UNIVERSITY OF GHANA

CHALLENGES AND PROSPECTS OF MULTIMODAL TRANSPORT OPERATIONS IN GHANA

BY

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DECLARATION

I, Jemima Ansa-Otu declare that this thesis with the exception of quotations and references contained in published works which have all been identified and acknowledged, is entirely my original work and it has not been submitted in part or whole for another degree elsewhere.

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DATE

DATE
DEDICATION

This dissertation is dedication to the fond memory of my late mum, Mrs. Grace Ansa-Otu and my late dad, Mr. William Ana-Otu, my husband, Mr. Eugene Aidoo and lovely children, Kevin, Keren, Kristen and Kirsten.
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ABSTRACT

Transport is a crucial determinant of production and trade patterns globally and consequently also of economic integration. Participation in world trade depends largely on the type, quality and costs of transport services. Access to state-of-the-art transport services is a key determinant for the competitiveness of individual firms and countries. Improved physical, institutional and legal infrastructure creates an environment for efficient transport services that facilitates both investment and trade. Therefore multimodal transport has become an important part of global transport and hence economic development of many countries.

Multimodal transport and logistics services are essential for the development of international trade hence Ghana in her quest to become the gateway in the West Africa sub-region needs to improve among other factors, her transport services.

Hence this research to identify the challenges and prospects of multimodal transport operations in Ghana. The research consists of five chapters under the following headings: introduction, literature review, research methodology, analysis and presentation of findings and conclusions and recommendations respectively.

From the various findings it was concluded that, though the various respondents were aware of multimodal transport the majority had little knowledge of its existence in Ghana and that a successful implementation of multimodal transport in Ghana on a large scale will be very beneficial to all parties involved and hence the nation at large. Some of the benefits include reduced cost of transport and reduced time of delivery. Some challenges that are mitigating against the successful Multimodal Transport in Ghana include poorly developed transport infrastructure and poor link between the various transport infrastructure available.
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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Countries globally trade internationally to enhance their economic growth. Such international trade is done by way of importation and exportation of commodities and this is achieved through various modes of transportation. Transportation has therefore become the backbone of international trade and hence the backbone of economic development of nations (ESCAP, 2005).

The availability of efficient transport services is crucial for economic development, as transport services are essential for reaching world markets, strengthening global integration and attracting foreign investment.

At the Johannesburg Conference on Sustainable Development in 2003, delegates recognized that to benefit from liberalized trade opportunities, developing countries especially needed to improve their transport and communication infrastructure, as well as their multimodal transport services. Infrastructure, superstructure and equipment for the movement of containerized goods from door to door, including sea, road, rail and air connections as well as ports and terminals, need to be available (Anderson and Morgenstern, 2003).

In recent decades, globalization and technological developments have changed the approach to production, trade and transportation, both in developed and in developing countries. This trend has resulted in a continuous shift of manufacturing to countries offering a competitive advantage (ESCAP, 1997). Thus logistics has become an important value-added service in the global production and marketing of goods. Transport has become part of the production and distribution process to obtain a competitive advantage for manufactured goods.
Increased containerization has facilitated the through movement of goods using different modes of transport and is expected to double in the next decade. To meet this demand, major carriers are investing in larger container ships (UNCTAD, 2003).

International transport of goods is increasingly being carried out on a door-to-door basis using two or more modes of transportation. Shippers and consignees are often interested in dealing with one party who arranges transportation of goods from door to door and assumes contractual responsibility throughout the journey. Local transport service providers have an important role to play as subcontractors of the multimodal transport operator. Access to state-of-the-art transport services is a key determinant for the competitiveness of individual firms and countries. Advances in information and communication technology have greatly impacted on trade and transportation processes. (UNCTAD, 2003)

Development of sophisticated management and operating systems has provided efficient cost control, optimum use of equipment and a new quality in customer relations. Developments in transport of goods therefore has direct implication on the trade development and hence the economy of nations (UNCTAD, 2003).

The nature of transporting goods has changed significantly. Enterprises worldwide are entering the just-in-time generation, which means shipments are smaller, but more frequent. This has resulted in organisations becoming less dependent on large storage warehouses. Instead, production is initiated by demand among the customers. This way has shown to decrease costs in an organization by less over-produced items going to waste and less cost for storage. This so called “production on demand” increases the importance of a functioning chain of transport. Hence, an occurred delay in delivery is having worse consequences, since the production is dependent upon a timely delivery (Ganado and Kindred, 1990)
The nature of transport has also changed in other perspectives. The door-to-door transport is today a common concept by the increased use of containerized transport (Al-Muhaisen, 2005). The handling of containers is simplifying the transport concept as a whole and has led to an increased multimodal transport.

1.2 STATEMENT OF PROBLEM

Transport is of increasing relevance to the development of nations. It is a crucial determinant of production and trade patterns and consequently also of economic integration. For some countries it may also contribute to the generation of income through the provision of transport services. Participation in world trade depends largely on the type, quality and costs of transport services. Access to state-of-the-art transport services is a key determinant for the competitiveness of individual firms and countries. Improved physical, institutional and legal infrastructure creates an environment for efficient transport services that facilitates both investment and trade.

Multimodal transport and logistics services are essential for the development of international trade hence Ghana in her quest to become the gateway in the West African sub-region needs to improve among other factors, her transport services. Hence this research is to identify the challenges and prospects of multimodal transport operations in Ghana.

1.3 OBJECTIVES OF THE STUDY

The primary objective of this dissertation is to examine the challenges and prospects of multimodal transport operations in Ghana.

The study will also assess the measures for addressing the challenges of multimodal transport operation in Ghana.
1.4 JUSTIFICATION OF STUDY

- A successful completion of this study will make available information that will inform stakeholders on how the development of transport infrastructure is affecting the development of multimodal transport operation in Ghana.
- Secondly, this study will make available information that will encourage prospective Multimodal Transport Operators to venture in multimodal transport operations in Ghana.
- Finally, this research will serve as source of an academic reference for further research in this chosen topic.

1.5 SCOPE OF THE STUDY

The area of study for this dissertation will be Tema. It will focus on the port sector of the city. Tema is currently a major focal point for international trade within Ghana. It is also striving to become a maritime gateway within the West African sub region. It is responsible for the major share of all goods traded globally within the country. It is a major logistics centre in Ghana where different factories importing and exporting different commodities globally are located.

It will include the following within Tema:

- Scanning Companies,
- Road Transport Operators,
- Logistics Service Providers,
- Ghana Institute Of Freight Forwarders,
- Customs Excise, And Preventive Service,
- Ghana Ports and Harbours Authority,
1.6 RESEARCH METHODOLOGY

The main sources of data for this research work will be both primary and secondary data. The primary data will be collected through observations, questionnaires and interviews. The questionnaires will be distributed to the majority of the targeted population. A small section of the targeted population deemed to have in-depth knowledge will be interviewed to obtain in-depth knowledge on the subject matter of this study.

The secondary sources will include research papers of various scholars, articles, magazines, various publications prepared by organizations on this subject matter as well as literature and available information on the official websites of the organizations that are related to the study.

The research design that will be employed will be the survey approach. Simple random sampling will be employed for the distribution of the questionnaires whiles purposive survey approach will be employed for selecting those who will be interviewed.

The sample size for this study will be sixty-five (65) consisting of GPHA workers, freight forwarders, importers and exporters, ministry of transport workers, shipping lines and agencies, warehouse operators, CEPS, logistics service providers, and road transport operators and container scanning companies. The number of questionnaires allocated to each target group is based on such factors as their role in the port, their population, how often they get involved in the multimodal transport operation and other similar factors.
1.7 RESEARCH QUESTION

This study will seek to address the following among others:

- What are the factors affecting the development of multimodal transport operations in Ghana?
- What are the benefits Ghana is likely to derive from the successful implementation of multimodal transport operations?

1.8 ORGANISATION OF STUDY

This dissertation shall consist of five chapters.

