T.C.
ANTALYA BILIM UNIVERSITY
INSTITUTE OF POSTGRADUATE EDUCATION
MASTER OF BUSINESS ADMINISTRATION (THESIS PROGRAM)

CHALLENGES OF SUPPLY CHAIN MANAGEMENT IN WEST AFRICA: THE CASE OF GUINEA CONAKRY FIRMS

DISSERTATION

PREPARED BY

MAMADOU OURY BARRY

ANTALYA - 2021

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APPROVAL/ NOTIFICATION FORM

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Mamadou Oury Barry, a master student of Antalya Bilim University, Institute of Post Graduate Education, Masters in Business Administration with student ID 2011147, successfully defended the thesis titled "Challenges of Supply Chain Management in West Africa: The case of Guinea Conakry Firms" which he prepared after fulfilling the requirements specified in the associated legislation, before the jury whose signatures are below.

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PREFACE

This research base originally stemmed from my passion for developing a better supply chain with modern technology in the West African region, particularly in my country, Guinea. As the world moves forward into the digital age, generating vast amounts of data and born-digital content, there will be an increasing need to access legacy materials created with outdated technology. How are we going to access this content? My passion is not only to discover but also to describe the various challenges facing the supply chain and logistics industry to help future generations cope with and make significant changes in the field. In truth, I couldn't have reached my current level of success without strong support. First of all, my parents, MAMADOU GANDO AND MARIAMA BARRY as well as my big brother ABDOULAYE DJIBRIL BARRY who supported me with love and understanding. And secondly, my mentor PROF DR. A. MOHAMMED ABUBAKAR, who provided me advice and guidance to throughout the research process. Third, my family and friends who provided advice and help throughout the research process. Thank you all for your continued support.

..... / .... / 2021
Mamadou Oury Barry

Signature:

ÖZET

Küresel lojistik ve tedarik zinciri stratejisinin etkisi, hem akademi hem de endüstride yoğun tartışmalara yol açtı. Ancak 21. yüzyılda mal ve hizmetlerin daha iyi dolaşımını sağlamak için ticaret altyapısının olmazsa olmaz bir önemi vardır. Lojistik altyapının Afrika kıtasındaki ekonomik kalkınma ve ticaret üzerindeki etkisi, Afrika'da güçlü ticaretin yürütülmesi ve ticaretin kıta. Bu çalışma, Batı Afrika tedarik zincirinin özellikle Gine'de karşılaştığı çeşitli zorlukları açıklamaktadır. Tedarik zinciri zorlukları, teknoloji, karayolu ağı, demiryolu taşımacılığı, deniz taşımacılığı, hava taşımacılığı ve düzenleyici reformları kapsıyor. Çalışma sonuçları, yetersiz altyapının bölgedeki birçok tedarik zinciri şirketini etkilediğini ortaya koymaktadır. Ek olarak, kıtasal bir düzenleyici çerçevenin olmaması, siyasi irade eksikliği ve teknolojinin sınırlı uygulanması, büyük ölçüde Afrika'daki lojistik altyapısının gelişimini engelleyen faktörlerdir. Çalışma, Afrika'da lojistik altyapının geliştirilmesi için tesislerin ve malların uygun düzenleyici reformlarının yapılmasını önermektedir.

Anahtar Kelimeler: Tedarik zinciri, yönetim, zorluklar, fırsatlar, Afrika

ABSTRACT

The impact of global logistics and supply chain strategy has sparked intense debate both in academia and industry. But the importance of trade infrastructure as a sine qua non for facilitating better circulation of goods and services in the 21st century. The effect of logistics infrastructure on economic development and trade in Africa continent is essential as the review of freight logistics and supply chain activities is carried out in order to identify the main perspectives for the conduct of strong business in Africa and the development of trade on the continent. This study describes the various challenges facing the West African supply chain, particularly in Guinea. Supply chain challenges cut across technology, road network, rail transport, sea transport, air transport, and regulatory reforms. The study results reveal that inadequate infrastructure affects several supply chains companies in the region. In addition, the lack of a continental regulatory framework, lack of political will, and limited application of technology, to a large extent, are contributing factors hampering development in logistics infrastructure in Africa. The study recommends that the facilities and the transportation of adequate regulatory reforms of goods are established for the development of logistics infrastructure in Africa.

Keywords: Supply chain, management, challenges, opportunities, Africa

ACADEMIC DECLARATION

I hereby declare that I have written this master's thesis entitled "The challenges of supply chain management in West Africa: The case of Guinea Conakry Companies" according to academic rules and conduct ethics of Antalya Bilim University.

I also declare that all materials used in this thesis consist of the resources mentioned in the reference list. I check it all with my honor.

20/03/2021

Mamadou Oury Barry.

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ABBREVIATIONS

AU : African Union

ECA : Economic Commission for Africa

IMF : International Monetary Fund

NEPAD : New Partnership for Africa's Development

SC : Supply Chain

SCM : Supply Chain management

SCP : Supply chain partners

UN : United Nations

UNCTAD : United Nations Conference on Trade and Development

WEF : World Economic Forum

WTO : World Trade Organization

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1. INTRODUCTION

Most firms since the 1980s recognize the importance of collaboration and creating a good relationship with their entities in a chain of supply or even their direct suppliers. To better clarify this concept of the supply chain, several definitions have been proposed by different authors. According to Palmer (2012), Supply Chain Management (SCM) is the management of information and materials in the organization to provide the highest satisfaction with the lowest cost to the customer. While Jones and Quayle (1999) define (SCM) as an aptitude to oversee the total flow of a distribution channel from the supplier to the last customer, Davis, and Heineke (2005) explain (SCM) as a long-term relationship between customers, suppliers, and the organization to respond and deliver goods and services with the lowest cost. SCM is one of the most interesting fields for researchers and organizations.

