ROLE OF TRANSPORTATION SYSTEM IN DELIVERING OF GOODS AND SERVICES IN ORGANISATIONS: A CASE STUDY OF STEEL AND TUBES INDUSTRIES, NAMANVE, KAMPALA (U)

BY

ASIIMWE ERIC

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DECLARATION

I Asiimwe Eric, declare that the work presented is my own and original and has never been presented by any other person either in wholly or partly to any University/ institution of higher learning for the degree or any other academic award.

Signature .....

Asiimwe Eric

Date .....

APPROVAL

This is to certify that the research is carried out under my supervision and is submitted with my approval as the University supervisor and is worthy of the award of bachelors of supplies and procurement management of Kampala international University.

Signed .....

Mr. MBAGO RONALD

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CHAPTER ONE

PROBLEM AND ITS SCOPE

1.0 Introduction

This chapter presents and describes the background of the study, problem of the research, purpose and objectives of this study, research question, and area of the study and significance of the study and the conceptual framework.

1.1 Background of the study

Over the past few years, companies have steadily concentrated their production capacity in fewer locations and have expanded the geographical scale of their sourcing and distribution operations. This has led to a wider logistic reach of companies – the length of their supply lines upstream and distribution channels downstream. This globalization influences the pattern of goods transport, the consequence being that transport has become more integrated in the supply chain. The majority of products shipped into urban areas are produced outside these areas. These products consist of many different components which are assembled from different areas around the world and shipped from strategic locations to customers. Therefore in planning policies on the delivery of goods.

The transport sector has now changed from a "push" market-oriented approach to a "pull" market-oriented approach which fully integrates customers into the supply chain. Therefore, urban goods transport can also be considered the first link in the distribution chain putting users and customers first instead of the final link in the distribution chain starting from the production location and finishing at a retailer or customer. Companies have concentrated not only their production capacity but also their inventory capacity. In achieving cost reductions by fleet management and by reorganizing transport networks, supply chain directors have rationalized supply chains by reducing the number of warehouses and by optimizing the use of and thereby reducing the number of warehouses in most metropolitan areas. Warehouse operations are becoming a major activity of logistic chain integrators. On the other hand, with the concentration of

inventory, non-stockholding, break-bulk facilities are needed in order to maintain transport efficiency. Companies have been able to achieve inventory cost savings while minimizing additional transport costs by geographically separating stockholding and break-bulk operations, with the former being centralized while the latter remains decentralized.

Direct delivery is also increasing, reflecting the growth of direct marketing, particularly through electronic media. It enables manufacturers to bypass conventional wholesale and retail channels. Given the restrictions on urban goods transport, consolidation of goods deliveries between companies is increasingly necessary in order to increase efficiency. Multi firm consolidation systems such as city logistics which have one warehouse able to serve several adjoining regions and companies differ from classical delivery systems where companies distribute their goods via their warehouses in each region.

The accessibility of urban areas has become a very important marketing asset which is worth a large price. The second aspect in the retail sector is the drive to minimize costs that has led to techniques for maximizing the return on space. Service premises have sought to use maximum space for direct service provision with the result that space can no longer be used for storage and other back-office functions. The manufacturing industry and retail sector follow the principle of floating inventory in order to produce and sell tailor made products while saving storage space as selling area or production facility, thereby receiving a maximum return on investment.

Logistic chain integration is based on the principles of rationalization, standardization and interoperability. Rationalization is a prerequisite for consolidation of goods in the limited urban space. Standardization of loading units and roll containers throughout the logistic chain can lead to more interoperability of logistic services from producer to consumer. Degrees of efficiency in energy use and emissions vary as different vehicles are used for deliveries. In France, research by the French Environment Agency in 1997 found that round-trip deliveries using heavier and larger trucks in the urban

environment can consume less energy than a bundle of direct deliveries. As more trips are required to deliver loads with smaller vehicles, this makes less efficient use of the urban infrastructure.

Gibbons and Overman (2009) provide an extensive discussion of the potential productivity and scale effects of transport infrastructure. At the firm level, transport improvements could affect the performance of firms. On the one hand, they may improve the logistics and the internal organization of the firms, and can change the optimal input mix choice. Transportation services are used as production input and, if there is a substitution effect between inventories, labour and transport services, the demand and input mix will be affected (Holl, 2006). Input prices could decrease because of reduced transport costs or increased competition between the suppliers. Wages could also change if productivity effects are capitalised into wages or if wages are set as a function of commuting costs, which are affected by the transport network (Gibbons and Machin, 2006). Therefore, firms might change the demand of inputs, and depending on the internal returns to scale, this would affect its final output. If output increases with respect to inputs more than proportionally (due to increasing returns to scale), the output/input ratio will change, but this would be a scale effect and total factor productivity would be unaffected. Furthermore, better accessibility to consumers increases customer base and allows firms to expand production and exploit economies of scale.

Firms total factor productivity could be affected by the wider economic benefits of transport (Graham, 2007). These refer to agglomeration externalities (sharing, matching and learning – Duranton and Puga, 2004), which can be internal to the industry (localization economies) or just a consequence of an increase in the size of the markets (urbanization economies). Firms benefit from the p resence of other firms nearby (in the same or different sector of production) and from the increased proximity to suppliers which arises from the improvements on the transport network.

1.2 Problem statement

As competition increase among organizations due to globalization, companies are faced with challenges of establishing a competitive edge for their organizations, efficient delivery of goods and services to customers and ensuring availability is a way to go. This therefore calls for the adoption of an efficient transportation system for organizations. The choice and use of transportation systems has an impediment in the supply chain. Frequently used transport systems like roads are associated with challenges like high costs, inadequacy and unreliability among others. The research is intended to investigate the challenges encountered in transport systems with knee reference to road transport to examine its effectiveness in delivering goods and services and provide parameters for its effective operation to enhance goods and service delivery for organization. The study was therefore set to investigate the influence of transportation on the efficiency of delivering goods in steel and tube industries limited.

1.3 Purpose of the study

The purpose of the study was to investigate the role of transportation system in ensuring efficient delivery of goods and services in organizations.

1.4 Objectives of the study

(a) To establish the transportation systems used by organizations in delivery of goods and services

(b) To determine the challenges associated transport systems and establish the mechanisms for its effectiveness

(c) To determine the role of transport systems in efficient delivery of goods and services in organizations

1.5 Research Questions

(a) What are the transportation systems used by organizations in delivery of goods and services?

(b) What are the challenges associated with transport systems and establish the mechanisms for its effectiveness?

(c) What is the role of transport in efficient delivery of goods and services in organizations?

1.6 Scope of the study

1.6.1 Time scope

The research was carried out for a period of 1 month that is to say May to October 2014. This is so because the period chosen provide ample time for the findings

1.6.2 Geographical scope

The research was conducted at steel and tubes industries located in Kampala Uganda in Namanve industrial area.

1.6.3 Subject scope

The research focused on assessing the role of transport systems in efficient delivery of goods and services in organizations.