Chapter one gives an introduction to the study. It will cover the background of the study as well as the statement of problem, objectives, justification, scope and organisation of the study.

Chapter two is the literature review. It will look at various literature supporting the study.

Chapter three will discuss the research methodology, and covers the population, sample size, sampling procedures, method of data collection, data collection instruments, data analysis and the field problems.

Chapter four will cover the presentation and analysis of primary data obtained from the field.

Chapter five will cover the conclusions drawn from the analysis of the findings and recommendations.
CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter consists of a review of literature from different writers on the different aspects of the subject matter.

2.2 SUMMARY NOTES

2.2.1 Multimodal Transport

The United Nations in their Multimodal Transport Handbook (1995) defined multimodal transport as the form of transport where the carrier organising the transport takes responsibility for the entire door-to-door transport and issues a multimodal transport document.

Multimodal transport is therefore a concept which places the responsibility for transport activities under one operator, who then manages and co-ordinates the total task from the shipper’s door to the consignee’s door ensuring the continuous movement of the goods along the best route, by the most efficient and, cost-effective means, to meet the shippers requirements of delivery.

A multimodal transport operator (MTO) acts as a principal and therefore as a “carrier”, because the MTO contracts with the shipper to carry goods by one or more modes of transport as may be necessary. The MTO accepts total responsibility and liability to perform the transport contract and becomes the sole interface point for the shipper’s transport function (Zuidwijk, 2003).
According to the United Nations Conventions on International Multimodal Transport (1980), 'Multimodal Transport' means the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country.

"Multimodal transport operator" means any person who on his own behalf or through another person acting on his behalf concludes a multimodal transport contract and who acts as a principal, not as an agent or on behalf of the consignor or of the carriers participating in the multimodal transport operations, and who assumes responsibility for the performance of the contract (United Nations Conventions on International Multimodal Transport 1980).

"Multimodal transport contract" means a contract whereby a multimodal transport operator undertakes, against payment of freight, to perform or to procure the performance of international multimodal transport. (United Nations Conventions on International Multimodal Transport 1980)

"Multimodal transport document" means a document which evidences a multimodal transport contract, the taking in charge of the goods by the multimodal transport operator, and an undertaking by him to deliver the goods in accordance with the terms of that contract.

When a multimodal transport service is provided, the multimodal transport operator (MTO) becomes liable from the point of origin to the point of destination. The MTO issues one transport document that will include invoice for freight charges, and also a guarantee for the transit time (UNCTAD, 2001).

From that point onwards, the MTO concludes a number of sub-contracts with individual carriers, road, rail, shipping lines, port authorities, terminal operators, stevedores, etc., on the MTO's own name, not that of the shipper or the consignee. Only the MTO is entitled to take
delivery of the goods from each actual sub-carrier and pass them to the next sub-carrier. The MTO, in acting as a principal, is therefore responsible for the whole transport chain (UNCTAD, 2001). From these definitions, the main activities and responsibilities of the MTO in a multimodal transport operation will include:

- Acceptance of cargo from the shipper’s premises
- Organisation of inland transportation of cargo
- Obtaining of export clearance from customs
- Organisation of main transport such as sea or air
- Terminal handling at point of destination
- Obtaining of import clearance at the point of destination
- Organisation of inland transport to the consignee’s premises
- Delivery of cargo to consignee

2.2 FORMS OF MULTIMODAL TRANSPORT OPERATIONS

2.2.1 Land-Sea-Land

This involves the movement of cargo in containers by truck from a point on land to a port for onward transport by sea and finally delivering the cargo by truck on land (ESCAP, 1997). An example of this form of the transport is as follows:

An empty container is picked up from the line’s container yard and trucked to the shipper’s factory in for stuffing; thereafter the FCL is trucked and transported by ocean vessel to the final destination.

2.2.2 Road-Air-Road

This involves a combination of air carriage with truck transport. In this method, road transport is used for trucking air freight over long distances, sometimes across national
boundaries, to connect with the main bases of airlines operating long haul services. Several airlines are building up a number of trucking hubs in Europe to act as focal points for road-based feeder operations. (ESCAP, 1997) Some airlines provide road service to cities which they either find uneconomical to service by air, or to which they do not enjoy landing rights. This road transportation is often effected with their own trucks, to and from their own facilities, but on occasion they do also use highway common carriers.

2.2.3 Sea-Air-Sea
This combines the economy of sea transport and the speed of air transport. It is increasingly becoming popular on several international trade routes like the Far East- Europe route (ESCAP, 1997).

The economics of this combination mode favour high value items like electronics, electrical goods, computers and photographic equipment as well as goods with high seasonal demand such as fashion wear and toys.

This multimodal operation is particularly applicable where the route to be covered combines large distances via land and water, and where transit time is important.

2.2.4 Rail-Road-Inland Waterways-Sea
This combination mode is in common use when goods have to be moved by sea from one country to another and one or more inland modes of transport such as rail, road or inland waterways, have to be used for moving the goods from an inland centre to the seaport in the country of origin or from the seaport to an inland centre in the country of destination.

2.2.5 Mini-bridge
This involves the movement of containers, under a through bill of lading issued by an ocean carrier, by a vessel from a port in one country to a port in another country and then by rail to a second port city in the second country, terminating at the rail carrier's terminal in the second
port city (ESCAP, 1997). The mini-bridge offers the consignor a through container rate inclusive of rail freight up to the final port city in the country of destination. The railways are paid a flat rate per container by the ocean carrier for the rail transit.

2.2.6 Land bridge

This system concerns itself with shipment of containers overland as a part of a sea-land or a sea-land-sea route. In this case also, the railways are paid a flat rate by the ocean carrier who issues the through bill of lading (ESCAP, 1997).

2.3 BENEFITS OF MULTIMODAL TRANSPORT OPERATIONS

- **Minimises time loss at trans-shipment points**

Multimodal transport, which is planned and coordinated as a single operation, minimises the loss of time and the risk of loss, pilferage and damage to cargo at trans-shipment points. This is due to the fact that the multimodal transport operator maintains his own communication links and coordinates interchange and onward carriage smoothly at trans-shipment points.

- **Provides faster transit of goods**

The faster transit of goods made possible under multimodal transport reduces the disadvantages of distance from markets and the tying-up of capital. In an era of globalization the distance between origin or source materials and consumer is increasing thanks to the development of multimodal transport.

- **Reduces burden of documentation and formalities**

The burden of issuing multiple documentation and other formalities connected with each segment of the transport chain is reduced to a minimum.
• Saves cost

The savings in costs resulting from these advantages are usually reflected in the through freight rates charged by the multimodal transport operator and also in the cost of cargo insurance. As savings are passed on to the consumer, the price reduces which results in an increase in demand.

• Establishes only one agency to deal with

The consignors have to deal with only the multimodal transport operator in all matters relating to the transportation of his goods, including the settlement of claims for loss of goods, or damage to them, or delay in delivery at destination.

• Reduces cost of exports

The inherent advantages of multimodal transport system will help to reduce the cost of exports and improve their competitive position in the international market.

2.4 HISTORICAL BACKGROUND OF MULTIMODAL TRANSPORT

Over the past decade the world has witnessed strategic considerable developments. The movement towards globalization and trade liberalization paralleled by the revolution in information and communications technologies is continually advancing and significantly altering existing markets and triggering a race for the future.

Apparently a new economic era is materializing and driving more countries toward global economic integration. While partnering and forming alliances are companies best response, regionalism is emerging as countries powerful option in the face of these on-going global trends. National borders are increasingly disappearing and trade barriers are dismantled.
Progressively, these developments require changes in the type and quality of transport and logistics services and infrastructure. Therefore, new patterns of provision and management of transport have emerged (Al-Muhaisen, 2005)

Multimodal transport is essentially an international through-transport combination with various modes of transport such as ship, rail, truck, aeroplane, etc., primarily through the use of containers. Containers will ensure the transport of unitised cargo from its origin to its final destination, with efficiency and least possible risk (Banomyong, 2000).