The interest comes from globalization on manufacturing companies and internationally and, the development of the marketplace and the increased competition. Globalization push clients to put more pressure on manufacturers to improve flexibility, quality service, and maintaining competitive price as noted by (Laosirihongthong & Dangayach, 2005). Therefore, several organizations aim to improve quality, secure cost, develop technology, and consumer's added value as a means to grow in a competitive environment. To survive, the firm must be able to increase quality, reduce cost, and able to offer a faster response to the customers' needs. So to achieve that competitive advantage is to implement a strong (SCM) practices (Muhammad, 2004). Adopting SC activities might be a way to add value to customers. However, the huge investments in SCM, several surveys suggest that firms have difficulties to attain competitive advantage (Kabossa & Sitalakshmi, 2014).

This means that after many investments in the field of SCM, many firms are not gain more benefits on their investment. Consequently, it might be necessary to study more components of SCM which could improve performance, and this could be translated into profit. This is obvious in the Africa context. The African continent was exploited by the Europeans for many years because of its abundance of minerals resource through colonization. During the Europeans industrial evolution,

these minerals resources use in their evolution was taken from Africa. The African continent since that time to date has been one of the backbones of some product and agricultural produce, like cocoa cotton and tobacco for the international market so serve the entire globe. In recent times, the continent has experienced various economic activities in different dimensions. Oil and gas deposits in the continent have brought about different dimensions in the economic activities, some countries with these recent discoveries are, Ghana, Angola Nigeria, and Mozambique, whiles Zimbabwe have also recently discovered diamonds.

Also, the African continent boost of having seven out of the top ten growing developing economies in the globe (Kearney, 2014). The African continent is to become the leading market for china, the world's second-largest economy in the world, which main focus is on the mining of natural resources, agriculture products, and the building of infrastructure. Some suggestions state that Africa is on his way to outperform like the USA and Europe as the biggest partner of china in trade exchange by the year 2020 (Manners-Bell et al., 2014). There is no doubt Africa will be the major supplier of raw materials in the world. Also, the World Bank has pointed out that infrastructure logistics is a key element in the overall evolution of Africa's economic evolution and also plays a major role in the continent's drive for development shortly (Foster and Briceño-Garmendia, 2010). The important catalyst in economic development is a good logistics and a dependable chain of supply.

However, some observations have it that the SC in Africa is underdeveloped (Kearney, 2014), and much effort is needed in the aspect of logistics and transportation infrastructural development to aid Africa's commerce and economic development to a higher and sustainable standard. For smooth operation of SC in the aspect of flow goods and services, information, and finance, there should be a good commitment of investment in the configuration of networks and asset are necessary for competitiveness in the region and the world at large. There is some motion that several African countries already existing infrastructure does not correspond to the growing population and the usage of that infrastructure as time goes by and needs adequate upgrade and improvement in the infrastructure to meet the growing population. An IMF study pointed out that to get the best from population growth, the policies of the government should concentrate on the

improvement of the private sector of the economy, agriculture, bridging the infrastructure gap, and improving human resources through education and also all these should be interlinked activities.

1.1. Aims of the Research

The primary purpose of this study is to help in identifying the different supply chain challenges facing managers and firms in the supply chain system in West Africa with more attention in Guinea. To achieve the primary objectives of the study, the following theoretical objectives were set:

- To review the literature on supply-chain management and how it relates to the West Africa supply chain companies.
- To review the advantages of adopting strong supply chain management
- To review the different challenges faced by supply chain companies in West Africa particularly in Guinea.
- To develop some approaches to deal with these challenges faced by guinea supply chain management.

1. 2. Motive and importance of the Research

The motivation of this thesis is above all to provide a plus in the field of supply chain management in West Africa particularly in Guinea. Guinea is the second largest bauxite reserve in the world after Australia and one of the largest importers of raw materials in the world. In addition to these imports, the country again exports more finished products. With all this export and import flow, the country is faced with a serious infrastructure and logistics issues that affect the entire supply chain. This thesis will list the difficulties faced by most supply chain management companies while proposing solutions to better overcome these obstacles. The importance of this research is to help companies better understand the supply chain sector in West Africa particularly in Guinea such as the challenges and opportunities in the sector. Also, help future researchers to understand the importance of the sector in West Africa and particularly in Guinea.

Professional and academic articles on area of the supply chain have showed up in literature since the late 1980s (Giunipero et al., 2008). However, SCM and logistics discusses research in academic journals was overwhelmed by the problems of the North America, Europe and some

countries from Asia (Kodali Soni et al., 2012), while logistical issues and research on SCM Africa were generally ignored (Svensson et al., 2008). Therefore, this lack of equitably distributed international representation of the search data is likely to have adverse impacts on knowledge and current understanding of different phenomena within logistics management (Svensson et al., 2008). The analysis of studies carried out in Africa is therefore important to perceive how SCM and logistics of African countries differ with regard to implementation and understanding. These help analysts identify trends in logistics development in regions like Africa and can generate ideas for further information on logistics and research policies. Such business is increasingly important as several African nations are increasingly The International Journal of Logistics Outsourcing Centers for the Management of Global Supply Chains of Apparel, Automotive Consumer Goods and Electronics (Economic Perspectives in Africa, 2015, Acha et al., 2010).

