even make demands on the drivers when the drivers fail to give. Those at the barriers prefer to wait patiently for a driver or his assistant to move to them and perform the 'ritual.' Lack of confidence in government's ability to curb

rising road corrupt practices have tendencies to explode into a major social and economic crisis which may in turn lead to deepen the poverty level as well as undermine democratic processes in the country.

Figure 8:.A truck driver's mate returning from a Police checkpoint to join his truck. Source, Appiah, 2015.

4.4.1 Activities of Security Personnel/Authorities

It was observed that the MTTD, Custom officers, Police patrol harass the truck drivers for their personal selfish economic gains. Therefore, even though a transit sticker is boldly displayed, the security officers stop the trucks, still inspect their load all in the bid to find little faults on their trucks. The respondents who ply the Tema - Paga route complained of a peculiar action of the security officers who asked the drivers for axle weight scale so as to check the weight of their load. When a driver refuses to bring out a personal weight scale, that driver would be delayed for several hours. The question which

comes to mind is, are the truck drivers required to carry personal axle weight scale?

Along the Techiman – Kintampo - Bolgatanga route, the MTTD officers are well stationed along their roads even deep at night mainly to extort these truck drivers. Majority of the respondents confirmed that it is ritual to sandwich an amount of GH¢1.00 in a driver's licence to these security officers whenever they are stopped. Failure to do so would lead to seizure of the licence which attracts further 'bribe fees'. Some aggrieved participants indicated the following:

> *The Police armed escort barriers are not serving their purpose because the personnel rather take money from us and allow us to move without any escort. But they detain those who refuse to pay any money to them for several hours until such a time that they are comfortable to escort us from one point to another. The armed escort barriers are located at Techiman, Kintampo, Buipe and between Yapei and Buipe (Field data 2015).*

> *The escort barriers are not serving their purpose. The Police there are only interested in collecting monies from us. When you refuse to give them something, then they delay you unnecessarily, and in a situation where you are carrying perishable goods like onions, or cattle, you don't have any option than to pay to gain access to go. Police take between GH¢5.00 and GH¢10.00 from a cargo trailer. They detain those who are not ready to pay. At other checkpoints too, the Police take around GH¢5 and GH¢20.00. I can say that the least amount that I pay from Tema to Paga, is GH¢300.00. Customs take GH¢40.00 at each checkpoint (Field data 2015).*

Figure 9: A Policeman in a scuffle with a freight truck driver at a road barrier at Kintampo. Source: Appiah, 2007.

The security officers do not check anything on these trucks, but they purposely demand the GH¢1.00 so as to bypass these checks, and hence, their 'ritual statement' of "what did you bring for me?" whenever they stop these drivers. The number of minutes spent at these checkpoints by the drivers leads to sustainable loss of time and resources. Therefore, the drivers have no option than to pay their way through to prevent delays along their routes. The respondents indicated they spend a minimum of 30 minutes and a maximum of two hours at each checkpoint depending on the driver's willingness to pay these bribes.

> *There are times some Police officers treat us as if we are not human beings; at times they will demand for a document which you have never heard of and if you are unable to produce such a document you have to perform the "customary" before they would allow you go" Field data, 2015.*

Another respondent had this to say:

> *One day I was stopped by a young police officer who demanded for my PPE (Personal Protective Equipment). I asked myself since when have they asked that drivers should wear crash helmets when driving. The harassment and extortion by some of the police officers at various checkpoints according to the drivers often caused delay of goods on the roads resulting in a rising cost of goods.*

The operation of the security services at these checkpoints are summarized in a view expressed by a respondent from the Ghana Police Service:

> *There are Police barriers/operations, traffic police, visibility, and highway patrol to provide safety to travelers as well as protect lives and properties on the road. Police look out for genuineness of drivers' documents, proper loading, and contraband goods, among others. Police also check moving violation like speeding, lack of reflectors, un-renewed road worthy certificate, unlicensed drivers, and so on. When drivers flout the law, or for other ulterior motive by a few miscreant officers, they are detained or delayed at the checkpoints. Drivers are also detained if it involves a crash, or of sub-standard worn-out tyres. But when there are reports about Police harassment on the roads, such cases are referred to PIPS for investigation and those found culpable are dealt with (researcher's field data, 2015).*

However, some unlawful security officials had taken the law into their own hands erecting unauthorized security checkpoints to extort from drivers. *Table 3* therefore indicates that the Tema - Aflao corridor harbored the highest amount of money collection points from drivers since the route had the highest number of checkpoints. This assertion was supported by Ishmael, a member of the Tema Freight Drivers' Union:

> *The challenges we encounter on the road are numerous. Police and Customs harassment is too much; especially the Police physically assault us. When you want to challenge them, they call you too know. Other problems are the bad nature of some portions of the roads; too many speed ramps, which delays travel time; inadequate road sign indications and this can cause accidents; no emergency car parks along the road; some*

toll booth personnel don't issue tickets, and so on (Researcher's field data, 2015).

The number of both Police and Customs checkpoints and stops on each corridor depends on the time of travel. On the Tema – Paga corridor, while one person reported 35 checkpoints, four mentioned 40, three had 50 and two recorded 53. With regard to the Tema – Elubo route, two drivers reported that there are 15 checkpoints; one driver said it is 20, and two mentioned 25. On the Tema – Aflao corridor, one reported 10; three indicated there were 15; and one again stated there were 20.

Traditionally, checkpoints are meant to inspect the goods of the drivers and ensure proper documentation but recently these barriers are avenues for extortion for the security officers. It was no surprise that there were over 90 checkpoints along the West African corridor highways. Below is a data depicting the number of checkpoints along the three corridors.