According to Woxenius (1998), the concept of using freight containers dates from Roman times but container transport by rail was introduced by the Liverpool & Manchester Railway that used Roll-on/Roll-off containers for the hauling of coal back in 1830. The Birmingham & Derby Railway introduced an early form of multimodal transport with the transfer of containers between rail wagons and horse carriage in 1839. New York Central Railway developed and inaugurated the first dedicated container service from Cleveland and Chicago on March 19, 1921. Containerisation grew further as a means of ‘door-to-door’ transport, spurred on by the development of the Piggy Back System where trailers themselves were carried aboard specialised ‘Flat cars’ (ESCAP, 1983).

Containers for sea transport appeared during the 1960s and should be attributed to the innovativeness and the sea/land strategy of McLean, the founder of Sea-Land Inc.

Mc Lean was originally an executive of a trucking company who took over a shipping company and was therefore familiar with road/rail combination operations for land transport, hence the decision to apply the concept with sea transport to enable sea/land through transport with the help of standardised dimensions for containers. It followed that containers had to be fitted with special devices for the ease of switch between different modes of transport and that ships had to be equipped with rail structures known as cell-guides for
vertical sliding and stowing into the ship's hold. Containers ultimately enabled multimodal transport to be applied to most types of general cargo by means of an international standardised transport unit. Only particularly large (out-of-gauge) and particularly heavy cargoes cannot be containerised. Containerisation is basically the largest form of unitisation (Banomyong, 2000).

Containers are loaded with products at the shipper's premises and sealed, and then they are carried over to the consignee's premises intact, without the content being taken out or re-packed en route. This is the essence of container transport as well as multimodal transport, but containerisation is not synonymous with multimodal transport. Containerisation contributes to a higher efficiency in the development of multimodal transport operations. The focus, now, is more on the organisation of the transport industry and the synchronisation of the integrated logistical system (Hayuth, 1987).

According to an earlier UNCTAD (2003) "The world of transport has changed considerably over the last few decades. International transportation of goods is increasingly carried out on a door-to-door basis, involving more than one mode of transportation. While there is little information on the overall proportion of cargo transported by multiple modes, data on the development of containerized traffic provide some highly significant indications, as containers are designed for transportation by different modes. Since the advent of the container in the mid-1960s, there has been an exponential increase in containerized transport, which is forecast to continue well into the future:

World port container throughput, i.e. the number of movements taking place in ports, grew from zero in 1965 to 225.3 million moves in 2000. Container traffic was estimated to more than double until 2010 to almost 500 million moves; this represents an annual growth rate of
9 per cent. While globally the major container flows are between Asia, Europe and North America, there are significant flows within all regions (UNCTAD, 1997)

World seaborne trade in containerized cargo was estimated to more than double from 1997 to 2006 to around 1 billion tons. Most of this containerized cargo will involve transportation by more than one mode before reaching its final destination. In particular the first and the last leg of any door-to-door transaction will usually involve transportation by another mode, such as road or, to a lesser extent, rail (UNCTAD, 2002).

In 2000, the value of manufactured goods exported globally (F.O.B.) had risen to 75 per cent of all goods exported (4.7 trillion US$ out of a total of ~ 6.2 trillion US$). The majority of manufactured goods moving by sea will be transported in containers (UNCTAD, 2003).

Increasingly, multimodal transport (MT) is becoming an integral part of logistics services that include transport, storage and distribution together with the related information management. This integrated approach is important to bear in mind as it allows three technically related functions and consequently types of cost, namely transport, handling/storage and administrative cost, to be combined under the heading of logistics.

### 2.5 MULTIMODAL TRANSPORT SERVICES

When a multimodal transport service is provided, the multimodal transport operator (MTO) will be liable from the point of origin to the point of destination (UNCTAD, 2001). He will issue one transport document that will include invoice for freight charges, and also a guarantee for the transit time. From that point onwards, the MTO concludes a number of sub-contracts with individual carriers, road, rail, shipping lines, port authorities, terminal operators, stevedores, etc., on the MTO's own name, not that of the shipper or the consignee. Only the MTO is entitled to take delivery of the goods from each actual sub-carrier and pass
them to the next sub-carrier. The MTO, in acting as a principal, is therefore responsible for the whole transport chain (UNCTAD, 2001)

It is fundamental for the MTO to have the ability to design and provide effective transport arrangements. When goods are moving from the shipper to the consignee, it may take up to ten or twelve distinct transport links. At each transfer point, goods will then be unloaded and loaded, waiting or stored, weighted, checked or recorded, packed/reconsolidated. All of these intermodal transfers cost time and money, thus affecting the competitiveness of particular routes (Beresford & Savides, 1997).

2.6 THE RELEVANCE OF MULTIMODAL TRANSPORT AND LOGISTICS SERVICES FOR DEVELOPMENT

2.6.1 Logistics Services and Trade

International freight costs have an impact on trade equivalent to customs tariffs or the exchange rate. A reduction in the cost of transport directly stimulates exports and imports, just as an increase in the exchange rate makes exports more competitive, and a reduction in national customs tariffs lowers the cost of imports. (Al-Muhaisen, 2005)

Spurred by trade liberalization, customs tariffs have dropped to levels where in many cases any additional reduction would now no longer have a significant impact.

In the case of Latin American and Caribbean exports to the United States, for example, customs duties reach an average of 1.86 per cent of their value, compared with a 4.45 per cent share accounted for by international transport costs (Micco and Perez, 1999)

In the case of Africa landlocked countries on average pay four times as much for the international transport leg of their imports than do developed marked economies (UNCTAD, 2001).
The price of the vast majority of traded goods is exogenous for developing countries. If the shipping of imports becomes more expensive, higher inflation ensues as a result of the increased cost of imported goods; in the case of intermediate and capital goods, this also increases the costs of local production. If export freight costs increase, the result is a drop in earnings for the exporting country or simply the loss of a market, depending on the elasticity of demand and the availability of substitutes (Limao and Venables, 2001).

Econometric estimates suggest that the doubling of an individual country's transport costs leads to a drop in its trade of 80 per cent or even more (Hummels, 1999).

Spending on transport is also increasing because of improved quality of service, especially greater dependability and “just in time” (JIT) delivery. As a result, the inventory component within the overall cost of logistics declines, while the transport component rises. In the case of the United States, for instance, it is estimated that during the two decades up to 2002, spending on transport rose by 160 per cent, while spending on inventories grew by only 27 per cent during the same period. While in 1982 inventory spending was still higher than spending on transport, today spending on transport is almost double that of inventory carrying costs (Prologus, 2003).

Trade is increasingly taking place in intermediate goods, which are used in international production processes and which require JIT deliveries of inputs. JIT in turn requires a particularly sophisticated and efficient transport system, which tends not to be available in developing countries. In a context where management does not know whether delivery of required raw materials or intermediate goods is going to be on time, either expenditure on inventory holding goes up or the producer becomes uncompetitive himself, because he will not be able to deliver JIT to his own customers (Alcorta, 1995).
The freight and insurance costs of international transport also tend to increase as a percentage of gross domestic products (GDP). The reason for this is that trade is growing at a faster pace than GDP. In the 1990s, the rate of growth of world exports was more than double that of GDP, and although transport costs have fallen as a percentage of the value of trade, trade itself has expanded with its international freight’s share of GDP. (UNCTAD, 2001)

Even as a percentage of the value of traded goods only, the incidence of the cost of international transport tends to increase. With growing trade in intermediate goods, the price of most exports, also from developing countries, nowadays includes an increasing component of transport costs of inputs, which themselves have been imported and transported from abroad. Trade, logistics services and development are thus ever more closely linked with one another.