Financially, Africa is no doubt the most powerful region of the (World Bank, 2017, Berman, 2013). An examination by The Economist (2011, 2016) features the capability of the African landmass by showing that six of the ten economies in the quickest improvement of the planet are in sub-Saharan Africa. Besides, the economy of Africa grew 3% in 2017 (African Development Bank, 2018, The World Bank, 2018).

1.3. Structure of the study

This study consists of five 5 chapters. The first chapter is the introduction, which talks generally about the background of supply chain management in the world some definitions, and the purpose of the study. The second chapter is the literature review which explains the importance of supply chain in the business world and the challenges faced by the supply chain in West Africa. The third chapter focuses generally on the case study, the challenges faced by Guinea supply chain companies. The fourth chapter shows the results of our findings. The fifth chapter focuses generally on some approaches to deal with these challenges in the case studies

2. LITERATURE REVIEW

Supply chain management is a concept that has evolved significantly in recent years especially in manufacturing, production, and logistics (just-in-time).

2.1. Logistics and Supply Chain Management

Nowadays, SCM represents an autonomous management concept, although it's largely dominated by logistics (Ruben & Lauri, 2009). A supply chain is made up of several business entities "suppliers, manufactures, wholesalers, distributors, retailers, and customers" whose mission is to ensure the flow of raw materials, components, or a finished product from the source to the final destination (Gunasekaran et al., 2003).

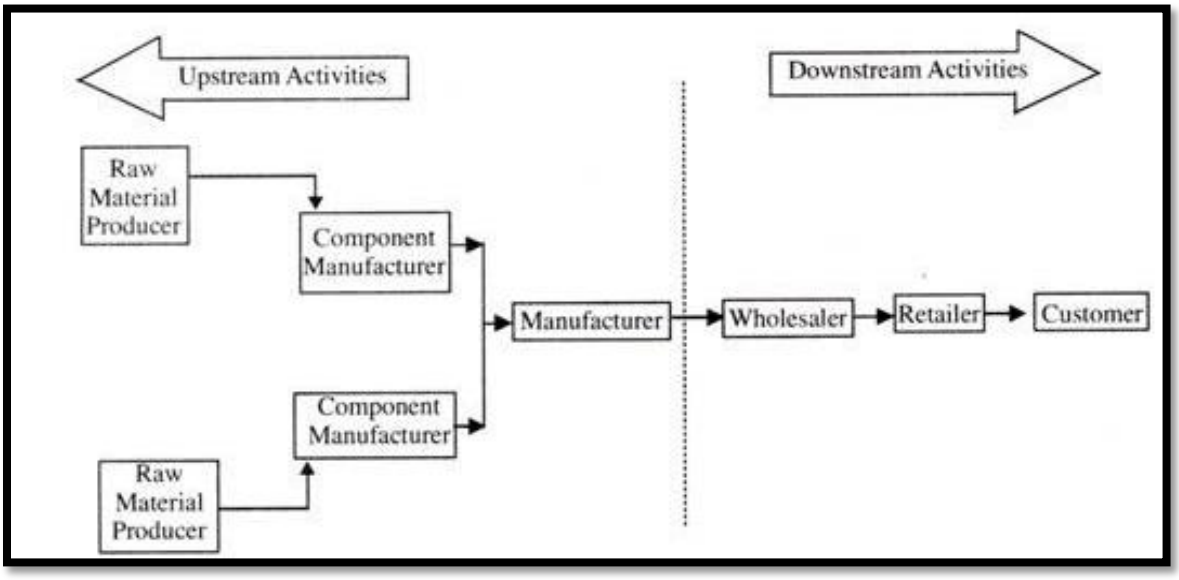

Figure 1: supply chain model (source: supply chain management system)

"The activities close to the raw material stage are known as upstream activities and activities between the manufacturer and end consumer are downstream activities. Marketing distribution concerns these downstream activities. A typical supply chain consists of multiple companies that coordinate activities to set themselves apart from the competition".

Perhaps, the new business source of competition for an organization is external and it is determined by how strongly companies link operation with their supply chain partners such as suppliers, wholesalers, distributors, retailers, and the end customers. SCM offers an administration ideology to direct tasks and connect with partners (both downstream and upstream) as well as the companies' internal supply chain (Ross, 1998). The aims of supply chain management are not just related to increase the performance of an individual company, but all the whole supply chain (Mentzer et al., 2001). Any successful business manager will acknowledge the crucial importance of strong and effectively organized supply chain and logistics. Implementing effective SC and logistics system is a key element to have a competitive advantage to competitors.

According to Adewole (2003), logistics is the process of planning, implementing, and controlling effectively and efficiently the flow and storage of goods, services. It also includes the related information from the start point to the end customer as well as conforming to the requirements of all the movements both inbound and outbound. The activities of the supply chain are generally organized in the flow-through process through a network of organizations. It is the global integrated management system that provides coordination of all logistics activities, including operating and financing mechanisms that contributes to driving the whole offer to meet performance requirements at an affordable cost (Adewole, 2019). The main objective of supply chain and logistics is to provide an avenue for the regulation of all activities and processes such as, logistics, information, and financial flows. This enhances the efficient execution of the processes.

(Fig.1).