1.7 Significance of the study

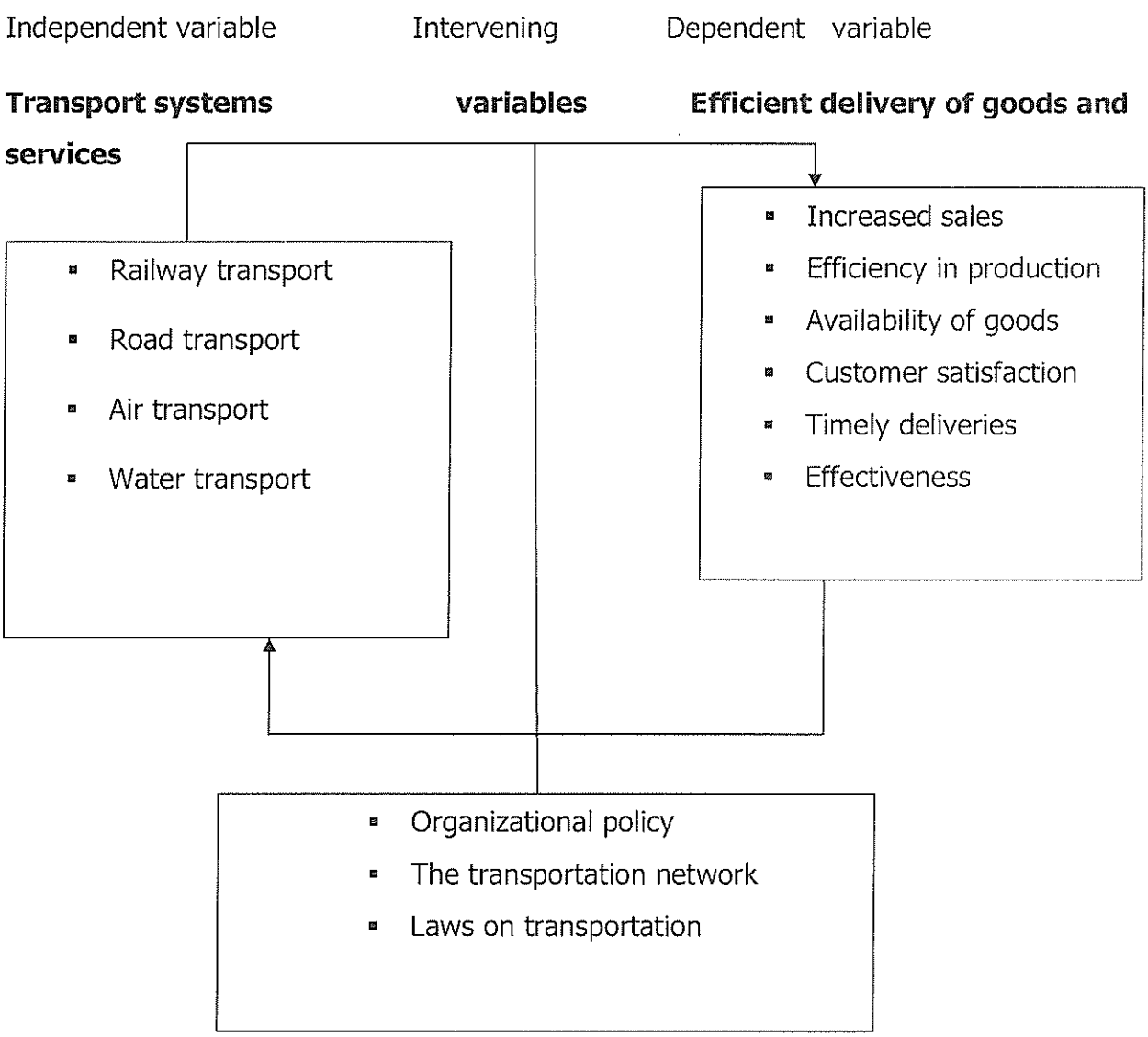
The researcher will attain an academic award upon submission and presentation of a research thesis.

The research will explore the transport systems used by organizations and recommend the most cost effective one for organizations to adopt

The research will help in providing supplementary literature to fill on the existing gaps in organizations.

The research will provide mechanisms for transportation systems in organizations so as to stimulate and improve distribution capacities.

1.8 Conceptual framework



CHAPTER TWO

LITERATURE REVIEW

2. 0 Introduction

Literature review involves looking at what other authors and scholars have written about a subject .it is the secondary analysis of available information that has already published.

In today's world of ever increasing competition, organizations are forced to look for new ways to generate value. The world has embraced the phenomenon of competitiveness and companies have adopted its principles to help them expand into other markets (Bender 1999). Strategic management of the transport system is perhaps the most powerful tool in management, and a tool of innovation is its frontier (Quinn 2000).

2.1 Transport systems used in organizations

2.1.1 Road transport

Transport on roads can be roughly grouped into two categories: transportation of goods and transportation of people. In many countries licensing requirements and safety regulations ensure a separation of the two industries. The nature of road transportation of goods depends, apart from the degree of development of the local infrastructure, on the distance the goods are transported by road, the weight and volume of the individual shipment and the type of goods transported. For short distances and light, small shipments a van or pickup truck may be used. For large shipments even if less than a full truckload a truck is more appropriate. (Also see Trucking and Hauling below). In some countries cargo is transported by road in horse-drawn carriages, donkey carts or other non-motorized mode. Delivery services are sometimes considered a separate category from cargo transport. In many places fast food is transported on roads by various types of vehicles. For inner city delivery of small packages and documents bike couriers are quite common. People are transported on roads either in individual cars or automobiles, or in mass transit by bus or coach. Special modes of individual transport by road like rickshaws or velotaxis may also be locally available

2.1.2 Rail transport

Rail transport is a means of conveyance of passengers and goods by way of wheeled vehicles running on rail tracks. In contrast to road transport, where vehicles merely run on a prepared surface, rail vehicles are also directionally guided by the tracks on which they run. Track usually consists of steel rails installed on sleepers/ties and ballast, on which the rolling stock, usually fitted with metal wheels, moves. However, other variations are also possible, such as slab track where the rails are fastened to a concrete foundation resting on a prepared subsurface.

Rolling stock in railway transport systems generally has lower frictional resistance when compared with highway vehicles, and the passenger and freight cars (carriages and wagons) can be coupled into longer trains. The operation is carried out by a railway company, providing transport between train stations or freight customer facilities. Power is provided by locomotives which either draw electrical power from a railway electrification system or produce their own power, usually by diesel engines. Most tracks are accompanied by a signalling system. Railways are a safe land transport system when compared to other forms of transport.[Nb 1] Railway transport is capable of high levels of passenger and cargo utilization and energy efficiency, but is often less flexible and more capital-intensive than highway transport is, when lower traffic levels are considered

2.1.3 Air transport

Among the different modes of transport, air transport has experienced the fastest growth. However, it must overcome the problem of its infrastructures becoming saturated. The European Union is therefore committed to modernising and adapting the infrastructure to increasing passenger flows, whilst also improving their rights and safety. In order to do this, the Union is working to implement the Single European Sky. Moreover, the introduction of optimum traffic management technologies will enable the challenges related to economic efficiency, safety and respect for the environment to be reconciled Passarola of Bartolomeu Lourenço de Gusmão (1685–1724)

The modern age of aviation began with the first untethered human lighter-than-air flight on November 21, 1783, in a hot air balloon designed by the Montgolfier brothers. The practicality of balloons was limited because they could only travel downwind. It was immediately recognized that a steerable, or dirigible, balloon was required. Jean-Pierre Blanchard flew the first human-powered dirigible in 1784 and crossed the English Channel in one in 1785.