2.6.2 Trade, Logistics Services and Development

The geographical location of countries is less relevant for today’s trade patterns than are transport and logistics services. Countries mainly trade with one another depending on their patterns of production, income and whether they belong to economic blocs, with the distance between them also having some bearing. The latter gives an advantage to countries located in the “centre of gravity” (Limao and Venables, 2001)

There is an assumption of a close link between distance and transport costs, which would explain why countries closer to one another trade more than with countries further away. In practice, however, distance also tends to have a bearing on other characteristics of countries, which lead them to trade more. Above all, geographical closeness provides scope for alternative modes of transport, thereby boosting competition and reducing prices for service and this again encourages trade further. An expanding volume of trade reduces the unit costs of transport (Hayuth, 1987).
Also, it allows greater differentiation between different services in terms of speed, frequency, reliability and security. Thus, improved transport and logistics services can initiate a virtuous cycle, where improved services lead to more trade, which in turn encourages investment in better transport and other logistics services. The challenge for policy makers is to foster such a cycle, and to avoid being trapped in a vicious cycle, where a lack of trade would discourage the supply of transport services, which again would deter trade. (UNCTAD 2001)

Empirical studies have concluded that – *ceteris paribus* – greater transport costs lead to lower levels of foreign investment, a lower savings ratio, reduced exports of services, reduced access to technology and knowledge, and a decline in employment. It is estimated that a doubling of transport costs leads to a drop in the rate of economic growth of more than half a percentage point (Radelet and Sachs, 1998).

This impact may appear low, but it should be noted that lower growth over the long term results in a sizeable variation in per capita income. Hence, it comes as no surprise that variables related to transport costs may account for 70 per cent of the statistical variation in per capita income between countries (Redding and Venables, 2001)

### 2.7 FREIGHT FORWARDERS AND MULTIMODAL TRANSPORT

According to the International Federation of Freight Forwarders Association (FIATA) Module rules for freight forwarding services Art 2(1): Freight Forwarding Services are services of any kind relating to the carriage, consolidation, storage, handling, packing or distribution of the goods as well as ancillary and advisory services in connection therewith, including but not limited to customs and fiscal matters, declaring the goods for official purposes, procuring insurance of the goods and collecting or procuring payment or documents relating to the goods.
A freight forwarder is a person concluding a contract of freight forwarding service with a customer. The freight forwarder therefore is the entity which moves goods from point of origin to overseas point of destination and ensures that internationally traded merchandise arrives in good time, safe condition and at the most economical cost (NTTFC, 2005).

Specifically, freight forwarding firms arrange transportation from shipper’s factories or warehouse to ports, packing or consolidation of cargo if necessary according to the customer’s needs, documentation, customs clearance, shipping (land, sea and air or combination thereof), unpacking or deconsolidation if required and delivery at customer designated location(s).

2.7.1 Legal classification of freight forwarders

Today freight forwarders can have many different functions and based on those functions freight forwarders can be classified as:

- Agents for the customer or performing carrier
- Performing carrier/principal

2.7.1.1 Freight forwarders as an agent

An agent is a person who represents another person called the principal with the purpose of placing the principal in a contractual or other relation with others during a transaction.

Therefore as an agent a freight forwarder acts on behalf of his principal and his activities are usually based on the principal’s instructions. The freight forwarder serving as an agent only seeks for and provides means for undertaking the tasks given by the principal.

The principals are therefore liable for their agent’s damages or loss whose liabilities are as a result of lack of due diligence on the part of their agents in the performance of the contract. Consequently the agents are not liable for the damages or losses of third parties engaged for
the purposes of transportation, loading or discharging of cargo and others services unless they can prove that they acted with due diligence in choosing such third parties (Ulfberg, 2009).

The agent therefore will be responsible for all damages due to negligence on his part.

For example engaging in a contract of loading or discharging where due to his negligence in declaring the actual weight of the cargo, an equipment with a safe working load (SWL) far below the actual weight was used which resulted in the damage of the cargo.

2.7.1.2 **Freight forwarder acting as a principal**

Freight forwarders should be considered as principal when they issue a transport document in their own name; when the offer created can be reasonably assumed that they have undertaken liability as a carrier, and finally when the freight forwarder transport goods by road (Ramberg, 2005).

When acting as principals, freight forwarders are liable to the extent that their fault or neglect has caused or contributed to the loss, depreciation, damage or delay of goods. But consideration shall be taken into account whether the freight forwarder has approved or failed to object to the customer’s demands concerning the goods when assessing the forwarder’s liability for handling, loading, unloading of goods, insufficient packaging and incorrect addressing or marking of the goods.

Under the conditions of a principal, the freight forwarder is held liable for all losses or damages of third parties he contracts or for any other liability which has its origin unknown.

Upon agreement with the customer, the freight forwarder can limit his liabilities.
2.8 THE NETWORK AND UNIFORM LIABILITY REGIMES

In dealing with liabilities involved in multimodal transport, two approaches have been identified; the United States' approach known as the Network Liability System and the European approach known as the Uniform Liability Solution (Ramberg, 2005). In the network liability system, the liability of the contracting carrier is governed by the rules relating to where the goods took place. The advantage with this regime is that it ensures that the liability of the contracting carrier does not exceed the liability of the performing carrier. The limitation with this system is that it is sometimes hard if not impossible to localise where the damage took place and it can therefore be difficult to determine what type of transport regulation should be used (Ulfbeck, 2009).

In the uniform liability system the liability of the contracting carrier is instead the same regardless of where the damage took place. The advantage with this system is that, it is simple and creates predictability since the liability of the contracting carrier is not dependent upon the place where the damage took place. Nevertheless, it's disadvantage is that the contracting carrier may not always be able to pass on the loss to the performing carrier responsible for the damage, and the carrier may be governed by rules other than those made applicable to the contracting carrier (Ulfbeck, 2009).

2.9 LEGAL ENVIRONMENT OF MULTIMODAL TRANSPORT OPERATION

In spite of various attempts to establish a uniform legal framework governing multimodal transportation, no such international regime is in force. The MT Convention has failed to attract sufficient ratifications to enter into force. The UNCTAD/ICC Rules for Multimodal Transport Documents, which came into force in January 1992, do not have the force of law (UNCTAD, 2001).
They are standard contract terms for incorporation into multimodal transport documents. The rules, being contractual in nature, will have no effect in the event of conflict with mandatory law.

The lack of a widely acceptable international legal framework on the subject has resulted in individual governments and regional/sub regional intergovernmental bodies for taking the initiative of enacting legislation in order to overcome the uncertainties and problems which presently exist.

Consequently, concerns have been expressed regarding the proliferation of individual and possibly divergent legal approaches which would add to the already existing confusion and uncertainties pertaining to the legal regime of multimodal transport.

A multimodal operation is made up of a number of unimodal stages of transport, such as sea, road, rail or air. Each of these is subject to a mandatory international convention or national law.

The problem which arises is the extent to which these mandatory conventions applicable to unimodal transportation would also influence contracts where more than one mode of transport is involved, (Ramberg, 1992) bearing in mind that some of these unimodal conventions also extend their scope into multimodal transport. (Faber, 1994) For example the CMR (article 2), CIM (article 2) and Montreal Conventions specifically include provisions dealing with transport of goods by more than one mode. In any event, in the absence of a uniform liability system for multimodal transport, the liability for each stage of transport is determined by the relevant unimodal convention or national laws which adopt varying approaches to issues such as the liability questions. Therefore, the liability of the multimodal transport operator for loss or damage to goods can differ depending on which stage of
transport the loss has occurred. The question becomes even more complicated if the loss or damage cannot be localized, or the loss occurs gradually during the entire transport.

Thus, the greatest shortcomings of transport law are considered to be: “the vast differences between the rules governing the different transport modes, different grounds of liability, different limitations of liability, different documents with a different legal value, different time bars. Where it may perhaps be said that this particularism did not constitute such a formidable problem when unimodal transport was still predominant, its drawbacks become glaringly obvious when attempts are made to combine different transport modes, and, inevitably, their different legal regimes into a single transport operation governed by a single contract” (De Wit, 1995).