Fig.2 the simplified linear logistics and supply chain structure from the source to the end consumer

2.2. Critical Issues in Logistics and Supply Chains in Africa

According to, World Bank Africa continent has a serious disadvantage in the infrastructure behind the rest of the word, the lack of this poor infrastructure is generally regarded as one of the main reasons for Africa's low competitiveness, particularly is represented risks for investors and high costs. The continent currently presents several difficulties for logistic and SC operations. There are several challenges to logistics activities in the African business markets. The most common challenges facing supply chain businesses in Africa are the poor road quality, political conflicts, insufficient and ineffective regional collaborations, inadequate rail capacity, insecurity of life and property, bureaucratic bottlenecks, weak decision-making processes, low technology, and other cultural issues (Adewole, 2019).

Nollet et al., (1994) noted that, the magnitude problems faced by supply chain firms in Africa includes; the lack of hard currency and qualified staffs, the key role of finance and accounting, the low credibility of the offers, breakdowns of contracts, long delays, moral values, and high cost of operation adds to the set of complex challenges and frustration of the firms. Adding to the above, these challenges have negatively affected the businesses of importers and exporters in Africa. One crucial problem faced by the SC and logistics systems in Africa is the high unpredictability in the delivery time burdening companies to keep higher volumes of inventory. It has been noticed by the World Economic Forum (WEF) the continent of Africa loses about 850$ million annually in interests paid to buy inventories in advance. This has led to a 40% higher in losses for SC and Logistics companies on the continent than those in East Asia (Adewole, 2019).

According to, WEF to complete border crossing procedures and paperwork in Africa it takes an average of 35 to 40 days longer than in East Asia and Europe. It takes a lot of time to even clear goods due to customs restrictions has made supply chain operations costly. According to Matsaert (2015), transportation and freight costs in Africa continent is very high among other continents in the world, with more than 50% more freight costs per kilometre than in Europe or the United States. This additional cost is due to a "logistical gap" as a result of inadequate warehousing facilities, infrastructure, and low investments in technology, poor road, and rail

transport. Investing in commerce can be challenging without an established adequate SC systems. It is essential to note that, for Intra-African businesses to develop and reach its full potentials, there must be an existence of an adequate logistics and transport systems.

2.3. Technology in Logistics and Supply Chain in Africa

According to Merrifield (2000), the most effective strategy for creating and maintaining a competitive advantage has become a major concern for SC and logistics firms. In the past, business firms focused on improving quality and reducing operational costs to increase their competitive advantage tendencies. However, in recent years, companies are investing in research and development activities to improve and accelerate their innovative tendencies to a global standard. SC firms must be able to adapt current trends in technology in creating and commercializing their products and services (Porter and Stern 2001). Also, the effective and efficient management of strategic alliances is key in building up the process that improves the success of SCM systems (Monczka et al., (2000). It is vital in improving the extensive data management and advanced inter-organizational information systems to enable greater information exchange within the organization (Gustin et al., 1999). Innovative information technologies provides the avenue to transfer accurate and essential information which makes the demand and inventory visible throughout the SC processes.

Extant literature suggests that information technology is the most important factor in logistics and SCM advancements (Dawe, 1994). In support of that, technology has been ranked as the most vital feature in improving logistics processes by about 34% of logistics executives across the world (Bradley et al., 1999). By this, it can be explained that, the adoption and operationalization of new technology is crucial in unifying the purposes and strategies of an organization and as well as its supply chain partners. This enables the firms to eliminate repetitive efforts, reduce wastage of resources, and accelerate the flow and sharing of information. Also, proper implementation of electronic innovation will expand the quick of developments of interest and supply, lower unpredictability and variability, enhance planning and decision making and remove barriers that increases holding inventory between productions, warehouse, and retail

outlets (Adewole, 2019). Cutting-edge digital technologies will improve the full operationalization of strategic business models in Africa.

The technology adopted has the potential to change the dimensions of trade on the continent. Companies in the world today are seeing an improvement in their market volatility in a rather competitive market as a result of the current approaches to conducting business. To increase their economic performance, African countries must examine the current landscape to create solutions that will help transform and enhance its logistics operations across the continent. International contractors who do business in Africa should work with national governments and regional African to incorporate freight logistics and SC strategies with new technology to increase firm performance in Africa. Through partnership commitments between commercial investors in African governments, the weight of exchange and investment costs in innovative logistics capabilities will be shared which in extension increases the market success of these firms (Adewole et al., 2019).

2.4. Infrastructure and Logistics in Trade and Development

Transport and geographical factors are among the main determinants influencing the intensity around the world. In such manner, the geographical distance between a region and its major trading partners and trade facilitation is often considered the factors elements behind the competitiveness of a region in the international business sectors (Wilson et al., 2005).
However, it is imperative to consider other physical and geological angles that few literature on the subject has largely overlooked, namely the factors related to access to services relies on logistics. High quality logistics infrastructure, distribution intermodal facilities in the country, and the number of logistics operators and specialization are considered increasingly important as a means to enhance international competitiveness and increase market share enterprises (Wilson et al., 2005).

In this context, Jacks, and Pendakur (2010) argued that the most common perception is that the growth of world is related with innovative improvement in the correspondence and transport sectors. Also, the results of Bernhofen et al., (2013) showed that containerization essentially affects world exchange during the time frame 1962-1990. They guarantee containerization not only

impacted the operation and relocating ports, but all the transport industry and has also been accompanied by the creation of a modern intermodal transport system, which facilitates the transport capacity increases and decreases delivery by intermodal freight movements between trains, trucks and ships. Considering this, the African logistics foundation will be analyzed from two basic points of view; transport framework and regulatory reform.