2.1.4 Water transport

Water transportation is the intentional movement of water over large distances. Methods of transportation fall into three categories, Aqueducts, which include pipelines, canals, and tunnels , container shipment, which includes transport by tank truck, tank car, and tank ship, and towing, where a tugboat is used to pull an iceberg or a large water bag along behind it.Due to its weight, the transportation of water is very energy intensive. Unless it has the assistance of gravity, a canal or long-distance pipeline will need pumping stations at regular intervals. In this regard, the lower friction levels of the canal make it a more economical solution than the pipeline. Water transportation is also very common along rivers and oceans.

2.2 Challenges associated with transport systems in organizations.

Road transport awareness of its importance seems to be low, not only among the general public but also among governments and city planners. There are very few freight transport specialists. For example, although the municipality of Paris has 200 specialists dealing with passenger transport and traffic planning, the first specialist in urban freight was appointed to the office in March 2002. In most cities, city planning and traffic surveys are based solely on passenger transport. This lack of awareness and knowledge has often led to transport policies being planned mainly from the passenger transport perspective, without adequate consideration of the needs of freight transport. There does not appear to be a systematic basis for assessing the relative value of alternative passenger and freight transport uses. Fawcett, Stanley E. and Gregory M. Magnan (2002)

According to one estimate there is about per year loss of Rs. 200 crores on the wear and tear of the vehicles due to poor quality of roads. Even the National Highways suffer from the deficiencies of inadequate capacity, weak pavement, poor riding quality, distressed bridges, unabridged level crossings, congested cities (lack of by-pass roads), lack of wayside amenities and safety measures. One major problem on the Indian roads is the mixing of traffic. Same road is used by high speed cars, trucks, two wheelers, tractors, animal driven carts, cyclists and even by animals. Even highways are not free from this malady. This increases traffic time, congestion and pollution and road accidents. Ellram M. L, Zsidisin A. G, Siferd S.P, and Stanly J. M. (2002).

There are multiple check-posts, toll tax and octoroon duties collection points on the roads which bring down the speed of the traffic, waste time and cause irritation to transporters. Rate of road taxes vary from state to state and inter-state permits are difficult to obtain.There is very little participation of private sector in road development in India because of long gestation period and low-returns. The legislative framework for private investment in roads is also not satisfactory. The road engineering and construction are yet to gear themselves up to meet the challenges of the future.

There has been no stability in policy relating to highway development in the country. It has changed with the change of government. There are a number of agencies which look after the construction and maintenance of different types of roads. Since there is no co-ordination between these agencies their decisions are often conflicting and contradictory. There is shortage of funds for the construction and maintenance of roads. Garry J.Zenz (1987)

Few countries use analytical tools for evaluating the effectiveness of their policy measures concerning transport and its costs, both ex-ante and ex-post. Also most cities have little data on urban goods transport which could be used for such evaluations. Data are rarely collected, and tend to be despite the fact that cities vary in size, population and in other ways, there are some common challenges. The significant contribution of freight transport to total traffic and moreover the contribution of freight

transport to problems of accessibility, congestion, environment and safety is leading to growing awareness of the importance of urban goods transport policies. However, most cities are not adequately equipped as yet to analyze and prepare for these challenges. With the expected growth in freight transport, most cities are increasingly concerned about deteriorating accessibility, environment and safety. On the other hand, cities are aware that despite the problems caused by urban goods tranport, delivering goods to the city (both to commercial premises and to private dwellings) is essential for maintaining their economic and social functions. Lambert, Douglas M.; Martha C. Cooper, and Janus D. Pagh (1998).

Another important aspect is that other road users tend to lack knowledge of the limitations and

maneuverability of large freight vehicles, which differ from those of passenger vehicles. The lack of understanding that large freight vehicles are not able to stop or change directions quickly could result in collision with such vehicles. In Australia, for all fatalities resulting from a crash on Australian roads, one in five crashes involves a truck. Trucks are also involved in 10% of serious injury crashes. However, research has shown that for most of these fatalities and serious injuries, the truck driver is not at fault. Car drivers were primarily responsible for five out of six crashes involving an articulated truck and two out of three crashes involving a rigid truck. Due to lack of adequate facilities in buildings, loading and unloading tends to be carried out on road. In commercial districts where on-road parking is common, even when on-road loading/unloading

facilities exist they tend to be used by other vehicles, resulting in loading and unloading often being carried out from vehicles that are double parked. This leads to congestion,

The retail sector is very complex and diversified. Trends in consumer behaviour strongly influence business strategies of retail organisations. There are two major transport

considerations related to retail. The first deals with the front door of retail stores, namely the accessibility of shopping areas for the customer, which mostly concerns passenger transport. The second deals with the back door, namely the stricter demands on the delivery of goods. In both aspects, accessibility is a central issue. Given the growing importance of accessibility in urban areas particularly in shopping areas for marketing, a "P" (for parking) could be added to the five already existing marketing criteria (price,product, performance, presentation, and promotion). This P for parking is of significant importance to both real estate and retail sectors, since it concerns the geographical hindrances not only to freight transport, but also personal mobility. Living conditions, such as the pedestrianisation of inner cities, have become increasingly important in recent years, and any interference with mobility is less tolerated in urban areas.

Customers and inhabitants of cities have become more demanding. The accessibility of urban areas has become a very important marketing asset which is worth a large price. Lysons K. and Farrington B. (2006)

Environmental impacts and energy consumption. Pollution, including noise, generated by circulation has become a serious impediment to the quality of life and even the health of urban populations. Further, energy consumption by urban transportation has dramatically increased and so the dependency on petroleum. Yet, peak oil considerations are increasingly linked with peak mobility expectations where high energy prices incite a shift towards more efficient and sustainable forms of urban transportation, namely public transit.

Accidents and safety. Growing traffic in urban areas is linked with a growing number of accidents and fatalities, especially in developing countries. Accidents account for a significant share of recurring delays. As traffic increases, people feel less safe to use the streets

Transport inadequacy. Many public transit systems, or parts of them, are either over or under used. During peak hours, crowdedness creates discomfort for users as the

system copes with a temporary surge in demand. Low ridership makes many services financially unsustainable, particularly in suburban areas. In spite of significant subsidies and cross-financing (e.g. tolls) almost every public transit systems cannot generate sufficient income to cover its operating and capital costs. While in the past deficits were deemed acceptable because of the essential service public transit was providing for urban mobility, its financial burden is increasingly controversially.

2.3 Mechanisms to improve the transport for effective delivery of goods and services.

The private sector has become increasingly aware of its roles and responsibilities and is active in developing sustainable urban goods transport systems. Many developments in increasing efficiency and reducing negative impacts of urban goods transport systems are initiated by the private sector. For example, the private sector actions to optimise supply chains and consolidate transportation, which were initially driven by needs for cost reduction and customer satisfaction, often result in reducing negative impacts of freight transport. The increasing awareness in the private sector of its responsibility toward sustainability has promoted the introduction of voluntary measures which include adopting low-emission vehicles and low noise devices, *e.g.* silent refrigeration units and air brake silencers. Such private sector measures also help improve their corporate image.