Table 2 showing the various checkpoints. Source: Researcher's field data, August 2015

Number of Checkpoints	Official Number	Research study frequency
Accra-Paga	7	53
Accra-Elubo	5	21
Accra-Aflao	3	17
Total	15	91

4.4.2. Weighing Bridges

According to the drivers who ply the three West African routes in Ghana, it was a general notion that the axle load scale at the Tema Harbour axle load control unit was faulty and et the authorities had not attended to it for all these years. The readings of the Port axle scale therefore do not correspond to any of the readings at the axle load terminals on the International Highways. The drivers explained that it had not been fixed because the individuals working at the axle loading terminal at the Port use it as avenue to collect bribes for overloading.

Figure10: A truck loaded with cement going through a mobile weighbridge

Aside the stipulated government axle weighing stations, other individuals have constructed many terminals including mobile ones mandated to check axle loads. Consequently, most freight drivers disregard checking the weight of their freight at the Tema Port but rather other independent axle weight control terminals.

Figure 11: A truck being attended to at a permanent weigh bridge at the Tema Motorway.

The researcher observed that along all these routes, the drivers after leaving the Tema Port are not issued with any receipt from security officers who claimed to inspect their "already certified loaded trucks." Why the drivers are not issued with any receipts or stickers whenever they are done with one checkpoint is to be answered in the subsequent sections of this chapter when the findings of the authorities involved are analyzed and presented. The question which also pops up is what is the use of the transit sticker placed boldly on the windscreen of the trucks? It is assumed to inform all security officials that the particular truck has the legal weighing limit. Another school of thought would however be that the drivers may overload their tucks after the sticker is placed and then ply the roads, so it is very important to routinely weigh their loads along the highways.

All the respondents indicated that there were more than three load control stations located on the roads they normally plied. This validates the researcher's observant assertions how the drivers are exploited on these highways. Furthermore, for respondents who paid to the officers at the various axle loading stations along the three corridors in Ghana, 13 seems to amount as 'VERY HIGH'; and four as HIGH (n=4). No data was recorded for LOW which validates the researcher's observation of the huge amounts of money that exchanges hands between officers at axle load control stations and the drivers. As indicated earlier, three respondents did not pay any money at these terminals because their load was always within the legal limit.

Levies are well documented in the preceding sections of this chapter. Though the drivers knew that overloading destroyed the roads causing discomfort to themselves and other motorists as well as an increased in government budget to repair the damaged roads, they still engaged in it resulting to paying illegal monies along these International Highways. It is routine for the drivers to pay GH¢2.00 to the MTTD before and after entering and exiting Bolgatanga respectively; GH¢20.00 at Techiman, and GH¢5.00 at Tamale/Navrongo. An amount ofGH¢1.00 was further paid at smaller checkpoints before reaching the various borders. The sanctions stipulated by law to control overload indicated that fines payable should be made at the various Port before transit. The road statutes of Ghana prescribed a fine of GH¢100.00 to GH¢5000.00 for excess weight of one to 8.5 tonnes of overload respectively. The drivers face diverse sanctions ranging from paying a fine, prosecution and both as indicated in figure 4 when charged for overloading.

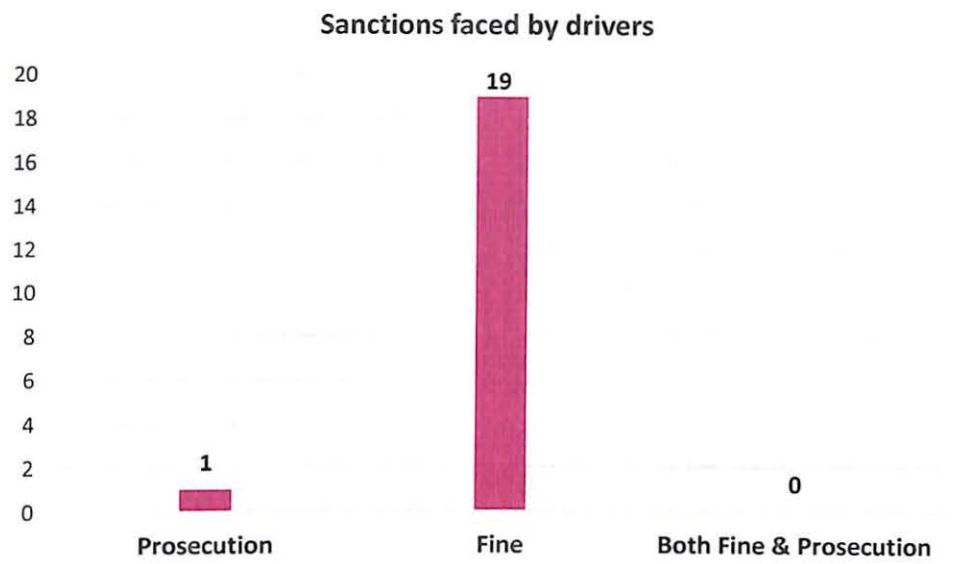

Figure 12: Sanctions faced by truck drivers. Source: Field data, August 2015

A majority of 19 drivers faced sanctions of fine for overloading. These fines are mainly spot fines collected by security officials (n=19). None of respondents faced a sanction of both fine and prosecution while only one respondent recorded prosecution as a sanction. The interpretation of the data is that even though freight drivers overload the security officials do not prosecute them but rather collect fines in form of bribes.

Interestingly, the Police armed escort services aimed at providing security protection to these freight trucks along the highways come with a 'fee.' The drivers are forced to pay between GH¢10.00 to GH¢15.00 at these Police armed escort points. They are not issued any receipts and these Police officers take the money before extending their legally mandated services to the drivers. Failure to pay the money would lead to the particular truck(s) exempted from the Police armed escort or the truck is delayed. Through the focus group discussions with the drivers, the researcher realized it takes a minimum of

GH¢500.00 worth of monies paid by drivers to various security officials at checkpoints to reach their destinations.

Figure 13: A Customs officer making account for monies taken as bribes made for the day at a checkpoint.