2.5. Transport Infrastructure

Achieving higher economic growth is the major challenge for sub-Saharan Africa. Africa's development has been relatively low compare to other continents, experiencing less than half of the average growth and about half of the average investment efficiency levels obtained in other developing countries (Ondiege and Moyo, 2013). The most important component of African commerce and economic development is the freight transport infrastructure. However, the lack of efficient, well-established infrastructure that enables efficient transport services is the main obstacle in doing business in Africa. According to the report of the New Partnership for NEPAD African Development (2010), the challenges faced by businesses in Africa in the formation of a constructive infrastructure network that connects not only the continent with the rest of the world, but also incorporates the many countries on the continent itself has been the subject of discussions for several years. The current state of the transport continent Africa logistics system infrastructure, including rail, road, sea / river and air relates significantly to economic recovery, social and technological development of Africa.

2.5.1. Road Transport

In Africa, road transport is one of the significant means of transportation. It represents about 80% of freight traffic on the continent NEPAD (2010). The poor road networks in Africa Road is a pertinent challenge for logistics, trade and economic growth in Africa. Many empirical studies have examined the economic impact of poor road conditions (Henderson et al., 2001). Amjadi and Yeats (1995) find that the relatively low level of exports from sub-Saharan Africa is mainly due to transport costs. In a study of trade and transport costs, (Limao and Venables 2001) find that poor infrastructure accounts for 60% of transit costs for landlocked countries, against 40% for coastal countries. Improving cross-border infrastructure is an important part of the African development agenda (Simuyemba, 2000). Adewole et al., (2019) noted that, several factors

including poor road infrastructure, weak road maintenance systems, failure to comply with road safety concerns, gas emissions, human and institutional capacity, truck fleet management, and maintenance, as well as financing undermines the road transport systems in Africa.

Many countries in Africa lack sufficient financial and human resources to build roads and maintain them according to international standards. The continent, development of the road network has been insufficient, and the existing roads are poorly maintained, which makes transportation of goods difficult especially during the rainy season. Also, internal factors such as conflict and civil wars have marred the progress of road construction and road management systems. Territorial conflicts or civilians war have led to the destruction of roads resulting in the closure of vital links and road networks crucial for effective transportation within the continent. For example, Liberia, Sierra Leone, Angola, and Rwanda have experienced developmental delays following wars. As a means of solving transport problems, the United Nations (UN), Economic Commission for Africa (ECA), and the African Union (AU) in collaboration with the regional and international community have developed a plan for a trans- Africa including transcontinental road projects in Africa. This productive system targets advancing exchange and reducing poverty in Africa through the development of road infrastructure and the administration of road-based trade corridors.

2.5.2. Rail Transport

In several developed countries, Railways are the most financially savvy approach to move mass merchandise to significant distances via land. In Africa, Rail cargo is crucial in expanding the financial prosperity of the different nations. It is fundamental in supporting and giving an effective development of goods and services and the creation of value by its part in an integrated system SC across the African continent (Adewole et al., (2019). The continent of Africa has an aggregate of 82,000(KM), rail organization of which 69,000(KM) are as of now being utilized, the rest being closed because of war harm, cataclysmic events, or general disregard and absence of assets. A significant part of the networks in South and North Africa are electrified, just as the mining region of the DRC and a short segment of the Zimbabwe network as of now not in us (Bullock, 2009).

The density of traffic on the roads sub-Saharan Africa is generally low. Specialized mineral lines in West Africa and in Southern Africa in particular export lines of coal and ore Spoornet carry more than half of the total volume of cargo "railway (measured by net ton-kilometers). South Africa also dominates the rail freight in general, over 80% of freight traffic on non-mineral lines. Sub-Saharan African railways are therefore generally lightly loaded by global standards, and most networks struggle to generate sufficient funds to maintain and renew their infrastructure as needed (Bullock et al., 2009). Despite the difficulties in the areas, the African continent has recently developed a significant improvement in the areas of the railway network.

2.5.3. Sea Transport

In the last decade, there has been a significant growth of the world economy and world trade at a sustained rate. In 2017, world merchandise trade increased at a remarkable annual rate of 10% compared to 2016 (UNCTAD, 2018) with the value of exports and imports amounting to $ 19.4 billion (World Trade Organization, 2018). The impact of increasing globalization and trade liberalization is seen in the rapid and sustained growth in the emerging economies of Asia and Africa (Shuo, 2018). It can be said that globalization, reducing tariffs, and increasing efficiency in maritime trade, have contributed to reducing the cost of operations (movement of goods and services) worldwide leading to global prosperity and increasing consumption. Certainly, there is a strong link between the global economy, international trade, and shipping. Shipping in the African terrain is remarkable in the sense that, it supports the traditional means of moving mass quantities of goods from Africa to other continents or other continents to Africa. However, facilities in African seaports or harbours are still lagging behind acceptable worldwide standards due to the low level of investment in port infrastructure (Schwab, 2009).