Weele J. A. (2005), argues that Investment is also being made for new technologies in more energy-efficient, low-emission and low-noise vehicles and devices as well as in ICT to increase efficiency of goods transporsystems.Policy measures should be formulated so as to enhance and facilitate such developments. Such developments can be facilitated through assistance programmes which provide incentives, *e.g.* byallowing preferential use of infrastructure, allowing the safest and most environmentally friendlyvehicles access to otherwise restricted areas or time windows, or through financial assistance to promote innovations. When regulations are used to attain such developments, governments need to ensure that such regulations are sufficiently stable and harmonised and provide a clear framework to encourage the private sector to

assess the effectiveness and viability of potential investments. Experience indicates that such regulations should preferably regulate the outcome of the expected performance and not be technologically prescriptive, enabling the private sector to decide how to achieve such outcomes. Planning through a public-private partnership process can guarantee that the measures are practical and that the private sector is committed to them.

Establishing a policy framework for urban goods transport often includes regulation, which tendsto lead governments to plan their policy in a traditional style. However, in freight transport, information necessary for policy planning is available mainly in the private sector. Also, with the wide range of stakeholders with different and often conflicting interests, feasible and practical solutions require the integration of different interests and points of view of all stakeholders. Policy solutions need to find the right balance between system efficiency (in terms of both costs and service levels) and sustainability. For example, environmental innovations for cleaner vehicles may be desirable, but operators may require an agreed minimum period of unchanged local and regional regulations such as 6-8 years for an economically viable depreciation period. Another example would be that if the environmental policy is to only allow access to less polluting vehicles such as with Euro-3 or Euro-4- based engines, it may be desirable from a cost perspective to allow a reasonable transition period.

Agreement among all stakeholders, especially Logistical matching systems for freight transport using the internet are a type of e-commerce (B2B) within the freight industry that attempt to match the demand from shippers who offer jobs for carrying goods and the supply from freight carriers who offer a vacant space on their trucks that can be used for transporting additional goods. In principle, all the activities of offering demand and supply, auction, negotiation and transaction are done via the Internet, although telephone and fax are also usedfor negotiation and questions/answers. ITS is used for identifying the vehicle location and its carrying loads in the logistics matching systems. Weele J. A. (2005)

ITS-based intelligent fleet management systems should be introduced in the logistics industry to

increase the efficiency of freight vehicle operations and trace packages or containers. These systems allow freight carriers to dynamically control freight vehicles to provide better service to customers. The intelligent fleet management systems can provide innovative methods for surveying traffic conditions in terms of link travel times on the road network. If a large number of freight vehicles were equipped with devices recording their location using GPS and/or gyroscope, this could provide traffic data on link travel times. This type of system is called a probe vehicle system, because the vehicle itself is a probe, measuring the speed of traffic moving in the network. The data can be stored in the digital recording systems in the vehicle and input to the computer in the data centre after finishing travel.

As industrial activities continue to expand globally, businesses are restructuring their logistic systems. They are organising strategic, world-wide networks that deliver an efficient and high-quality response to demand from any segment of the world market. The efficient and integrated organization of such networks, seeking to optimise the flow of the whole logistics chain, is often referred to as supply chain management (SCM). This concept of SCM extends integrated logistics management to include customers, suppliers and manufacturers. Urban goods transport constitutes the final leg of the supply chain, and therefore is an integral part of SCM.

2.4 The role of transport in delivering goods and services in organizations

The theoretical predictions on the net effects of transportation improvements on firms and local outcomes are ambiguous. Better transport infrastructure brings places and people closer together. This has two effects on the actual size of the markets. Firstly, for a given location of firms and workers, effective density increases, as it becomes easier to reach other locations using the improved transportation network. Secondly, new infrastructure increases the attractiveness of locations, which may boost spatial

concentration if firms and workers relocate. These effects may reinforce each other and create positive agglomeration spillovers (Ottaviano, 2008). On the other side, improved access to markets also strengthens competition, forcing the exit of the less productive firms and thus increasing aggregate productivity (Melitz, 2003). Finally, firms use transport services as a production input, sochanges in the supply and relative prices of transport affect the input mix used by the firms and their demand of other inputs, for example labour.

Given that the theoretical predictions are ambiguous, the effect of transport improvements on the firm level and aggregate level outcomes remains an empirical question. Although authors have explicitly included the role of transportation into spatial economics analysis (Combes and Lafoucarde, 2001; Puga, 2002; Behrens et at, 2004; Venables, 2007), there is still need to empirically establish the causal link between transportation infrastructure in spatial economic performance. Most of the empirical evidence of the effects of transport and infrastructure investment on economic outcomes has been provided at the macro-level (for a review see Straub, 2011). This literature has focused the impacts of investment in roads and public infrastructure on several economic outcomes, such as aggregate productivity, growth or employment, finding mixed results (Gramlich, 1994; Martin and Rogers,1995; Boarnet, 1998; Chandra and Thompson, 2000; Jiwattanakulpaisarn et al, 2010)

The Basic Road Network is aimed at guaranteeing the accessibility of major industrial locations in the Netherlands and neighbouring countries. Areas of particular economic importance are, for example, the ports of Rotterdam, Amsterdam and Delfzijl and the chemical innovation community in Sittard-Geleen. Currently, transporters of hazardous materials may not make use of the entire road network. For example, in many instances they must avoid roads that run through or past densely-populated areas, nor may they drive through every tunnel in the Netherlands.

ICT plays an important role in SCM. ICT connections not only allow businesses to integrate their

operations and diversify their supplies, but also allow businesses and consumers to communicate with each other in producing and ordering products. Thus, ICT has enabled customers to be integrated into the supply chain, and industry to respond swiftly to their complex demands. With the development of ICT, the so-called customer order decoupling point (the point at which goods become designated for particular final customers) has moved upwards through the logistics chain

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter is consist of research design, population and sample selection, data collection instruments, data analysis and interpretation tools and limitations of the study.

3.1 Research design

The research was conducted on both qualitative and quantitative research. The qualitative research helped the researcher to better achieve the purpose of the study. However, the research was also be conducted by using field research, observation, questionnaires and interviews. It also involved descriptive where the researcher described the relationship between variable.

3.2 Area of the study

The study was carried out at steel and tubes industries limited where the respondents will be selected to give primary data regarding the role of transportation systems in the delivery of goods and services..

3.3 Population of study

(**Sekeran 2001**) defines a population as "the entire group of people, events or things of interest that the researcher wishes to investigate". The study population focused on primary individuals who are well versed with the operations of the company. These mainly included the managers from several departments in the company such as Distribution, 29, marketing 09, Procurement 03 and accounting 04.The estimated population is to a tune of 45 people from the above mentioned departments.

3.3.2 Sample Size

A sample size of 40 respondents was selected using Slovene's formula for computing the sample size. The composition of the sample population was tabulated as below:-

From the estimated population of 45, a sample size was determined using Slovene's Formula to come up with appropriate sample size to be used in the study. Slovene's Formula states that, given a population, the minimum Sample size is given by:

The sample size was calculated mathematically using the formula below;

$$n = \frac{N}{1 + N\alpha^2}$$

Where ; n = the sample size

N = total population of respondents that is 45.