In summary, the main factor influencing drivers to overload along the International Highways was mainly due to cover their economic loss at the hands of security personnel and other officials along these routes. However, whether they overload or not, these security personnel definitely would demand bribes amounting to 100s of Cedis. Additionally, the goods owners compel these drivers to overload failure to do so would result in missing the opportunity to go near the goods. The Policemen including the patrol team do not perform their mandated duties of protecting motorists from criminals but

rather to exploit these drivers who ply along the three corridors in Ghana. Until bribery is checked among these security officials, overloading of trucks will continue. The next section presents findings from the authorities as to the implications of freight overload and its accompanying socio-economic problems to both the drivers and the country as a whole.

4.4.3 Regulation of Freight Overload

The Police and Customs officials were also interviewed and the findings are discussed below. The Police personnel were of the following categories: Traffic policing, Highways and Operation patrol, Visibility, Regional/Divisional and District barrier duty patrol. Each of these divisions has diverse duties and responsibilities assigned to them. The Police armed escort services under the highways and operation patrol division is to ensure safe passage to travelers and maintain law and order as well as protecting lives and property. They are located at Regional/Divisional/District barriers, snap checkpoints, and traffic duty posts at 50 km/hour speed limits on highways. There are also mobile armed escorts who are sited in buses as passengers and accompany buses to pass through areas ear-marked as 'criminal zones'.

The Regional and District Commanders of the security authorities and other stakeholders determine where barrier/checkpoints should be located. They also determine the number of security personnel posted to these International Highways. Additionally, the security officials especially the MTTD scrutinize the axle load certificates to check overload and check speeding violations. They also verify the contents of the load carried by these freight drivers. If any

truck exceeds the permitted freight load limit they are instructed to shed off the load, payment of fine, auctioning of goods /vehicles and prosecution as stipulated in section 96 of the Road Traffic Regulation, 2012 (L.I 2180).

It came to light that the security officials are aware of freight truck overload. They also indicated ignorance of weighing freight prior to departure for personal reasons are some of the reasons. Some participants of the focused group discussion suggested that the Customs authorities do not diligently enforce the freight weighing limit due to personal bribes they receive from the drivers.

> *The drivers contribute to the corruption on the road. They are always begging officials to allow un-receipted payment of money to allow them passage without delay. The importers give them money to pay such monies to these officials. But I believe that the implementation of the axle load regulatory policy is good. It seeks to protect the roads, but it can only be achieved when human intervention is stopped or reduced (Researcher's field data, 2015).*

The driver and owner of the freight or warehouses are responsible to check overloading among transit truck drivers on the road. Some freight drivers deliberately overload just to pay their way through as opined by the Borderless Alliance.

> *Officials at the Port and other loading points contribute to overloading by not ensuring all trucks are issued with weighing certificates from the ports. They collude with agents or merchants, and make the drivers face the consequences on the road (Borderless Alliance, field data, 2015).*

> *Some truckers try to negotiate their way with the officials when they are found to have overloaded through the exchanges of monies without receipts. Infact, the issue of overloading has*

over the years become a Regional concern. ECOWAS continues to create awareness, making overloading somehow unpopular, and gradually, by the end of the year, with a strong political will, everything would be over (Borderless Alliance, field data, 2015).

The authorities on their part have meetings with all stakeholders including the axle drivers to discuss and educate the drivers about the implications of overloading. The axle loading implementation committee organizes monthly workshops in conjunction with the Borderless Alliance to educate the public on overloading. The researcher chanced on a similar workshop and the following:

The factors that account to freight truck overload are economics gains. The agents compel the drivers to overload. Some port officials connive with these agents, only for the drivers to be caught along the way. I wonder if there are any sanctions available for such port officials because the drivers are only apprehended after leaving the ports, and in most cases, these drivers argue with us that our scales that are not correct. In some cases, they conspire with their colleagues, where a third trucks after leaving the Port, share its load on the two to go. But the issue is that it is very difficult dealing with these drivers. Some of them can be aggressive. They argue that it is only in Ghana that the axle load policy is implemented (Axle load Manager, field data 2015).

Though the introduction of axle load control mechanisms has reduced overloading of trucks, these authorities still sensitizes with the drivers about dangers of overloading through the various port transport unions.

The implementation of the axle load policy has reduced overloading to about 68 per cent. People, who are now conscious of the high penalty, try to avoid overloading. So, I can say that there is some level of sanity with the transit cargo. However, the policy has seriously affected Ghana. It has driven most of the truckers to neighbouring countries like Togo and Ivory Coast, and this has negatively affected the economic (Field data, 2015).

Trucks coming from Tema are systematically more harassed than trucks going the other direction. This is mainly due to the perceived value of imported goods (equipment, consumer goods), which is often considered a basis for higher extortion. Most trucks heading to Tema, hardly find goods to transport and as such, travel empty, and for that matter, these empty trucks experience less stoppage and inspection, which attracts less bribes than trucks carrying goods. They also spend less time at checkpoints. This is due to the lower level of legal procedures and the absence of urgency when making a delivery. Among the trucks that are stopped more frequently are the foreign ones, which pay more bribes.

The number of checkpoints tallies with the number of times a driver is stopped by a security officer at a physical checkpoint. The number of controls excludes the stops when the driver has to eat, sleep, load or unload goods. The delays refer to the total time spent at a checkpoint, excluding time to sleep or to eat, load or unload goods. The bribes are the amounts illegally paid to security personnel by the drivers, which excludes the bribes paid by freight forwarders or customs agents.

Another stakeholder, an official from the Ghana Shippers Authority, indicated some foremost aspects of monitoring freight transport. These covered retrospective discussions of freight overload from 2010 - 2015, as well as discussions on the changes experienced. This section covers an official review of the number of checkpoints on each corridor and highlights on the problems faced by drivers. It also covers factual percentage of transit goods carried on

these International Highways. It was advised that these extracts are only meant to affirm the authenticity and credibility of the data collected from the field. Findings revealed that the policy-makers, especially the MTTD and Customs do not perform their primarily duties and this was confirmed by an official of Ghana Shippers Authority.