For applications in the market worldwide and intensity, Africa should redirect its marine transportation system to improve and modernize freight administrations its African accomplices additional swapping. According, Adewole et al., (2019) Seaports are the main catalysts for intermodal transport links. For example, there may be connecting waterways to serve the landlocked countries in sub-Saharan Africa, the establishment of a good road transportation system and rail to ports on the west coast of Dakar, Senegal and Lagos, in Nigeria. The ports of Dar es Salaam in Tanzania and Mombasa in Kenya on the east coast, and the southern ports of Durban,

Maputo and Cape Town can also be connected to facilitate trade and movement of goods within and to outside the continent. In addition, the port of Conakry in Guinea and the ports of Beira in Mozambique respectively serve Mali and the SADC region. Although the effect of these ports may be minimal, connecting them with rail and road infrastructure can help open up the hinterland of the African continent.

2.5.4. Air Transport

Aviation is essential for Africa to compete in the emerging global economy. It is used to attract investment, expand trade, develop the tourism industry, and contribute to the growth of the continent. While the development of civil aviation depends partly on the level of income, it remains of utmost importance in Africa, especially in many low density landlocked countries can find ways the fastest and most appropriate of transport of perishable foodstuffs (Goldstein, 2001). There are large tracts of land without good roads or rail networks in Africa. Therefore, transportation by air appears to be an important option for transporting and distributing goods within and outside the continent. There has been a gradual increase in Airfreight services in Africa over the past 2 decades, however, the domestic commercial aircraft market has shown a little development in the sector.

The continent of Africa makes up about 15% of the world's population. There are around 230 airlines operating in African airspace which operates only 5.5% of the world's trade and freight aircraft (UNCTAD, 2013). This is as a result of the dearth of aircraft infrastructure and low competition in the air cargo market. In addition to this, the lack of a well-developed network of national airports and air cargo services is a major challenge for businesses in Central and West Africa (Adewole et al., 2019). According to Adewole et al., (2019), air transport infrastructure is essential in promoting economic growth. It is crucial in facilitating policies to improve the standard of living citizens although air transport alone cannot alleviate the poverty on the continent. In recent years, air transport has played a crucial role in the world trade. Aviation, therefore, has the potential to contribute positively to the progressive economic growth of Africa.

2.6. Regulatory Reforms

The monopolistic nature of logistics infrastructure in Africa often requires constructive regulations by governments as well as other stakeholders. Railways, seaports, roads, and airports,

including rivers, are some of the most common forms of infrastructure that exist along the hubs of transport network frameworks in Africa and governments assume a main part in the development and maintenance of such infrastructure. However, African governments actually have a duty to create a common legal framework to respond to the complexity and cost of regulatory processes necessary to the logistics of Tran and design of the SC network. For the impact of a possible logistics infrastructure, it is necessary that African governments review process to remove bureaucratic bottlenecks and complex and bureaucratic port regulations in Africa to increase the efficiency and effectiveness of shipping routes, railway, road, sea borders and airports (Thorbecke and Ougang 2018).

2.7. The Future effect of Supply Chain and Logistics on business and Development in Africa

There is an increasingly rapid demand of the major raw materials available on the African continent from Multi Nation Corporations across the world. The abundance of natural resources such as gas, oil, and mineral resources provides the avenue for an agricultural expansion in Africa (Chuhan, 2017). Experts consider that Africa is experiencing stronger growth in the year 2018 than at any time in its recent history with its growing wealth creating an increase in demand for a wide range of products. There is the need for businesses operating in Africa to flexible, innovative and proactive in their supply chain management in order to meet demands in Africa's multi-faceted physical, economic and political conditions (Chuhan et al., 2017). In recent years, the African continent has become the grounds for more investments from companies around the world with transport logistics playing a major role in the African trade (Chuhan, 2017).

It is important to note that the quality and nature of Africa's infrastructure and the efficiency of transport networks has an impact on the movement of goods (both import and exports). Comparing African countries to their counterparts around the world, intra-African trade is low due to low infrastructure and because most economies of the Africa continent are the supply base for most Multi-National Corporations (Schwab, 2009). According to the World Economic Forum (2009), Africa's commerce with other African commercial partners stands at about 11% in comparison to Asia, where there is a high level of intra-trade (about 50%) between countries in the Asian region. It is costly and time consuming to cross borders in Africa due to transport

infrastructure barriers to trade. African leaders is needed to build strong logistics transport policies that sufficiently take into account an African business of the future that will allow the construction of adequate infrastructure for efficient and rapid supply chains and networks. This will enhance distribution, support business creation and economic growth in the African continent.

3. METHODOLOGY

3.1. Context (The Republic of Guinea)

Guinea or the Republic of Guinea as it is formally known is a country in West Africa, and it currently has a population of **12,771,245** people (World Bank, 2018). It borders Guinea-Bissau to the northwest, Senegal, and Mali to the north and northeast, Ivory Coast to the east, and Sierra Leone and Liberia to the south and southeast. Guinea's official language is French, but it is home to several ethnic groups, including the Fulbhe, Malinke, Soussou, and smaller ethnic groups, which make up the remaining of the population. Guinea is a majority-Muslim country, where 85% are Muslims, 8% are Christians and 7% follow indigenous beliefs. Guinea's economy is dominated by minerals-bauxite, gold, and diamonds. The mining sector is 30% of Gross Domestic Product, and bauxite mining alone provides 80% of foreign exchange revenue for Guinea. By far, "Companies Bauxite de Guinea" (CBG) is Guinea's largest provider of revenue to the government.