α = the level of significance, that is 0.05

$$n = \frac{N}{1 + N\alpha^2}$$

$$n = \frac{45}{1 + 45\ (0.05)}$$

$$n = \frac{45}{1+45 * 0.0025}$$

$$n = \frac{45}{1.1125}$$

N= 40

A sample size of 40 respondents was selected to participate in the study

3.3.3 Sample Selection Technique

The sample selection was mainly based on probability and non probability means where by use of simple random and stratified sampling was used to ensure all categories of respondents are well studied, purposive sampling was also used because there is need to select key informants who provide data that is accurate and comprehensive enough such as the

3.4 Data Sources

3.4.1. Primary source

This is the first hand information that was collected directly from the respondents through the use of techniques such as interview guides, observation and questionnaires. It is therefore the raw data that was obtained from the field by the researcher.

3.4.2 Secondary data

Under secondary data, information was extracted from the chapter two – literature review and from transport records at steel and tubes industries.

3.5. Data collection instruments

3.5. 1 Questionnaire

This tool is preferred since it ensures secrecy and anonymity on the part of respondents. It is also appropriate for this group since they are literate hence read the questions and provided their responses. This method enabled the researcher reach the required sampled population easily.

3.5.2 Interview guide

The researcher also used an interview schedule in this study with predetermined topics or questions to be discussed. This qualitative in-depth technique was used on selected individuals for important information. The technique is ideal for this group of respondents since it provides exhaustive and appropriate information about their own viewpoints. Furthermore, the interview schedule enables the researcher to verify and guide the kind of information necessary for the study from the respondents.

3.6 Data Processing and Analysis

During and after data collection, the researcher used different methods to process the data that was collected so as to come up with a report that is easy to interpret and understand. The methods of data processing and analysis that was used in this study included the following , coding , tabulation and

3.7 Validity and Reliability of the Study

Content validity was ensured by subjecting the researcher devised questionnaires on resource availability and utilization to judgment by the content experts who estimated the validity on the basis of their experience. The test-retest technique was used to determine the reliability accuracy of the researcher devised instruments

3.8 Ethical consideration

Before going to the field, the researcher began with getting authorization letter from the head of department of procurement, marketing and hospitality of Kampala international university, main branch. She then took the authorization letter to the respondents and this enabled the researcher attain adequate information from the respondents.

During the process of data collection, confirmation was given to the respondents that the reason was meant for only academic purposes and that all information given is kept confidential.

3.9 Limitations of the study

It was not be easy to get the cooperation of some of the respondents as some of them pretended to be on busy scheduled at their place of work.

The cost of the research was very high in regard to access stationary, printing; photocopying, binding, transport costs, telephone charges, and postage are expenses

3.10 De-limitations

The problem of insufficient time was solved by making sure that the researcher is given enough/ sufficient time and maximum concentration.

The problem of lack of cooperation with some respondents will be solved by conducting the remaining exercise through telephone calls and questionnaires.

The problem of cost and lack of enough funds to facilitate the exercise was solved by soliciting financial assistance from friends, relatives, parents and well-wishers to boost the research.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.0 Introduction

This chapter deals with analysis interpretation and presentation of the research findings. The analysis and research findings were interpreted and analyzed basing on the research questions. The study was set to investigate on the role of transport systems in the efficient delivery of goods and services in Steel and tubes industries . The findings were obtained through the use of a questionnaire, interviews, and documents from the district and the questionnaire was presented to 40 respondents who answered them successfully.

4.1 Back ground information of respondents

4.1 Gender categorization of respondents

Table i: showing respondents categorization

Respondents	**Frequency**	**Percentage**
Male	28	70
Female	12	30
Total	**40**	**100**

Source: Primary data, 2014

From the table above, it can be seen that the majority of respondents are male that is 30 of respondents representing 70% of the total respondents and 12 respondents are female representing 30% of the respondents. This indicates that the research can be dependable on gender grounds hence the findings can be dependable for decision making.

4.1.2 Age categorization

Table ii: Showing age distribution of respondents

Age	Frequency	Percentage
18 – 27	7	17.5
28 – 37	10	25
38 – 47	15	37.5
48+	8	20
Total	**40**	**100**

Source: Primary Data, 2014

From the figure above it is clear that 17.5% of the respondents are in the age brackets of 18 -27, 28 -37 was represented by 25% of the respondents, 37.5% were for 38 - 47 and finally 48+ had 20 % of the total respondents, it was therefore found that the majority of the respondents are aged between 38-47 years, it is therefore right to construe that the majority of the respondents are mature people and therefore have adequate information provided for the study.

4.1.3 Academic Qualification of respondents

Table iii: showing academic qualifications of the respondents

Academic qualifications	Frequency	Percentage
Certificate	4	10
Diploma	10	25
Degree	12	30
Masters	5	12.5
PhD	3	7.5
Other	4	10
Total	**40**	**100**

Source: Primary data, 2014

From the above table it is seen that that the majority of the respondents were degree holders representing 30% of the total respondents, followed by diploma holders who had 25%, Masters 12.5%, followed by certificate holders having 10%, others had 10% and finally PhD had 7.5% respectively. This implies that the respondents are well educated and therefore the information obtained from them can be relied upon for the purpose of this study.

4.2.1 Forms of transport systems used steel and tubes industries in delivery of goods and services.

Table iv: showing the responses to transport systems used by Steel and tubes industries.

Response	Frequency	Percentage
Railway	10	25
Road	14	35
Air	4	10
Water	12	30
Total	**40**	**100**

Source: primary data,2014

From the above it is clear that basing on 35% of the respondents who agreed that steel and tubes industries use road transport in delivering goods and services, followed by water with 30% of the total respondents, this was followed by 25% of the total respondents who were in support of railway transport and finally 10 % responded that steel and tubes industries use air transport in delivering its goods and services. This implies that steel and tubes have a large market in Uganda evidenced by the means of transport used. Air transport had few respondents because of the nature of goods and services offered and produced by steel and tubes industries ltd.

4.2.2 Effectiveness of transport system in steel and tubes industries limited

Table: v showing the whether transports system in Steel and tubes industries.

Response	Frequency	Percentage
Yes	25	62.5
No	5	12.5
Not Sure	10	25
Total	**40**	**100**

Source: Primary data, 2014

From the table above, 25 respondents representing a total number of respondents of 62.5% agreed that there has been effectiveness of transport system in Steel and tubes industries, 5 respondents representing 12.5% disagreed to the effectiveness use of transport system and 10 respondents representing 25% were not sure.

This implies that though many respondents agreed that there was effectiveness in transport system, the few respondents who disagreed and were not sure cannot be marginalized since they constitute a percentage a half of the respondents who agreed.

4.3 Challenges associated with transportation systems in Steel and tubes industries.

The second objective of the study was intended to examine the challenges associated with transportation systems at Steel and tubes industries. The findings collected were quantified for analysis as follows.

Table v: Showing the response to the Challenges encountered in the transport system of Steel and tubes industries.