He indicated that there have been deliberations on the situation of freight overloading five years retrospectively, he indicated the following:

> *The situation from 2010 till now will be a long period to rely on because from the 2009-2010 there was a dip in transit volumes, but from 2011 onwards when the volumes started picking up, that is when issues of road harassment and the rest became a problem but the situation was improved in 2013 but in 2014 we suffered a setback. The problem with the bottlenecks on the road is that you take a step forward and the gains are eroded, because of policy issues, security, and the lack of commitment from the authorities to maintain the gains that had been made.*

In a further probe to ascertain the positive and negative changes that had occurred since 2010, the official indicated that:

> *The standard practice is 100 kilometres before a checkpoint is erected according to Customs regulations. Presently, Police are not mandated to check freight vehicles because of a secret filming organized by the Ghana Shippers Authority. This footage exposed monies exchanging hands from Tema - Bawku involving Police officers and the Inspector General of Police issued a memo to that effect. This mechanism helped to the collapse of so many checkpoints. So the first positive thing is that there has been a minimal presence of Police officers on the road as compared to five years ago.*

> *Negatively, the authorities faced a challenge of Police personnel reassignment. After training these personnel, they are either reposted to Bolgatanga or to Techiman, for example, making funding for training of new personnel a major challenge. So we want to have a sustained plan of action that will engineer continuous capacity building. This plan would be financed by the USAID.*

He identified the traditional responsibility of the Police Service of providing security for freight truck drivers as the constant duty they had maintained five years on, regardless of the negative influences leveled against them.

> *The Police services are needed to enforce the transit laws because it is mandatory to have seven days to exist from Tema to Paga or any of the International Highway corridors, and failure attracts penalties. The Police provided security for drivers for the safe passage and ensure that they do not divert their course.*

The officer of the Ghana Shippers Authority also suggested solutions to arrest the problem of freight overloading. "The policy enforcers of road governance who are the MTTD have short term commitment in the way they embrace and patronize seminars and programs organized by the Ghana Shippers Authority."

He also made the statement that;

> *We formed a working group of road governance made up of the Police Service, Customs, Borderless Alliance, Ghana Shippers Authority, and West Africa Trade Hub. We started working to arrest the corruption - first step was a road verification trip, there were no much problem with the Elubo corridor because there is Lomé and Abidjan presence who are main competitors of Tema Port so the traffic is very minimal on the Abidjan-Lagos corridor.*

These recommendations are included in the next chapter. There were further elaborations as to the problems truck drivers face at the Ports. Aside the problems enumerated by the researcher from the research study, the Ghana Shippers Authority official made the following assertions:

> *As at 2010, the number of checkpoints that looked at transit was four on the Paga corridor. Those where we received problems of harassments were from Tema Motorway through*

to Nsawam, Offinso, Kubiase and Bolgatanga. 2014 it went overboard, harassment and locking the drivers because of lack of driver licence and any ridiculous excuses.

The problem between Techiman and Kintampo, for example, was the presence of armed robbery on that stretch of road. They brought in police armed escort which was not so well coordinated because there were ambushes behind the voyage carrying the escort. The best they could do about the situation was to have multiple checkpoints so that the drivers would not need escort services on those roads. Every 50 kilometres stretch of road, there were Police checkpoints which created problem as they harassed the drivers. Hence, presently we have removed all those checkpoints but increased the Police patrol and also supplied them with vehicles for effective security support.

On the number of checkpoints and the percentages of transit goods recorded on these corridors, the officials of Ghana Shippers Authority stated that:

The traffic on the north-bond corridor (i.e. from Tema to Ouagadougou-Bamako) takes about 70 per cent of the total transit volume. Last count in 2014, there were 47 checkpoints; the first quarter of 2015, however, recorded 52 checkpoints but following our caravan reports organized from August 2015 it has reduced to 17 checkpoints consisting of 13 Police and 4 Customs checkpoints. Some barriers have been collapsed and we have set an ECOWAS target of seven checkpoints from Tema to Paga.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of the research study was to highlight the state of the phenomenon of freight overload on West Africa International Highways. The objectives were to describe the trucking system as well as how the stakeholders regulate freight overload and to make recommendations as to how to minimize freight overload. As the Government of Ghana spends a lot of revenue annually renovating bad roads which could be an implication of freight overloading. The researcher found it important to study the phenomenon. Findings are to help policy-makers devise strategies to minimize overloading in Ghana. The research was purely qualitative, where the researcher conducted interviews, focus group discussions and participant's observation. In addition to these, descriptive reporting has been used to present major findings were discovered after data were analyzed. Data were analyzed and the following are the major findings:

5.2 MAJOR FINDINGS

From the research, steel, tiles, salt, onion, general goods and vehicles were the majority of goods carried on these International Highways. Salt is mostly carried from Tema to Sege along the Paga corridor; and steel from Ouagadougou in Burkina Faso. Overwhelmingly, all the drivers transit their respective goods from the Tema Port. The findings of the breakdown of goods

transited to the Tema Port to the neighbouring countries indicated a total percentage of 60 were general (transit) goods and steel. Salt was the third most transited commodity but generally, the high levies and duties imposed on the importation of vehicles contributed to the low percentage recorded from the survey (5 per cent).