As every intermodal transaction is made up of unimodal stages, there are a number of mandatory international liability regimes which are potentially applicable, depending on their scope of application and the stage of transport where a damage or loss occurs. Accordingly, two different regimes may apply to the same claim or the regime which applies can only be identified when it is clear during which stage of the transport a loss/damage occurred. Where the stage of transport during which a loss or damage occurred cannot be identified, where loss or damage occurs gradually, or in the course of (value-added) services ancillary to transportation (e.g. warehousing), a carrier’s liability will often depend on national laws and/or contractual agreement. As a result, both the applicable liability rules and the degree and extent of a carrier’s liability vary greatly from case to case and are unpredictable. Liability for delay in delivery is not always covered by the same rules as liability for loss of or damage to the goods.”
2.9.1 Previous Attempts to Achieve Uniformity

The establishment of a widely acceptable legal framework for multimodal transport has proved to be a difficult task. The first attempt was made by the International Institute for the Unification of Private Law (UNIDROIT) and dates back as far as to the 1930s. The work within UNIDROIT resulted in the approval, by its Governing Council in 1963, of a “draft convention on the international combined transport of goods”, (UNCTAD, 2001) which was later revised by an ad hoc committee of experts. This was followed by the preparation and adoption by the Comité Maritime International (CMI) of a “draft Convention on Combined Transport-Tokyo Rules” in 1969. The draft conventions prepared by UNIDROIT and CMI were combined into a single text in 1970, under the auspices of the Inland Transport Committee of the UN Economic Commission for Europe (UN/ECE), known as the “Rome Draft.” This draft was further modified by meetings of the UN/ECE and the Intergovernmental Maritime Consultative Organization (IMCO) during 1970 and 1971, and came to be known as the “Draft Convention on the International Combined Transport of Goods”, better known as the “TCM draft”, using the French acronym for “Transport Combiné de Marchandises.” The TCM draft never went beyond the drafting stage. Its provisions were, however, subsequently reflected in standard bills of lading such as the Baltic and International Maritime Conference’s (BIMCO) Combiconbill and in the “Uniform Rules for a Combined Transport Document” of the International Chamber of Commerce (ICC).

The UN/IMCO Container Conference, which was to finalize the TCM draft in 1972 recommended that the subject be further studied, particularly its economic implications and the needs of developing countries. UNCTAD was proposed to undertake this task. The Intergovernmental Preparatory Group (IPG) was then set up by the Trade and Development
Board (Decision 96 (XII) of May 1973) and, following an extensive investigation, eventually prepared the draft convention leading to the adoption of the United Nations Convention on International Multimodal Transport of Goods 1980 (Selvig, 1980)


Although the Convention has not succeeded in attracting sufficient ratifications to enter into force, its provisions have significantly influenced the type of legislation enacted in a number of countries/regions.

The following are some of the main features of the Convention:

The Convention applies to all contracts of multimodal transport between places in two States, if the place of taking in charge or delivery of the goods as provided for in the multimodal transport contract is located in a contracting State (article 2). While the Convention recognizes the right of the consignee to choose between multimodal and segmented transport, its provisions are to apply mandatorily to all contracts of multimodal transport falling within the provisions of the Convention (article 3).

The liability of the multimodal transport operator (MTO) for loss of, or damage to, goods as well as delay in delivery is based on the principle of “presumed fault or neglect”. That is to say that the MTO is liable if the occurrence which caused the loss, damage or delay in delivery took place while the goods were in his charge, unless the MTO proves that he, his servants or agents or any other person of whose services he makes use for the performance of the contract, took all measures that could reasonably be required to avoid the occurrence and its consequence (Article 16(1)).
A key issue in the context of establishing the liability of the MTO for loss of, or damage to, goods has been the choice between the “uniform” or “network” system of liability.

Under the “uniform” system the same liability regime is applied to the entire multimodal transport, irrespective of the stage at which the loss or damage occurred. Under the “network” system, the liability of the MTO for localized damage (i.e. damage known to have occurred during a particular stage of transport) is determined by reference to the international convention or national law applicable to the unimodal stage of transport during which the damage occurred.

The Convention adopts a uniform system of liability of the MTO for both localized and non-localized damage (article 16 (1)), except that in cases of localized damage the limits of liability are to be determined by reference to the applicable international convention or mandatory national law which provide a higher limit of liability than that of the Convention (article 19).

The period of responsibility of the MTO includes the entire period during which he is in charge of the goods, that is from the time he takes the goods in his charge to the time of the delivery (article 14). The MTO is also liable for the acts and omissions of his servant or agent or any other person of whose services he makes use for the performance of the contract (article 15).

The MTO’s liability for loss of, or damage to, goods is to be limited to an amount not exceeding 920 units of account per package or other shipping unit, or 2.75 units of account per kilogram of gross weight of the goods lost or damaged, whichever is the higher. If, however, the multimodal transport does not, according to the contract, include carriage by sea or by inland waterway, the limitation amount is raised to a higher level of 8.33 units of account per kilogram of gross weight of the goods lost or damaged, without alternative
package limitation (article 18 (1) and (3)). The limitation of liability of the MTO for loss resulting from delay in delivery is calculated by reference to the rate of freight, that is an amount equivalent to two and a half times the freight payable for the goods delayed, but without exceeding the total freight payable under the multimodal transport contract (article 18 (4)). The MTO, however, is not entitled to limit his liability if it is proved that the loss, damage or delay in delivery resulted from an act or omission of the MTO done with the intent to cause such loss, damage or delay or recklessly and with knowledge that such loss, damage or delay would probably result (article 21).

The Convention provides for a period of two years within which legal proceedings relating to international multimodal transport have to be instituted in order to prevent the claim from being time-barred. A recourse action by the MTO for indemnity against subcontractors, however, is possible even after the expiry of limitation period, provided that it is permitted under the law of the State where proceedings are instituted and that it is not contrary to the provisions of another applicable international convention (article 25).

The Convention includes extensive provisions on documentation covering negotiable and non-negotiable multimodal transport documents, their contents, reservations and evidentiary effect (articles 5 to 10).

Concerning jurisdiction, the Convention gives a wide option to the claimant to institute an action for claims relating to international multimodal transport. It clearly provides that the plaintiff may sue in one of the following places:

(a) The principal place of business or residence of the defendant;

(b) The place where the MT contract was made;
(c) The place of taking the goods in charge or the place of delivery; or (d) Any other place agreed upon and evidenced in the MT document (Article 26).

Following the growing trend in international commercial disputes, the Convention also recognizes arbitration as an alternative to judicial proceedings. It provides that the parties may agree, in writing, to submit their disputes under the Convention to arbitration. As to the place of arbitration, the options available to the claimant for jurisdiction are also available in case of arbitration (article 27).

2.9.3 UNCTAD/ICC Rules for Multimodal Transport Documents

Pending the entry into force of the UN Convention on International Transport of Goods 1980, the UNCTAD’s Committee on Shipping, by resolution 60 (XII) of November 1986, instructed the secretariat to elaborate model provisions for multimodal transport documents, in close collaboration with the competent commercial parties and international bodies, based on the Hague and Hague/Visby Rules as well as existing documents such as the FBL (FIATA Bill of Lading) of the International Federation of Freight Forwarders Association (FIATA) and the ICC Uniform Rules for a Combined Transport Document.

Following this resolution a joint UNCTAD/ICC working group was created to elaborate a new set of rules for multimodal transport documents. During a series of meetings the joint UNCTAD/ICC working group completed the preparation of the UNCTAD/ICC Rules for Multimodal Transport Documents in 1991. The Rules entered into force on 1 January 1992 (UNCTAD, 2001).