Challenges	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Total	
	F	%	F	%	f	%	f	%	F	%	F	%
Perishability	18	**45**	5	**12.5**	4	**10**	7	**17.5**	2	**5**	40	**100**
Traffic congestion	20	**50**	5	**12.5**	7	**17.5**	2	**5**	6	**15**	40	**100**
Limited efficiency of road transport	16	**40**	6	**15**	3	**7.5**	8	**20**	3	**7.5**	40	**100**
Complexity of logistic function	15	**37.5**	5	**12.5**	6	**15**	4	**10**	10	**25**	40	**100**
Poor quality of roads	30	**75**	0	**0**	6	**15**	2	**5**	2	5	40	**100**

Accidents and limited safety	25	**62.5**	2	**5**	3	**7.5**	5	**12.5**	5	**12.5**	40	**100**
High costs due to fuel increase	20	**50**	12	**30**	2	**5**	6	**15**	0	**0**	40	**100**
Limited efficiency and effectiveness	14	**35**	10	**25**	4	**10**	10	**35**	2	**5**	40	**100**

Source: primary Data, 2014

From the above it can be seen that there are several challenges encountered in transport system.

Perishability had 45% of the respondents who strongly agreed, 12.5% agreed, 10% were not sure 17.5% disagreed and 5% strongly disagreed

In relation to the challenges encountered in the transport systems at Steel and tubes industries, traffic congestion had 50% of the respondents who strongly agreed, 12.5% agreed 7.5% were not sure, 5% disagreed and 15% strongly disagreed.

Limited efficiency of road transport had 40% of the respondents who strongly agreed, 15% agreed, 7.5% disagreed 20% were not sure and 7.5% strongly disagreed

Complexity of logistical function had 35% of the respondents who strongly agreed 12.5% agreed, 15% were no sure 10% disagreed and 25% strongly disagreed.

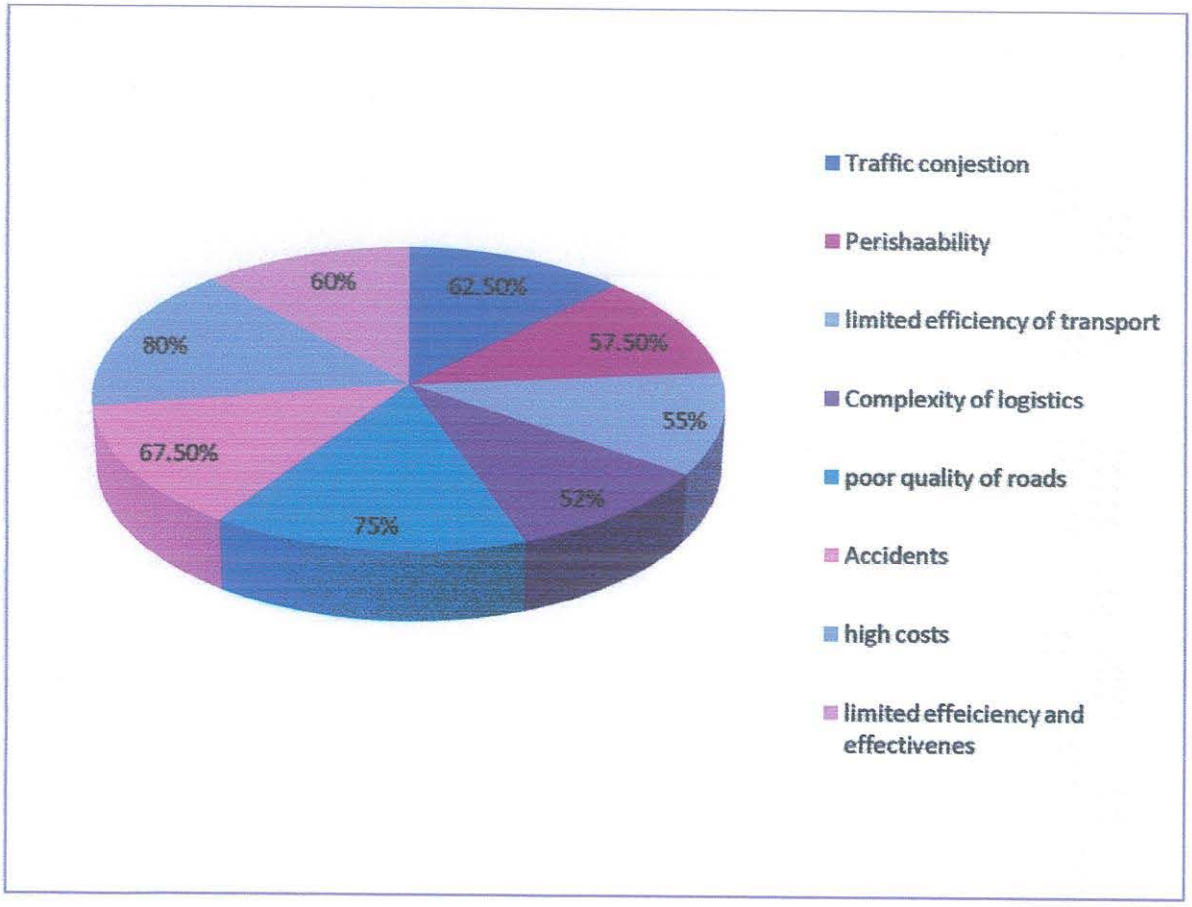
Poor quality of roads had 75% of the respondents who strongly agreed, non % agreed,15% were not sure, 5%disagreed and 5% strongly disagreed.

Accidents and limited safety had 62.5% who strongly agreed, 5% agreed, 7.5% were not sure, 12.5% disagreed and 12.5 respondents strongly disagreed.

High costs due to fuel increase had 50% of the respondents who strongly agreed, 30% agreed 5% were not sure 15% disagreed and none strongly disagreed

Limited efficiency and effectiveness had 35% of the respondents who strongly agreed 25% agreed 10% were not sure, 35% disagreed and 5% strongly disagreed.

Chart showing the total number of respondents who strongly agreed and agreed with the challenges encountered in transport systems at Steel and tubes industries.



Source: Primary data

From the above table it can be seen that in relation to the challenges encountered by Steel and tubes industries in transportation include high cost with 80% of the respondents who strongly agreed and agreed, followed by poor quality of the road transport in Uganda that had 75%, of the respondents who strongly agreed and agreed.

4.4 Mechanisms for improving the transport system for effective delivery of goods.

Table vi: Showing response the solutions to be appropriately applied to improve the effectiveness of transport systems in delivery of goods and services.

Measures to the challenges	**Strongly Agree**		**Agree**		**Not Sure**		**Disagree**		**Strongly Disagree**		**Total**	
	F	**%**	f	**%**	F	**%**	F	**%**	F	**%**	***F***	***%***
Use of reverse logistics	16	**40**	12	**30**	2	**5**	10	**25**	2	**5**	***40***	***100***
Direct shipping	20	**50**	10	**25**	2	**5**	5	**12.5**	3	**7.5**	***40***	***100***
Coordination of logistic function	14	**35**	18	**45**	2	**5**	4	**10**	2	**5**	***40***	***100***
Appropriate planning	20	**50**	12	**30**	2	**5**	5	**5**	4	**10**	***40***	***100***

Timely and prior deliveries	14	**35**	12	**30**	5	**12.5**	1	**2.5**	10	**25**	***40***	***100***
Adaption of appropriate personnel	13	**32.5**	10	**25**	5	**12.5**	7	**17.5**	5	**12.5**	***40***	***100***

Source: Primary Data

The data collected above concerning the strategies shows that:

Use of reverse logistics had 40% of the respondents who strongly agreed, 30% agreed, 5% the respondents were not sure and strongly disagreed, and 25% respondents disagreed.