Freight custom agents, the drivers, and the Customs officials are the main actors of the processes a truck goes through before permitted to ply the highways. To begin with, the custom agents accompany these truck drivers to the shedding point at the Tema Port to load their goods. This process took within a day to load the goods onto the trucks and it was the duty of customs security to verify the documents from the agents before loading the goods. The drivers are then issued additional documents (two to three days' timeframe) to be taken to the transit section of the port and subsequent checks are made. The weighing scales at the harbour are faulty due to the non-corresponding of the values recorded as compared to the readings at other axle weighing control stations. Aside the stipulated government axle weighing stations, other individuals have constructed many terminals including mobile ones mandated to check axle loads. Surprisingly, the researcher observed that along all these routes, the drivers are not issued with any receipt confirming payment after the load is weighed. Unsurprisingly, there was a 100 per cent response rate by the respondents on the account that there were more than three axle load control stations located on the roads they normally plied. This validates the researcher's observant assertions stated above of how the drivers are exploited on these highways.

The main factor influencing drivers to overload along the International Highways was mainly due to cover their economic loss at the hands of security personnel and other officials along these routes. It is however worthy to note that in most cases, the drivers are coerced by goods owners or agents to take overload or risk of not getting hired to cart the cargo. These security personnel would demand bribes from the freight drivers whether they overload or not. The moneys demanded as bribes amount to as high as hundreds of Cedis. The Policemen including the patrol team do not perform their mandated duties of protecting motorists from criminals but rather to exploit these drivers who ply along the three corridors in Ghana.

Through personal observation, the researcher chanced on money exchanging hands between security officials and drivers mainly because the number of stops/checkpoints on these highways is too much, so the drivers pay their way through so as to minimize the economic loss due to the delays. The most worrying aspect is a Police unit that has been instituted to provide armed escort to drivers travelling along the Kintampo – Paga stretch of the road, is now seen as a gold mine. Personnel at this unit who are to ensure that a relative number of vehicles are lined up in a convoy with the Police escorting them from one point to the other as a result of the rampant armed robbery case along the roads, rather take monies from truckers and allow them go individually without any security details attached to them. However, those who refuse to offer any bribes rather face the wrath of the Police who delay them unnecessarily. Until bribery is checked among these security officials,

overloading of trucks will continue. Notwithstanding the fact that the Police Administration through its Public Affairs directorate has issued a caveat instructing all of its men and officers at the various checkpoints spanning the Tema and Takoradi Ports through to the neighbouring landlocked countries including Mali, Niger and Burkina Faso to desist from stopping transit trucks that ply the corridor, the situation still persist.

Considering the activities that go on regarding freight trucking, and the reasons for those who overload, being to cut cost to have enough money to pay bribes and other expenses, and also looking at the point of view that overloading destroys the road, and yet the security personnel are prepared to collect money from the drivers and allow them off the hook to the detriment of the roads, and not sending them to court, the theory of the commons come to play because the road maintenance and construction is seen as the duty of government, and so nobody cares as to whether it is maintained or not. Although, the *Tragedy of the Commons* was related to population and land usage, it can be applied in the case of this study because the road is a common resource which needs to be maintained for the common good of the nation and its citizens. However, people treat it the way they like, and when the road is damaged it affects national development because more resources have to be diverted to rehabilitate the roads at the expense of other development needs. It must be noted that road users like freight forwarders or freight truck owners/drivers do not care about the road - they are just looking at their economic gains at the expense of the government having to repair roads, and

failure for government to repair the roads immediately, attracts criticisms and attacks.

There are numerous challenges truckers go through along the corridors. Notable among them are the numerous checkpoints (for instance, the Tema - Paga corridor has at the time of the researcher's participant observation, recorded about 55 checkpoints by both the Police and Customs, with the former having the highest of them; harassment, inconsistencies in axle weight readings; no suitable rest stop; lack of emergency parking space on the roads and as a result, in case of breakdown, the drivers have no option than to park on the main road, a situation that is dangerous to other road users. Tema - Elubo however recorded the least number of checkpoints, the other corridors experienced regular stops at district and regional boundaries.

Freight drivers and general road users face diverse extortion schemes by security personnel. From the findings it was clearly established that the MTTD, Customs officers, Police patrol do harass these truck drivers for their personal economic selfishness. Some Police personnel on the roads invariably assault some drivers, especially those who prove to be a bit knowledgeable of the law. The security officers stop the trucks and inspect their load all in the name to find little faults on their trucks even though a transit sticker would be boldly displayed. There had been several complains by the participants who ply the Tema - Paga route of peculiar actions of the security officers who asked the drivers for axle weight scale so as to check the weight of their load.

When a driver refuse to bring out a personal weight scale, the particular driver will be delayed for several hours. Failure to do so would lead to seizure of license which attracts further 'bribe fees'. The security officers do not check anything on these trucks, but they purposely demand an amount of GH¢1.00 so as to bypass these checks. The number of minutes spent at these checkpoints, which on the average is more than 30 minutes, leads to sustainable loss of time and resources, so drivers have no option than to pay their way through to prevent delays along their routes.

In summary, the main factor influencing drivers to overload along the international highways was mainly due to cover their economic loss at the hands of security personnel and other officials along these routes. It is however worthy to note that in most cases, the drivers are coerced by goods owners or agents to take overload or risk of not getting hired to cart the cargo. These security personnel would demand bribes from the freight drivers whether they overload or not. The moneys demanded as bribes amount to as high as hundreds of Cedis. The Policemen including the patrol team do not perform their mandated duties of protecting motorists from criminals but rather to exploit these drivers who ply along the three corridors in Ghana. Through personal observation, the researcher chanced on money exchanging hands between security officials and drivers mainly because the number of stops/checkpoints on these highways is too much, so the drivers pay their way through so as to minimize the economic loss due to the delays.

5.3 CONCLUSION

All these activities that the researcher has recorded vis-a-vis the actions of the security personnel and other officials can be described as corruption in a way. In a situation where drivers have paid for overloading and issued with weighing certificates, the Police don't ask for anything of that sort, when they stop these drivers but would rather ask the drivers to get down and do the 'right thing', where monies exchange hands.