The UNCTAD/ICC Rules for Multimodal Transport Documents have been incorporated in widely used multimodal transport documents such as the FIATA FBL 1992 and the
The main features of the UNCTAD/ICC Rules are the following:

The Rules do not have the force of the law but are of purely contractual nature and apply only if they are incorporated into a contract of carriage, without any formal requirement for "writing" and irrespective of whether it is a contract for unimodal or multimodal transport involving one or several modes of transport, or whether or not a document has been issued (Rule 1). Once they are incorporated into a contract, they override any conflicting contractual provisions, except in so far as they increase the responsibility or obligations of the multimodal transport operator. The Rules, however, can only take effect to the extent that they are not contrary to the mandatory provisions of international conventions or national law applicable to the multimodal transport contract (article 13).

Similar to the MT Convention, the liability of the MTO under the Rules is based on the principle of presumed fault or neglect. That is to say that the MTO is liable for loss of, or damage to, the goods and for delay in delivery, if the occurrence which caused the loss, damage or delay in delivery took place while the goods were in his charge, unless he can prove that no fault or neglect of his own, his servants or agents or any other person of whose services he made use of for the performance of the contract, caused or contributed to the loss or delay in delivery (Rule 5.1). Although the basis of liability of the MTO under the Rules is similar to that under the MT Convention, there are significant differences between them.

Firstly, unlike the MT Convention, under Rule 5.1, the MTO is not liable for loss following delay in delivery unless the consignor has made a declaration of interest in timely delivery which has been accepted by the MTO. Secondly, if the multimodal transport involves carriage by sea or inland waterways, the MTO will not be liable for "loss, damage or delay in
delivery with respect to goods carried by sea or inland waterways when such loss, damage or delay during such carriage has been caused by:

- act, neglect, or default of the master, mariner, pilot or the servants of the carrier in the navigation or in the management of the ship;
- fire, unless caused by the actual fault or privity of the carrier” (Rule 5.4).

These defences, however, are made subject to an overriding requirement that whenever loss or damage resulted from unseaworthiness of the vessel, the MTO must prove that due diligence was exercised to make the ship seaworthy at the beginning of the voyage (Rule 5.4). The provisions of the Rule 5.4 are intended to make the liability of the MTO compatible with the Hague/Visby Rules for carriage by sea or inland waterways.

Similar to the MT Convention, the period of responsibility of the MTO includes the period from the time he takes the goods in his charge until the time of their delivery.

Furthermore the MTO is also liable for the acts and omissions of his servants, agents or any other person of whose services he makes use for the performance of the contract (Rule 4.2).

The limitation amounts established by the Rules for loss of, or damage to, goods are clearly lower than those of the MT Convention. They are based on the limits set by the SDR protocol of 1979 amending the limits of the Hague/Visby Rules. Thus, according to Rule 6.1, unless the nature and value of the goods have been declared by the consignor and inserted in the MT document, the MTO shall not be liable for any loss of, or damage to, the goods in an amount exceeding the equivalent of 666.67 SDR (Special Drawing Rights) per package or unit, or 2 SDR per kilogram of gross weight of the goods lost or damaged, whichever is the higher. In the same way as the MT Convention, a higher limit is provided for cases where the navigation. In such a case the liability of the MTO is limited to an amount not exceeding 8.33
SDR per kilogram of gross weight of the goods lost or damaged (Rule 6.3), without any reference to package limitation which is more appropriate for sea transport.

Similar to the MT Convention, specific provisions on limitation of liability of the MTO are made for cases of localized damage. Under Rule 6.4, when the loss or damage occurs during one stage of transport, in respect of which an applicable international convention or mandatory national law would have provided another limit (and not a higher limit as provided by the MT Convention) of liability if a separate contract had been made for that particular stage of transport, then the limit of liability of the MTO for such loss or damage should be determined by reference to the provisions of such convention or mandatory national law.

The liability of the MTO for delay in delivery of the goods or consequential loss or damage is limited to an amount not exceeding the equivalent of the freight under the multimodal transport contract (Rule 6.5). Finally, the MTO is not entitled to limit his liability if it is proved that the loss, damage or delay resulted from a personal act or omission of the MTO done with the intent to cause such loss, damage or delay, or recklessly and with knowledge that such loss, damage or delay would probably result (Rule 7).

Rule 10 sets the period of time-bar at 9 months. Thus, the MTO will be relieved from liability unless the suit is brought within 9 months after delivery of the cargo, or of the date when the cargo should have been delivered. This is to allow the MTO possibility of instituting recourse action against the performing carrier, as most unimodal conventions such as the Hague/Visby Rules set the time-bar period at 1 year. The MT Convention provides for a period of two years.

The Rules envisage the possibility of issuing both “negotiable” and “non-negotiable” multimodal transport documents, including evidentiary effect of information contained in the document (Rules 2.6 and 3). However, the Rules, being of purely contractual nature, it is
doubtful whether their incorporation into MT documents would have the effect of creating a negotiable document in all jurisdictions. Rule 3, concerning evidentiary effect of the information contained in the multimodal transport document, provides that such information shall be *prima facie* evidence of the taking in charge by the MTO of the goods as described in the document unless contrary indications, such as “shipper’s weight, load and count”, “shipper-packed container” or similar expressions, have been included in the printed text or superimposed on the document. This would mean that such pre-printed clauses would destroy the evidentiary value of the document which is clearly undesirable. The Rule further provides that proof to the contrary shall not be admissible when the MT document has been transferred to the consignee, who in good faith has relied and acted on such information.

Unlike the MT Convention, the Rules do not include any provisions dealing with jurisdiction and arbitration. Multimodal transport documents currently used in practice usually provide for any dispute to be determined by the courts in accordance with the law at the place where the MTO has his principal place of business.
CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

In this chapter the research methodology used in the study is described. It covers the population and sample size, the research design. The instrument used to collect the data including methods implemented to maintain validity and reliability are also described.

3.2 RESEARCH APPROACH AND DESIGN

In this research, methodological triangulation was employed. Triangulation is the combination of two or more data sources, investigators, methodological approaches, theoretical perspectives or analytical methods within the same study. The benefits of triangulation can include increasing confidence in research data, creating innovative ways of understanding a phenomenon, revealing unique findings, challenging or integrating theories, and providing a clearer understanding of the problem (Jick, 1979). In addition to this, triangulation ensures validity and reliability since various approaches are deployed in the collection and measuring of the same data.

In this study questionnaire, interview and observation was employed. Questionnaires were closed ended and the interview was conducted using the focus group approach. In addition, the whole process was observed. The main aim of the interview and the observation was to develop a value stream mapping which to a large extent gave us qualitative data about the transportation process to ensure easy identification, visualization and measuring of the prospects and challenges in Multimodal transport in Ghana. The questionnaire and interview were prepared using simple and clear language to ensure it was well understood.
Burns and Grove (1993) defined qualitative research as a formal, objective, systematic process of describing and testing relationships and examining cause and effect interactions among variables.

A descriptive survey design was used. A survey is used to collect original data for describing a population too large to observe directly. (Mouton, 1996).

Descriptive survey provides an accurate account of the characteristics of a particular group of individual. This was chosen to determine the view of the various respondents with regards to the subject matter.

3.3 POPULATION AND SAMPLE SIZE

Population of a research is all the elements that meet all the sample criteria for inclusion in this study (Kwobia, 2006) The population consists of both targeted individuals and companies including Ghana Customs Excise and Preventive Service (CEPS), Freight Forwarders, Ghana Shippers’ Authority (GSA), Airline Operators and the Ministry of Trade and Industry (MOTI), Ministry of Transport, Shipping lines within the port community of Tema.