55% of the respondents strongly agreed in respect to 'direct shipping, 30% agreed, 5% were not sure, 7.5% of the respondents strongly disagreed and 2.5% disagreed.

Coordination of logistic function' had 35% of the respondents who strongly agreed, 45% agreed, 10% of the respondents disagreed, 5% of the respondents were not sure and 5% strongly disagreed.

50% of the respondents strongly agreed with appropriate planning, 25% agreed, 10% disagreed and 10% of the respondents strongly disagreed and 5% of respondents were not sure.

Timely and prior deliveries was commented on by 35% respondents who strongly agreed,30% agreed, 12.5% were not sure, 2.5 respondents disagreed and 25% strongly disagreed

Adopting appropriate personnel to handle transportation issues was agreed upon by 32.5% respondents who strongly agreed, 25% agreed, 17.5% disagreed, 12.5% strongly disagreed and 12.5% of the respondents were not sure

From the above findings it can be concluded that the strategies advanced are key for improving the transport for effective delivery of goods by Steel and tubes industries evidenced by those who on average strongly agreed and agreed. Beyond average, those who strongly agreed and agreed with coordination of logistics function and appropriate planning, followed by 75% of those who strongly agreed and agreed with direct shipping, followed those who strongly agreed and agreed with use of reverse logistics, followed by 65% who responded to timely and prior deliveries and finally 58% strongly agreed and agreed with adopting appropriate personnel to handle transportation issues.

4.4 The role of transport systems in the delivery of goods and services at Steel and tubes industries

The third objective sought to find out the role of transport system in the delivery of goods and services at Steel and tubes industries

Table vii: showing responses to whether transport systems aid in delivery of goods and services at Steel and tubes industries

Response	Frequency	Percentage
Yes	25	62.5
No	5	12.5
Not sure	10	25
Total	**40**	**100**

Source: Primary data

From the above tabulation, it is evident that according to the respondents, transport system play a crucial role in efficient delivery of goods and services in Steel and tubes industries as seen by 62.5% of those that agree, though the 12.5% say otherwise and

25% were not sure cant underestimate the majority agreement. Hence the need for effective recommendations.

Table vii: Showing the roles of transport in efficient service delivery of goods and services

Roles of transport in service delivery	**Strongly Agree**		**Agree**		**Not Sure**		**Disagree**		**Strongly Disagree**		**Total**	
	F	**%**	f	**%**	F	**%**	F	**%**	F	**%**	***F***	***%***
Timely deliveries	16	**40**	13	**32.5**	4	**10**	6	**15**	1	**25**	***40***	***100***
Efficiency and effectiveness in production	20	**50**	11	**27.5**	3	**7.5**	1	**2.5**	5	**12.5**	***40***	***100***
Customer satisfaction	15	**37.5**	14	**35**	5	**12.5**	6	**15**	0	**0**	***40***	***100***
Availability	20	**50**	11	**27.5**	5	**12.5**	4	**10**	0	**0**	***40***	***100***
Stimulating market growth	10	**25**	18	**45**	2	**5**	4	**10**	6	**15**	***40***	***100***
Increased sales	18	**45**	8	**20**	5	**12.5**	3	**7.2**	6	**15**	***40***	***100***

Source: Primary Data

In reference to the table above that explicitly expresses the roles of transport systems in the delivery of goods and services in steel and tubes where

Timely deliveries had 40% of the respondents who strongly disagreed, 32.5% agreed 10% were not sure, 15% of the respondents disagreed and 2.5% of the respondents strongly disagreed.

Efficiency and effectiveness in production had 50% of the respondents strongly agreed, 27.5% agreed, 7.5% were not sure, 12.5% strongly disagreed and 2.5% of the respondents disagreed.

Customer satisfaction had 37.5% of the respondents who strongly agreed, 35% agreed, 12.5% were not sure, 15% of the respondents disagreed and none strongly disagreed.

50% of the respondents strongly agreed, 27.5% Agreed, 12.5% were not sure, 10% disagreed and non of the respondents strongly disagreed with availability of goods as one of the roles of road transport in efficient service delivery.

Stimulating market growth had 25% of the respondents who strongly agreed, 45% agreed 5% were not sure, 10% disagreed and 15% strongly disagreed.

Increased sales had 45% who strongly agreed, 20% agreed, 12.5% were not sure, 7.2% disagreed and 15% strongly agreed.

CHAPER FIVE

DISCUSSION, SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS

5.0 Introduction

This chapter presents the discussion, summary, conclusions and recommendations made based on the study findings. They were made basing on the research questions. It also gives areas of further study.

5.1 Discussion of Findings.

This section presents the summary of findings which were based on the research questions and a comparison of other authors views on the findings.

5.1 Transportation systems used in Steel and tubes industries.

In relation with the first objective which was set to find out the transport systems used at Steel and tubes industries, the researcher found out that road, railway , water and air transport systems are used at steel and tubes industries with road transport that dominate the others. They further argued that road transport is used in delivery of finished goods to customers whereas the later for transporting raw materials for processing to the factory.

5.1.2 Challenges encountered in the transportation systems at Steel and tubes industries.

From the finds in chapter four as regards to objective two , the researcher found out that the key challenges to steel and tubes industries include transportation include high cost with 80% of the respondents who strongly agreed and agreed, followed by poor quality of the road transport in Uganda that had 75%, of the respondents who strongly agreed and agreed.

The argument of transportation is in line with Lambert, Douglas M.; Martha C. Cooper, and Janus D. Pagh (1998). Who contends that Few companies use analytical tools for evaluating the effectiveness of their policy measures concerning transport and its costs, both ex-ante and ex-post. Also most companies have little data on goods transport

which could be used for such evaluations. Data are rarely collected, and tend to be despite the fact that cities vary in size, population and in other ways, there are some common challenges. The significant contribution of freight transport to total traffic and moreover the contribution of freight transport to problems of accessibility, congestion, environment and safety is leading to growing awareness of the importance of urban goods transport policies. However, most cities are not adequately equipped as yet to analyze and prepare for these challenges. With the expected growth in freight transport, most cities are increasingly concerned about deteriorating accessibility, environment and safety. On the other hand, cities are aware that despite the problems caused by urban goods transport, delivering goods to the city (both to commercial premises and to private dwellings) is essential for maintaining their economic and social functions.

5.1.3 Strategies to improve the transportation system at Steel and tubes industries

The second objective which was to find out the challenges encountered in administering transport systems at steel and tubes industries also sought to establish parameters for improving transportation systems. The mechanisms were seen to include effective coordination of logistics function that had 80% of agreement of the respondents other include direct shipping , adopting a reverse logistics strategy , timely deliveries and order making , Appropriate planning and Adopting appropriate personnel to handle transportation issues.

The key finding of effectively coordinating the logistics function is in line with Weele J. A. (2005) who argues that Agreement among all stakeholders, especially Logistical matching systems for freight transport using the internet are a type of e-commerce (B2B) within the freight industry that attempt to match the demand from shippers who offer jobs for carrying goods and the supply from freight carriers who offer a vacant space on their trucks that can be used for transporting additional goods. In principle, all the activities of offering demand and supply, auction, negotiation and transaction are done via the Internet, although telephone and fax are also used for negotiation and

questions/answers. ITS is used for identifying the vehicle location and its carrying loads in the logistics matching systems.