According to the government in **2019**, Guinea GDP reaching an all-time high of **$11.40** Billion and a record low of **$1.92** Billion in **1986**. Future growth will largely be driven by an estimated $**24** billion in mining investment agreements signed by the government in the last few years. One of the biggest challenges facing the government is high inflation and low infrastructure. Despite its natural resources, bauxite, gold, diamond, iron, and hydropower, Guinea has struggled to translate and channel the revenue from these sectors into meaningful economic and infrastructure development for its population[1]. The government of Guinea accords less priority to investment in infrastructure and social services in the past years. Areas like infrastructure "rods, bridge…" water, energy, transport and technologies, these areas affect dramatically the SC companies, especially in the mining and agriculture sector.

According to Country Report (PRS Group, 2014)[2], In 2010, the Republic of Guinea had the lowest percentage of paved roads, of the total road network in the West Africa region, with only 2.8 km per 100 km². In 2003, Guinea had a total of 44,348 km of the road network, of which 4,342 km is paved and 40,006 km is unpaved. The national road network very is poor. Besides, of

the roads that are paved, 16% are in "good" conditions, 31% are in average conditions and 50% are in "bad" conditions, and of the unpaved roads, 6% are considered in good conditions, 51% are average and 43% are in bad conditions. The cost of rehabilitating all of the national roads-paved and unpaved is estimated to be around $1.5 billion.

Figure 3: African Map (Source: UN 2014)

Doing Business in Guinea (CIDB Malaysia, 2014) reports that, in addition to the deterioration of the road network in most of the country, the eastern and northern parts of the country remain the most inaccessible and the most remote. Guinea's trade with its neighboring countries in the sub-region is very important to its economy and road transportation is vital for the SC companies because the country's agriculture exports such as coffee, cotton, and palm oil rely heavily on road transport to move goods to these countries. Due to the country's lack of effective road transport systems, the Supply chain in the agriculture sector reports that the transportation costs are very high and make business development unproductivity due to the bad road network. This deficiency reduces the country's agricultural productivity and increases transports costs.

Figure 4: Road network (Source: Government, 2015)

Furthermore, the Republic of Guinea rail transport remains underdeveloped, and currently, the county has four rail lines, totalling 1,047 km. Three of these lines were originally built by mining and SC companies. Guinea's rail lines include the 662 km Conakry-Kankan line, which was built before World War I but has not been operational since the early 1990s due to maintenance and dilapidation. The Conakry-Kindia line, 105 km long, is managed by the "**Société des Bauxites de Kindia**" (SBK), and it links the Kindia bauxite mines to the port of Conakry, the Conakry-Fria line, 144 km long is managed and maintained by the **FRIGUIA** mining and SC company, and it connects the alumina plant in Fria to Conakry's port, Finally, the Kamsar-Sangarédi line is 136 km long, and is run by **Guinea Bauxite Company** (CBG), which connects bauxite mines in the town of Sangarédi to the port city of Kamsar. SC companies in the mining sector have pre-emption rights while their operations are active, but some pay annual fees to the government to use the rails. Though, all of Guinea's rail lines are considered outdated-not very developed and exclusively used for mineral exports.

Figure 5: Rail network (Source: Wikipedia, rail lines in Guinea, 2014)

Also, the Republic of Guinea currently has sixteen airports, of which, four have paved runways and twelve airports have unpaved runways. The main airport is Conakry-Gbéssia International Airport. There are three regional airports and seven secondary airports. Besides, the country has a total of five private aerodromes, which are used generally by mining companies. Conakry airport is currently served by more than fourteen different airline companies and has an increase in air traffic passengers to more than 1 million in 2019. Despite these improvements, the airport is running at 50% capacity and remains one of the most uncompetitive in the sub-region in terms of passengers and airline traffic. Conakry-Gbéssia International Airport is not yet a reliable and competitive airport, which can sustain heavy international air connections. Airports in the interior do not have navigational aid equipment and have high maintenance challenges to operate effectively and efficiently.

According to the minister of telecommunication, the Republic of Guinea telecommunication sector experiencing strong momentum with considerable investments and several growing subscribers, 9 million mobile phone users with a penetration rate of 88.45%, Internet access 1.809 million internet users in 2014 against 946,000 in 2013 metropolitan network Performed on a fibber infrastructure in two loops that cover the capital and suburbs on nearly 100 km. Nevertheless, many challenges remain the sector such as the National Backbone Project Fibber

optic covering 4000km from the national territory and the rehabilitation of the national telecom company. All these challenges affect dramatically the SC companies in the e-commerce sector, mining sector, agriculture sector, and other sectors.

3.1.1. Challenges faced by guinea supply chain companies

Republic of Guinean SC companies have several challenges in their operations not just infrastructure and technology challenges, after discussion with some managers of different SC companies they mentioned several challenges, they're faced to such as trust between their customer, information sharing, poor marketing strategies to the reach customer, access to capital, and some technical problems. According to the "**exit-voice theory,**" consumer loyalty is an essential key to client loyalty and ensuing maintenance, particularly in a competitive industry (Hirschman's, 1970). The theory depicts a circumstance where a client or customer gets disappointed with the service or product that the organizations give. The organizations find their inability to give fulfilment by means of two criticism instruments: exit, and voice.

The customer either exits, or quit purchasing or accepting organization service, or voices it protest of disappointment to the organization to get compensation. In any case, the theory predicts that the two prompt outcomes of expanded consumer loyalty are diminished client protests and diminished client exit (increased loyalty). Leaving clients either leave the market or buy or get service from a competitor. The anticipated impact of satisfaction on loyalty is strongly supported across a variety of product and service industries (Fornell et, al. 1996). In our case most of the mangers have big issues on how to retain their customers, to keep them loyal, or make potential customers in companies. According to (Porter, 1985), organizations are progressively embraced strategic partnerships with their suppliers and clients and carrying out SC coordinated effort drives to lessen squander in their acquisition and request satisfaction measures.