A sample size of sixty (65) was selected for the collection of data. Ten (10) questionnaires were issued to the traders (importers and exporters), ten (10) to CEPS officials, five (5) to ship agencies, five (5) to Road Transport operators, ten (10) to GPHA personnel, five (5) Ministry of Transport, ten (10) Freight Forwarders, five (5) personnel container scanning companies and (5) questionnaires to logistic service providers. The information obtained from the sample was used to represent the entire population.
3.4 METHOD OF SAMPLING

Sampling is the process by which a relatively small number of individuals or measures of individual objects or events are selected and analyzed in order to find out something about the entire population from which it was selected. The sample was stratified (Staff) followed by random sampling (Customers). Thus, different categories of study units with specific characteristics were put in strata but the selection of the number of participants was restricted.

The researcher used the simple random sampling also known as chance or probability sampling to select the various respondents. This was to give every person an equal chance of being chosen for the study. Purposive method was also used to identify the respondents for the interview. The following personnel were chosen for the interview based on their in-depth knowledge of the problems under study.

- Scanning Companies,
- Road Transport Operators,
- Logistics Service Providers,
- Ghana Institute Of Freight Forwarders,
- Customs Excise, And Preventive Service,
- Ghana Ports and Harbours Authority,
- Shipping Lines and Ship Agencies,
- Importers and Exporters,
- Ministry Of Transport
3.5 RESEARCH INSTRUMENTS

Most of the fieldwork involved questionnaires, interviews and observations. The fieldwork also included the analysis of documentary source in Ghana Ports and Harbours Authority.

The researcher visited the Port of Tema and observed certain activities. These observations were in addition to other information obtained through interviews and the use of questionnaires drew conclusions and made recommendations.

A questionnaire is a printed self-reporting form designed to elicit information that can be obtained through written responses of the respondents. The information obtained through questionnaires is similar to that obtained through interview, but questionnaires tend to have questions which have less depth. (Burns and Grove, 1993)

3.6 DATA COLLECTION

Self-administered questionnaires, interviews, observation, interaction, among others were used to collect primary data for the research. The secondary source was desk research thus using books, internet, and articles among others. The data collected from these sources direct the conclusions, as it provided the major empirical evidence.

A maximum of two (2) weeks was given to survey respondents to complete their questionnaires. After the time allotted to them, out of sixty five (65) respondents sampled for the study, fifty-six (56) representing eighty-six percent (86%) completed and submitted their questionnaires. The response rate is indicated in table 4.1.
3.7 METHOD OF DATA ANALYSIS

Most of the questions captured were qualitative data with a few quantitative data. Tables, frequency tables, charts and graphs were used to analyze simple qualitative data. Qualitative data was elicited from the interview and the observation was used to develop the current state value stream mapping. Hypothetical testing was adopted and necessary steps were taken to ensure that all assumptions supporting each test were duly followed to avoid undue flaws in the analysis. Other statistical methods such as crosstab analysis, simple average reporting and confidence interval were adopted where necessary.

The ultimate goal of analyzing data is to treat the evidence fairly, to produce compelling analytical conclusion and to rule out alternative interpretations. In another sense, data analysis is seen to consist of three concurrent flows of activities (Miles and Huberman, 1994). These three are data reduction, data display, and conclusion drawing and verification. The three ways for drawing conclusions, these are inductive, deductive and adductive. Inductive method is used to draw conclusions based on empirical findings. This method is normally used when established theories in the field of study are limited and the purpose is to form a new theory. Deductive method is used when drawing conclusions perceived as valid when it is logically connected. Usually in deductive studies, theories and literature that have been established already are used as foundation for the new research.

Adductive method is similar to inductive method. Here, the researcher starts with the empirical facts, just as in the inductive method. However, theoretical pre-conceptions are not rejected. In adductive method a separate case is interpreted according to the theoretical pattern as if it was true, would explain the case. The result is then confirmed based on the new observations. The new observation from the study is then compared with the theoretical frame of reference.
Based on the explanation above, the method of analysis will be based on deductive method.

3.8 ETHICAL CONSIDERATIONS

Ethical issues with this research work were handled carefully and circumspective in order not to expose respondents’ confidentiality. Data integrity was the hallmark of this research.

3.9 LIMITATIONS

Some of the problems encountered during the data collection process include:

- Unwillingness of some of the targeted respondents in responding to the questionnaires.
- Most interviewees lacked the resource of time and so made it difficult for them to give adequate information as they would have if time was on their side.
- Some respondents also gave incorrect responses to the questionnaires.
- Some of the respondents could neither speak English nor read it.

Some of the respondents took the questionnaires and left with them to their various countries. This study was conducted using a sample size of fifty six respondents but considering the topic, an increase in the sample size could have been ideal to have substantive significant findings.
CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.0 INTRODUCTION

In this chapter, the responses to the research questionnaires on the study are presented and analysed. The questionnaires posed a number of questions aimed at identifying the respondents’ views and perceptions on the role of multimodal transport in enhancing trade in Ghana. The findings of the survey are as follows:

4.1 FINDINGS OF THE SURVEY

4.1.1 Rate of Response

The total number of questionnaires issued to the various respondents was 65 and out of this, 52, representing 80% were received and analysed. Table 4.1 shows the rate of response of the various category of respondent chosen for this research.

Table 4.1: ADMINISTRATION OF QUESTIONNAIRES AND RESPONSE RATE.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>No. of questionnaires issued</th>
<th>No. of questionnaire received</th>
<th>Percentage ( % )Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana Institute of Freight Forwarders</td>
<td>10</td>
<td>7</td>
<td>70%</td>
</tr>
<tr>
<td>Road Transport Operators</td>
<td>5</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Shipping Lines</td>
<td>5</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Logistics service providers</td>
<td>5</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Importer and Exporters</td>
<td>10</td>
<td>10</td>
<td>100%</td>
</tr>
<tr>
<td>Ministry of Transport</td>
<td>5</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>GPHA</td>
<td>10</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>CEPS</td>
<td>10</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Container scanning companies</td>
<td>5</td>
<td>4</td>
<td>80%</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>52</td>
<td>80%</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2012
4.1.2 Educational Background of Respondents

The various respondents were given the opportunity to indicate the various levels of education that they had. This question was asked to determine the level of literacy and ability of the respondents to understand the questionnaires issued out to them. The responses were as shown in figure 4.1.

Figure 4.1 EDUCATIONAL BACKGROUNDS OF RESPONDENTS

Source: Field Survey, 2012

Out of the total of 56 respondents, 20, representing 36% indicated that they had tertiary level of education, 30, representing 53% had secondary level of education whiles 6, representing 11% had other forms of education such as diploma in shipping management, ‘A’ and ‘O’ levels.

From their response it was concluded that the various respondents were literate and therefore understood what the questionnaire was requiring from them.
4.1.3 Number of Years Respondents have been Trading in Ghana

The respondents were also made to indicate the number of years they had spent being a part of international trade through Ghana. This question was to enable the researcher ascertain the level of exposure and experience of the respondents with respect to multimodal transport operation in Ghana and hence the level of accuracy of their response. The results obtained were as shown in the figure 4.2:

Figure 4.2: NUMBER OF YEARS RESPONDENTS HAVE SPENT BEEN A PART OF INTERNATIONAL TRADE IN GHANA

From the above chart, 20 respondents, representing 36% indicated that they had between 1-5 years of experience in the international trade in Ghana; 15, representing 27% indicated that they had between 6-10 years of experience, 10, respondents representing 18% also indicated between 11-15 years whiles the remaining 11, respondents which represented 19% had gained more than 15 years of experience.

Source: Field Survey, 2012
The result indicated that the various respondents had spent enough time in the international trade through Ghana and observed enough to give appropriate responses to the questionnaires given to them.