5.1.3 Role of transport systems in efficient delivery of goods and services at Steel and tubes industries limited.

In line with the third objective which was set to establish the contributions of transport systems towards efficient delivery of goods and services, it is clear that basing on the 72% of the respondents who strongly agreed with the points of contribution raised by the researcher. The contributions were. Stimulating market growth , increased sales , availability of goods , customer satisfaction , Efficiency and Effectiveness in production and timely delivery of goods and services. The respondents further argued that the above is achieved if the logistics sector is appropriately fastened together. The argument of contribution are not different from those of authors like (Ottaviano, 2008) and (Melitz, 2003).

Who argue that the theoretical predictions on the net effects of transportation improvements on firms and local outcomes are ambiguous. Better transport infrastructure brings places and people closer together. This has two effects on the actual size of the markets. Firstly, for a given location of firms and workers, effective density increases, as it becomes easier to reach other locations using the improved transportation network. Secondly, new infrastructure increases the attractiveness of locations, which may boost spatial concentration if firms and workers relocate. These effects may reinforce each other and create positive agglomeration spillovers. On the other side, improved access to markets also strengthens competition, forcing the exit of the less productive firms and thus increasing aggregate productivity Finally, firms use transport services as a production input, so changes in the supply and relative prices of transport affect the input mix used by the firms and their demand of other inputs, for example labour.

5.2 Summary of findings

From the study, the findings are

- Steel and tubes industries use a series of transport systems with road transport being the most dominant means for delivering goods and services.

- Transport systems at steel and tubes industries are associated with several challenges key being high costs due to fuel increase and infrastructural breakdowns and poor road sector disrupts business.

- The key strategies that can improve the transport system at steel and tubes limited include coordinating the logistics function among other functions.

- The transport system is pivotal in the delivery of goods and services to customers as evidenced by the arguments provided for on the following grounds.

- Stimulating market growth , increased sales , availability of goods , customer satisfaction , Efficiency and Effectiveness in production and timely delivery of goods and services

5.3 conclusion

The research was set to assess the role of transport systems at steel and tubes industries, the research was guided by the objectives of the study that included , establishing the transport systems used at steel and tubes industries limited, establishing the challenges and strategies of improvement of transport systems plus evaluating the contributions of transport systems. The key finds were that several transport systems are used with road dominating, the transport systems are associated with challenges to which include costs and poor road network. This promoted the researcher to seek for strategies from the respondents that among others proposed effective coordination of logistics function and adequate planning for effective delivery. The final verdict was an exploration of the contribution of the transport systems in

delivery of goods and services that was got wanting hence the recommendations for harmonious co- existence of steel and tubes industries.

5.4. Recommendations

From the findings, the researcher advances the following recommendations.

From the 62.5% respondents who attach relevancy to transport systems at Roofing's indicate the criticality of transportation, the management of steel and tubes industries need to adopt an appropriate transport mode that is sufficient for customer satisfaction in delivery.

Pursuant to the challenges encountered that include cost, the management of steel and tubes industries should adopt the strategies proposed in the researcher by the respondents especially that of effectively coordinating the logistics function. This is because the proposals in this regard are made by the real people who interface with transportation

Steel and tubes industries should establish information and technology equipments that can help to effectively monitor order making, processing and final dispatch of goods and or services ICT will enhance transportation as communications will be made easier.

The fact that steel and tubes industries uses the road transport that is associated with cost and inefficiency, steel and tubes industries need to adopt alternative less costly means of transport such as railway , water and air for inbound logistics and for out bound if appropriate to attain efficiency and value for money.

5.5 Areas of further study

Time and financial constraints calls for further research on transportation systems.

- Role of road transport in delivery of Logistics
- The role of transport systems in ensuring value for money and customer satisfaction in organizations.
- The effect of transportation logistics on the performance of the supply chain in organizations.

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APPENDICES

Appendix i : Research Instrument , Questionnaire

Dear sir/Madam

I am a third year student of Kampala international University pursuing a Bachelors degree in supplies and procurement management.

I am carrying out a research with the topic: The assessment of the role of transport systems in efficient delivery of goods and services in organizations , a case study of Roofings Uganda limited.

This questionnaire is purely for academic purposes and the information will be kept confidential.

PART A; General Information

1. For how long have you been working in the organization ?

One Month – 2years ☐ 3- 5years ☐ 6yrs – 9 years☐ 10 and above☐

2. Gender

Male ☐ Female ☐

3. In which age bracket are you?

18 - 27 ☐ 38-49 ☐

28 - 37 ☐ 50+ ☐

4. What is your level of Education?

Certificate ☐ Degree ☐

Diploma ☐ Masters ☐

Others ☐ PhD ☐

PART B : Transport systems

Please tick the appropriate box

Which form of transport systems does Steel and tubes industries use in the delivery of goods and services?

Railway ☐ Air ☐

Road ☐ water ☐

If your organization uses more than the above mentioned transport systems, please mention them and specify if your organization uses more than one of the above.

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.....

With specific reference to road transport, enumerate if the road transport sector is effective or not

YES ☐ NO ☐ NOT SURE ☐

From your own point of view, are the following the challenges encountered in the use of road transport system in your organization?

(1-Strongly Agree 2-Agree 3-Not sure 4-Disagree 5-Strongly disagree)

Tick the appropriate box. Depending on your level of agreement

Challenges encountered in road transport	**1**	**2**	**3**	**4**	**5**
Traffic congestion					
Perishability					
Limited efficiency of road transport					

Complexity of the logistical function					
Poor quality of roads					
Accidents and limited safety					
High costs due to fuel increase					
Limited efficiency and effectiveness					

If there are any other challenges, please mention them.

.....

.....

SECTION C : Mechanisms for improving the road transport for effective delivery of goods.

The following solutions should be appropriately applied to improve the effectiveness of road transport in delivery of goods and services (1-Strongly Agree, 2-Agree, 3-Not sure, 4-Disagree, 5-Strongly disagree) **Tick the appropriate box.**

Mechanisms to encounter challenges in road transport	1	2	3	4	5
Use Reverse logistics					
Direct shipping					
Coordination of logistics function					
Appropriate planning					
Timely and prior deliveries					
Adopting appropriate personnel to handle transportation issues					

If there are any other mechanisms your organization uses, please mention them.

.....

.....

PART D: Role of road transport system in the delivery of goods and services in organizations.

Does transport play a role in efficient delivery of goods and services in Steel and tubes industries?

YES ☐ NO ☐ NOT SURE ☐

7. If yes, the following are the roles of transport in efficient service delivery?

(1-Strongly Agree, 2-Agree, 3-Not sure, 4-Disagree, 5-Strongly disagree)

Tick the appropriate box depending on your level of agreement

Role of road transport in service delivery	1	2	3	4	5
Efficiency and Effectiveness in production					
Timely deliveries					
Customer satisfaction					
Availability of goods					
Stimulating market growth					
Increased sales					

If any other, please specify.

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.....

I am grateful for your co-operation