Looking at Appiah (2010), which established that bribery and corruption has been entrenched within the security services, and that delays at the checkpoints by security personnel has adverse effect on the socio-economic development, this study has realized that there is still corruption and harassment on the road; money taking by security officials and some Ports personnel has not changed; waste of truckers' times by security personnel has also not changed – they have rather been heightened. Corruption on the road is even being done plainly because the officers are prepared to just stretch their hands to demand the money. To bend around the above rules, some truckers prefer to pay bribe at every stage of their operations, including registration, issuance and renewal of permits within Ghana and across the sub-region. The reason for paying bribes while on road, include traffic violation, plying overloaded trucks, entering no-entry zone or parking at no-parking places, among others. Alcohol abuse and the lack of proper documents by truck drivers are some additional reasons for paying bribes. The bribe is mostly paid at checkpoints, borders posts or during en-route stoppages by one or other

security agencies on pretext of checking documents. The practice of bribe payment is highly institutionalized to the extinct that the truck drivers receive some kind of 'receipts' in forms of tokens, stickers, and so on to move without hassles from authorities on some selected routes in the West African International highways.

The outcome of this study also highlighted the magnitude of the problem of freight overloading in Ghana with respect to the three International Highway corridors. The most worrying aspect is the extremely high degree of overloading. Apart from the impact on pavement damage and carbon emission, vehicle overloading would lead to a more hazardous road environment because of the limitations in vehicle dynamics and braking performance of the trucks to cope with the higher demands from the excess payload.

5.4 RECOMMENDATIONS

There should be proper weighbridges at the loading points so as to control the axle weight at source. The limit for axle load should be properly enforced to every truck driver regardless of the nationality of the truck.

Road authorities should increase public sensitization on axle weigh to educate road users, warehouse owners and vehicle owners on regulations 86 - 99 of Road traffic regulations 2012 (L.I. 2180). Warehouse and bulk goods distributors should be made to acquire their weighing machines to verify the load even before transit at the Port. This helps in checking the freight load

before transiting to the harbour. It is advised that the sensitization and advocacy works need to be continued so as to ensure sustainability of the long term and prevent the normal practice of revisiting whenever the same problem arises.

There should be an action plan organized by the authorities to help the security services understand the concept of international freight transportation as some of them do not have knowledge about that. This would outline their core duties to them and further minimize drastically the harassment faced by freight drivers at the hands of the police who supposedly stop the freight drivers to check travelling documents.

A comprehensive plan is underway by the Ghana Shippers Authority to find ways to make freight drivers follow strict mandated routes and adhere to the rules of the trucks tracking devices. This plan should be facilitated as soon as possible to help stop the negative practice of disabling the tracking devices by freight trucks. Disabling the tracking devices makes monitoring and controlling of these trucks very difficult which may lead to overloading especially on occasions where there is little or no security presence. This comprehensive plan should include a mechanism which records the details of drivers including their respective phone contacts. The freight drivers should be strictly monitored and in situations where there are delays they should be contacted by phone. This could be done by recording all truck transit details including their departure and arrival time.

The law should be strict on officials who collect bribes to help drivers in overloading. This would deter other security personnel from future engagement. Regardless of the statutory provision of the operations of the MTTD, some of them engage in bribery to the extinct that they detain drivers for hours refusing to pay bribers. Furthermore, there should be a proper instituted way of collecting fines for extra freight weight offences. The Ministries of Roads and Highways, and Transport through other stakeholders should device a means of verifying axle freight weight at checkpoints through the issuance of tickets or receipts. These receipts would also help curb the bribery issues since the offender knows that for every tonne of overloaded weight it goes into the Government coffers and not an individual, and for that matter, it minimizes the human influences.

There should be emergency car parks along the International Highways for freight drivers in case of breakdown or any other eventualities. Most of the drivers gave countless occasions where they faced mechanical faults and did not have anywhere to seek help. The MTTD in conjunction with other stakeholders should cater for the safety of these road users by providing emergency car parks. The numerous checkpoints, undue delays and harassment along the transport logistic chain are a bother, which must be urgently addressed. There is the need for action to remove the bottlenecks affecting the West African sub-regional trade to make the transport system more efficient to promote trade and grow economies of the countries in the sub-region.

The other disturbing finding is the 53 Police and Customs checkpoints erected between Tema and Paga alone, which force transporters to make illegal payments in excess of about GH¢500.00 per trip. Such a disturbing situation is unhelpful to economic growth. The overall effect of inefficient road governance along these corridors increases the cost of transiting goods for shippers and the loss of revenue to the Ports, freight forwarders and transporters in terms of handling charges. There should be attitudinal change on the part of public officials whose responsibility is to ensure that the state derived utmost benefits from the trade and transport industry.

The phenomenon of freight truck overload on Ghana's highways is not new and has been discussed in relation to the adverse effects on road pavement damage, and as such, it is important for those responsible for the maintenance and operation of highway infrastructures to monitor and prevent truck overloading. An overloaded truck is more likely to be involved in an accident, and has more severe consequences than the one that carries the permissible weight load. Heavy-duty truck drivers, especially the overloaded ones are equally prone to driver fatigue especially if it involves long working hours and long distance trips with limited recovery time.

5.5 SUGGESTIONS FOR FUTURE STUDIES

There should be future studies as to why security personnel collect bribes though they know the socio-economic consequences of overloading. The

research study limited itself to the reasons of overloading; however, a broader research into the reasons behind bribes collected by security personnel on the socio-economic implications of freight truck overload would be very helpful. Additionally, similar research should be extended to neighbouring West African countries so as to compare the relationship between the various factors causing freight overload.

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APPENDICES

APPENDIX 1: INTERVIEW GUIDE FOR POLICE & CUSTOMS

My name is Innocent Samuel Kwame Appiah, a Master of Arts student of the Ghana Institute of Journalism. This set of questions is designed to seek information for an academic research on the topic: "A SITUATIONAL ANALYSIS OF THE PHENOMENON OF FREIGHT TRUCK OVERLOAD ON WEST AFRICAN INTERNATIONAL HIGHWAYS" for the award of a Master of Arts Degree in Public Relations. You are a partner and stakeholder in contributing effectively to the success of this research. You are assured that any information provided in this interview will be treated as strictly confidential.