4.1.4 Awareness of Respondent of Multimodal Transport Operation

On the subject matter, which was about Multimodal Transport Operation, the respondents were made to indicate whether or not they had heard of Multimodal Transport Operation in their working life. The results were shown in the figure 4.3:

Figure 4.3: KNOWLEDGE ON MULTIMODAL TRANSPORT OPERATION IN GHANA

Source: Field Survey, 2012

Out of the total 56 respondents, 40 representing 71% indicated they had heard of Multimodal Transport Operation in Ghana. While the remaining 16 had not.
4.1.5 Preference of Multimodal Transport Operation

The respondents were also made to indicate if they would prefer a Multimodal Transport Operation service relative to the other forms of transport. The responses given were shown in the figure 4.4:

**Figure 4.4: PREFERENCE OF MULTIMODAL TRANSPORT OPERATION**

Out of the total 56 respondents, 53, representing 95% indicated they would prefer a Multimodal Transport Operation for the transportation of their commodities whiles the remaining 3, respondents representing 5% indicated no.

Source: Field Survey, 2012
4.1.6 Benefits of Multimodal Transport Operation

The respondents were made to indicate the benefits they were obtaining from or are likely to obtain for the use of Multimodal Transport Operation in Ghana. The various responses given are shown in the figure 4.5:

Figure 4.5: BENEFITS OF MULTIMODAL TRANSPORT OPERATIONS

Source: Field Survey, 2012

40 of the respondents indicated that multimodal transport helps to minimise trans-shipment time loss, 31 indicated that it provides faster transit of goods, 55 stated that it reduces multiple documentation, 51 stated that it leads to the establishment of only one agency with whom the shipper will have to deal with and all 56 indicated that multimodal transport reduces cost of shipping.
4.1.7 Challenges of Multimodal Transport Operations in Ghana

The respondents were made to state some of the challenges Multimodal Transport Operation is facing or likely to face in Ghana. The responses indicated are shown in figure 4.6:

Figure 4.6 CHALLENGES OF MULTIMODAL TRANSPORT OPERATIONS

![Bar chart showing challenges of multimodal transport operations]

Source: Field Survey, 2012

45 of the respondents indicated that the transport infrastructure was poorly developed, 25 indicated lack of a legal regime to govern multimodal transport, 36 stated that there is a poor linkage between the various modes of transport in the country, 50 indicated that the was a low level of awareness about multimodal transport and 49 stated that the documentation procedure in the country was too cumbersome.
4.1.8 Benefits of Multimodal Transport Operation to Ghana

Some of the benefits Ghana can gain from a successful implementation of Multimodal Transport Operation on a large scale include as stated by the various respondents:

- Improvement in transit trade through Ghana.
- Leads to reduced transport cost of goods and hence makes finished goods relatively affordable.
- Makes trade through Ghana more secure and so encourages more trade and hence economic development of the country.
- Multimodal Transport Operation is a major contributor to Ghana’s gateway project (vision of becoming a hub port in the West and Central African sub region) because movement of goods through Ghana will be more safe and secure.
- Will lead to development of transport infrastructure in the nation.
- It will result in improved link between the various transport facilities.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter discusses the conclusions drawn from the various findings obtained and also recommendations made by the researcher based on these findings.

5.2 SUMMARY AND CONCLUSION

56 out of the 65 targeted population responded to the questionnaires issued out to them.

All of the 56 respondents had some form of education and therefore could read and understand the subject matter to give out appropriate information. All the respondents had been part of international trade through Ghana for at least a year and therefore had enough experience to give credible answers. Of the 56 respondents, 40 had heard of multimodal transport operation and 53 indicated they will prefer using it instead of the other forms of transport.

From the various findings, it was concluded that, though there are a lot of people who are aware of multimodal transport, there is equally a high number of people who had little knowledge of its existence. All the respondents were of the view that a successful implementation of multimodal transport in Ghana on a large scale will be very beneficial to traders and the nation as well. Some of the benefits to the traders include reducing cost of transport, reducing litigations, reduced time of delivery, less likelihood of goods getting missing in transit and reduced documentation because a single operator will issue a single document which will cover the entire operation.
In spite of these, there are challenges that are mitigating against successful Multimodal Transport in Ghana and these include poorly developed transport infrastructure, no legal framework covering Multimodal Transport Operation and poor link between the various transport infrastructures available. Multimodal Transport Operation in Ghana is more of one operator sub-contracting other services and this makes sharing of liabilities sometimes difficult.

Some of the benefits Ghana stands to derive from the successful implementation of Multimodal Transport on a larger scale include: improvement in transit trade through Ghana, reduction in transport cost of goods hence making finished goods relatively affordable, making trade through Ghana more secure and so encouraging more trade and hence economic development of the country and Multimodal Transport Operation is a major contributor to Ghana’s gateway project (vision of becoming a hub port in the West and Central African sub region) because movement of goods through Ghana will be more safe and secure.

5.3 RECOMMENDATIONS

Based on the findings obtained, the following are recommended:

➢ Regulatory Framework

There is lack of adequate and implementable or feasible legal frame work therefore the various transport regulatory bodies in Ghana should set up rules and regulations to govern multimodal transport operations.

➢ Development of transport infrastructure

The various modes of transport in Ghana should be properly developed by way of construction of new ones and rehabilitation of dilapidated ones, in order to ensure the smooth transportation of cargo from one place to another.
➢ **Seminars and Conferences**

The various transport authorities such as the Ministry of Transport should organise conferences and seminars to provide information and sensitise the public on multimodal transport operations, in order to imbibe the culture of multimodalism into them.

➢ **Improvement in Information Communication Technology (ICT) in the Maritime Transport Sector**

Operators of ICT facilities in the maritime transport sector in Ghana should be encouraged to improve their output, in order to reduce the cumbersome manual documentary processes in the maritime transport industry in the country.

➢ **Financing of Transport Infrastructure**

An economic study should be done on the benefits of implementing multimodal transport services in Ghana, relative to the current unimodal transport, and donors encouraged to fund development of transport infrastructure.
REFERENCES


Burns and Grove (1993), Reworking Qualitative Data, Sage Publication, New York

De Wit R (1995), Multimodal Transport: Carrier Liability and Documentation. Lloyd’s of London Press,

Economic and Social Commission for Asia and the Pacific (1997), Multimodal Transport Operations, Transport Bulletin No. 65


51


52


Selvig E (1980), *The Background to the Multimodal Convention*, paper delivered at a seminar in Southampton University, Faculty of Law, 12 September 1980.


UNCTAD, Review of Maritime Transport, 1997


Woxenius J (1998), *Development of small-scale intermodal freight transportation in a systems context*, Chalmers University of Technology.

Zuidwijk A (2003), *Multimodal Transport Perspective*, Buenos Aires
APPENDIX

QUESTIONNAIRE

I am Jemima Ansa-Otu Graduate Student of Regional Maritime University writing on Thesis topic: Challenges and Prospects of Multimodal Transport Operations in Ghana. This questionnaire is designed to solicit needed information strictly for academic purposes and any information provided would be treated with the utmost confidentiality. Thank you.

SECTION A BIODATA

1. Educational background
   (A) Secondary [   ]
   (B) Tertiary [   ]
   (C) Others [   ] please specify.................................................................

2. Which of the following operations do you engage in?
   (A) Freight Forwarding [   ]
   (B) Transport Operation [   ]
   (C) Trade [   ]
   (D) Logistics service operation [   ]
   (E) Others [   ] Please specify.................................................................

3. How long have you been in the trade (Import and export) sector?
   (A) 1 – 5   (B) 6 – 10   (C) 11 – 15   (D) 16 and above

4. Are you aware of a form of transport called Multimodal Transport Operation?
   [Yes]    [No]
5. If yes briefly describe what it is

6. Which of the following best describes the extent of success of multimodal transport operation in Ghana?
   - Excellent ( )
   - Good ( )
   - Average ( )
   - Poor ( )

   Please give reasons for your answer

7. Which forms of transport can easily be combined for Multimodal Transport Operation in Ghana?

8. What benefits do you think Ghana can derive from efficient implementation of Multimodal Transportation?
9. What are some of the challenges facing Multimodal Transport Operation in Ghana?

10. What do you think can be done to enhance Multimodal Transportation in Ghana?

11. What benefits does your organization stand to gain when multimodal transport operation is successfully implemented in Ghana?