Thank you.

SECTION A: FACTORS & ACTIONS THAT GIVE RISE TO FREIGHT OVERLOAD

1. Which of these two security services do you belong to?

   Police [ ] Customs Division of GRA [ ]

2. For how long have you been a Police officer/ Customs officer?
3. What category of Police personnel do we have on the roads?
4. Why do we have Police armed escort on the roads?
5. How are the Police armed escorts located on the roads?
6. What are the things the Police look out for when they stop transit drivers on the roads?
7. Have there been some reports about Police harassment on the roads?

   Yes [ ] No [ ]

8. If yes, what actions do you take against such personnel?

9. Who determines the erection of a barrier or checkpoint along the roads?

10. How are Police/Customs personnel assigned to a duty post on the roads?

11. What are the things the Customs look out for at their checkpoints on the roads?

12. How many Police checkpoints/snap checks/barriers are on each corridor: Tema - Paga, Tema - Elubo and Tema - Aflao?

13. What is the mandatory number of Police checkpoints/barriers that are supposed to be on each corridor: Tema - Paga, Tema - Elubo and Tema - Aflao?

14. What processes do the Police follow at the barriers/checkpoints/snap checks?

15 How many Customs barriers/checkpoints are on each corridor: Tema - Paga, Tema - Elubo and Tema - Aflao?

16. What is the mandatory number of Customs barriers/checkpoints that are supposed to be on each corridor: Tema - Paga, Tema - Elubo and Tema - Aflao?

17. What processes do Customs officials follow at the checkpoints?

18. Is there collaboration between the Police and Customs in the discharge of their duties on the roads? Yes [ ] No [ ]

19. If yes, how?

20. If no, why?

21. How do you know whether a transit truck is overloaded or not?

22. What do you think accounts for overload of transit trucks on the highways?

23. Are transit truck drivers often detained or delayed at the checkpoints or barriers for any road traffic offence?

Yes [ ] No [ ]

24. If yes, why?

25. If no, what do you do to them?

26. Do the Police experience truck overloads as you go on duty on the roads?

Yes [ ] No [ ]

27. If yes, what do you do with offending drivers?

28. Do you think freight truck drivers contribute to overload?

Yes [ ] No [ ]

29. If yes, in what ways?

30. Whose duty is to check overloading among transit truck drivers on the roads?

26. What are the sanctions/ punishment for trucks overload or road traffic offence?

27. Some truck owners are 'above the law'. As a security officer you need to allow such vehicles pass even though they might be overloaded or committed some road traffic offence. Do you agree to this statement?

Yes [ ] No [ ]

28. What do you think should be done to reduce overload on the roads?

SECTION C: IMPLICATIONS OF FREIGHT TRUCK OVERLOAD

29. Do some drivers influence personnel to allow them pass freely without due checks?

Yes [ ] No [ ]

30. If yes, please explain

31. Has any driver requested that he carries an officer on board his overloaded truck or smuggled goods to enable him have free movement?

Yes [ ] No [ ]

32. How in your view does freight trucks overload affect the roads?

33. How in your view do drivers react to overloading when they are apprehended?

34. How do the drivers negotiate their way when they are found to have overloaded?

35. Are there sanctions for overload?

Yes [ ] No [ ]

36. If yes, what are they?

37. If no, why?

38. Are the sanctions followed?

Yes [ ] No [ ]

39. If no, what happens?

40. Are the laws against overloading effective?

Yes [ ] No [ ]

41. Any additional comments or observations?

APPENDIX 2: INTERVIEW GUIDE FOR AUTHORITIES

SECTION A: FACTORS & ACTIONS THAT GIVE RISE TO FREIGHT OVERLOAD

1. Where do the freight trucks usually load from in Ghana?
2. What facilities exist at these loading points to determine the correct axle load?
3. Do they function always?

   Yes [ ] No [ ] Not always [ ]
4. What policy documents on axle load are available to drivers?
5. Do you think the drivers are aware/have understanding of these documents?

   Yes [ ] No [ ]
6. Is there freight truck overload on the roads?

   Yes [ ] No [ ]
7. If yes, what in your view accounts for the overload of freight trucks from the ports and the other loading points?
8. Do some officials on the grounds at the ports and other loading points contribute to overloading of trucks?

   Yes [ ] No [ ]
9. If yes, in what way?
10. What sanctions are available for personnel on the grounds who contribute to freight truck overload at the Port and other loading points?
11. Do the truck drivers contribute to the overload?

    Yes [ ] No [ ]

12. If yes, in what way?

13. Do the drivers have access to policies, rules and regulations on truck overload?

Yes [ ] No [ ]

14. If yes, how?

15. If no, why?

16. Do you make the drivers to understand the policies, rules and regulations concerning freight truck overload?

Yes [ ] No [ ]

17. If yes, how?

18. If no, why?

19. Do drivers comply with these policies, rules and regulations?

Yes [ ] No [ ]

20. If yes, how?

21. If no, why?

22. And if no, what are the causes of the truck drivers' non-compliance to the policies, rules and regulations on overloading freight trucks?

23. How many weighbridges are supposed to be available in the country?

24. Are they all functioning?

Yes [ ] No [ ] Not always [ ]

25. If no, why?

26. Do all trunk roads in the country have weighbridges?

Yes [ ] No [ ]

27. If no, why?

28. Is there an effective axle load control strategy in the country?

Yes [ ] No [ ]

29. If no, why?

30. How is the axle load control strategy implemented in the country?

SECTION B: STAKEHOLDERS/AUTHORITIES' PERCEPTION & ACTION

31. Are all stakeholders including drivers aware of the axle load control strategy in the country?

Yes [ ] No [ ]

32. How often do the authorities meet with drivers and other stakeholders to discuss the issue of axle load control and overloading of trucks?

33. Are the drivers made aware of the dangers associated with truck overload?

Yes [ ] No [ ]

34. What strategy is adopted to make drivers aware of the dangers associated with freight truck overload?

35. How far has the institution of axle load control strategy reduced overloading of trucks?

36. Have you ever reviewed any research work on the overloading and movement of freight trucks?

Yes [ ] No [ ]

37. If yes, which one?

38. If no, why?

39. And if yes, how far has the research influenced your decisions and implementations?

40. Would you agree with the perception that there is some level of corruption among the Operators of Axle Load Control Stations?

    Yes [•] No [ ]

41. How would you rate the level of corruption among the managers of the Axle Load Control Stations?

    Very High [ ] High [ ] Low [ ] Non-existent [ ]

SECTION C: IMPLICATIONS OF FREIGHT OVERLOAD

42. What are the implications of freight truck overload on the roads?
43. How in your view do truckers or merchants react to overloading?
44. How do the drivers negotiate their way when they are found to have overloaded?
45. Are there sanctions for freight truck overload?

    Yes [ ] No [ ] Not always [ ]

46. If yes, what are they?
47. If no, why?
48. Are these sanctions followed?

    Yes [ ] No [ ]

49. If no, what happens?
50. How in your estimation do freight drivers contribute to the corruption on the road?
51. Your general comment on the issue of overloading on the roads?

SECTION D SOCIO-DEMOGRAPHIC CHARACTERISTICS

Position: ..... Sex:

Institution.....

Number of years in employment

[ ] 1 - 5 years

[ ] 6 - 10 years

[ ] 11 - 15 years

[ ] 16 - 20 years

[ ] 21 years and above

APPPENDIX 3: INTERVIEW GUIDE FOR DRIVERS

SECTION A: FACTORS & ACTIONS THAT GIVE RISE TO FREIGHT OVERLOAD

1. Which trunk road do you ply regularly?

   Tema - Paga [ ] Tema - Elubo [ ] Tema - Aflao [ ]

2. What type of goods do you often carry in your truck?
3. Where do you normally load your goods from?
4. What are the processes you go through at your loading point?
5. How do you know whether your truck is overloaded or not?
6. Do you sometimes overload your truck?

   Yes [ ] No [ ]

7. If yes, what are the major reasons for overloading your truck?
8. If no, why don't you overload your truck?
9. Do the authorities at the Port charge you for overloading your truck?

   Yes [ ] No [ ] I can't tell [ ]

10. If yes, who charges you?
11. And if yes, about how much do you normally pay?

    Yes [ ] No [ ] I don't know [ ]

12. And do they issue receipts to that effect?

    Yes [ ] No [ ] I can't tell [ ]

13. If no, what do they do to you?
14. How many checkpoints are located along the route you ply?
15. How many times are you stopped along the route you ply?
16. What are the processes you go through at the Customs checkpoints?
17. Do you encounter any problems with Toll booth operators?

Yes [ ] No [ ]

18. If yes, in what way?

19. How many Police barriers or checkpoints or snap checks are along the route you ply?

20. What are the processes you go through at these checkpoints or barriers or snap checks?

21. Do the security officers at these checkpoints or barriers take your papers?

Yes [ ] No [ ]

22. Are you often detained or delayed at the checkpoints or barriers?

Yes [ ] No [ ]

23. How much time do you normally spend at each checkpoint or barrier?

24. What do you think is the effect of your being delayed or detained at a checkpoint or barrier?

25. What do you do to avoid being delayed or detained at these checkpoints/barriers?

26. Are you aware of any sanction or penalty for overloading your truck?

Yes [ ] No [ ]

27. What kind of sanctions or penalty are you made to face when you overload your truck?

Fine [ ] Prosecution [ ] Both Fine & Prosecution [ ]

28. If the sanction is a fine, about how much money is taken from you?

29. And do they normally issue receipts?

Yes [ ] No [ ] Not always [ ]

30. If no, what do you do?

31. Have you ever been educated or met by the authorities on the issue of overloading?

Yes [ ] No [ ]

32. If yes, how many times were you educated or met by the authorities?

Never [ ] Once [ ] Twice [ ] Thrice or More [ ]

33. What were you told as the major challenges for overloading your truck?

SECTION B: SOCIO-ECONOMIC IMPLICATIONS OF FREIGHT OVERLOAD

34. Do you think overloading affects the road?

Yes [ ] No [ ]

35. If yes, in what ways do you think it can affect the roads you use?

36. How many axle load control stations are located on the road which you normally use?

None [ ] One [ ] Two [ ] Three or more [ ]

37. Are all the weighbridges functioning to weigh your trucks when you get there?

Yes [ ] No [ ] Not always [ ]

38. Have you ever paid money to an officer at the axle load control station without being issued with receipt to enable you pass because you overloaded your truck?

Yes [ ] No [ ]

39. How would you rate the level of money paid to officials of the axle load control stations without receipts?

Very High [ ] High [ ] Low [ ] Non-Existent [ ]

40. Do you have access to the axle load control policy document as a driver?

Yes [ ] No [ ]

41. Do you have access to any policy document, rules and regulations on freight truck overload as a driver?

Yes [ ] No [ ]

42. On the whole as a driver, what are the challenges do you normally encounter on the road?

43. What in your view can be done to minimize these challenges/problems on the road?

44. Your general comments

SECTION C: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Truck Number.....
2. Number of years as a truck driver

[ ] 1 - 5 years

[ ] 6 - 10 years

[ ] 11 - 15 years

[ ] 16 - 20 years

[ ] 21 years and above

3. Education

[ ] Nil

[ ] Basic

[ ] SHS

[ ] Tertiary

[ ] Others .....

Country of origin.....