SC chain collaboration creates better, viable, and practical associations, yet a few organizations think that it's hard to urge their accomplices to share market interest data (Barratt, Kumar and van Dissel, 1996). The goal of SC coordinated effort is to acquire extra business benefits past those got by basically trading and incorporating data among providers and clients. Coordinated effort ordinarily includes strategic joint dynamic among the partners in the region of collaborative planning, distribution, forecasting, and product design (Horvath & Kumar, 2001).

Suppliers can respond quickly to demand and obtain products or services to customers faster when they have the required data. For example, a company like Amazon can respond quickly to customer orders without taking inventory by sharing customer orders and forecast data with suppliers (Chopra & Meindl, 2001).

However, in the Republic of Guinea SC Company managers mentioned that communication and information sharing with their customers or potential customer is very less due to the poor access to the internet and the weakness of their inventory platforms. Furthermore, marketing strategy research failed to adequately address the challenges inherent in a world that is moving quickly toward competition among networks of companies that can be referred to as global SC. Consider SCM first at a regional level. SCM, although largely emerging from the logistics discipline, addresses the coordinated cross-functional design and management of the flow of goods, information, and funds among at least three firms linked together to serve specific markets (Mentzer et al., 2001). Strategic marketing, when viewed in light SCM, becomes more complex as we now contemplate coordination of value understanding, creation, and delivery across three or more companies.

Now think about the management of the SC on a worldwide basis where geographical barriers are only one of many challenges that include differences in cultural norms, traditions, languages, commercial infrastructure, preferences, currencies, legal environments, and economic conditions. Finally, remember that business and technological environments change at any time in the world, creating strong market turbulence and uncertainty management. These conditions create numerous challenges for marketing strategists in many SC Businesses (Flint, 2004). Republic of Guinea SC companies faced these challenges particularly the geographic barriers, currencies issue, and business infrastructure. According to the transport and logistics manager in NALLOU TRANSIT, one of the biggest challenges they face nowadays is the political environment changes, and the reasons for that is, the port direction is changing at any six or nine-month. The new direction or the new port manager try to change the rules and regulation and these changes forced then to adopt new strategies for their customers and these things make sometimes they lose some customer and reduce their revenues.

Based on the previous discussion, we consider the following attributes of an inventory network, it is a set of at least three firms that are connected to each other through at least one upstream and downstream flows of products, service, data, and funds, which recognizes it from a purchaser and vender relationship (Mentzer et al., 2001). According to the manager of NALLOU TRANSIT, their company working with more 3 or 4 SC Company and we know that capital is the key to all business, several times capital transaction delay their operations due to banks' loans or internal problems with their financial partners. Also, technology issues affect dramatically and delay several times their business due to the weakness of the internet, their platforms, or their partner's platforms to share information between their companies. The Republic of Guinea has approximately 22 main Supply chain companies most of them operate in the mining and hydrocarbons sectors we listed some of the biggest SC companies in the Republic of Guinea.

Table 1: Republic of Guinea SC companies

Companies	Sector	Number of employees
united mining supply(ums)	mining, hydrocarbons, agriculture , cement...	4000 employees
transport terrassement minier	transit and Mining	300 employees
Ibda transport and logistics	Mining, Freight, and hydrocarbons	115 employees
Zatco gs	shipping merchandises, construction	more than 200 employees
Bolloré transport & logistics Guinée	shipping merchandises and port operations	more 1000 employees
Africa transport	hydrocarbons, freight, cement	153 employees
Dama Africa logistique	Storage, shipping merchandise...	156 employees
Guinea line logistic	mining, agriculture, freight,	53 employees
Ceva- partner ama logistics	healthcare, automotive, freight, technology	86 employees
Nallou transit	port shipping, freight, automotive	more 300 employees

3.1.2. Case study

This study target population were 22 Guinean supply chain companies, of the 22 companies, this researcher conducted an in-depth interview with 9 companies in several sectors such as shipping merchandises port operations, Healthcare, automotive, freight, technology Transit, and Mining Storage, shipping merchandise. The reason for choosing such 9 companies, first of all, their sizes in many employees, secondly, their globalization especially in the sub-regions and across the country, thirdly, their diversification in several sectors in supply chain areas. Also, in these 9 companies, our research focused on depth interviews with 7 managers/supervisors and 6 directors in the supply chain sector. In line with our research aims to explore the different challenges they faced in their daily operation.

3.2. **Collection of Data**

Qualitative research is a scientific inquiry approach that seeks to build a larger narrative, description, or holistic to inform the researchers to understand a cultural phenomenon or social phenomenon. Qualitative research is defined as, "process of organizing data into categories and identifying relationships among categories" (McMillan and Schumacher, 1993). Qualitative research worked out under interviews, document reviews, and a combination of observations. It gives a clear understanding of looking at variables in the natural setting in which they are found. Qualitative research gives several details about the data gathered through open-ended questions that provide direct quotations. Also, in qualitative research, the interviewer is an integral part of the investigation (Astalin, 2013).

3.2.1. Data Collection Tools

During the interviews, several steps ensure the trustworthiness of the analysis. First, a rigorous audit trail applied to the data. All materials were recorded such as interview transcripts, secondary data, and analytical memos to confirm all the data need for the research (Miles and Huberman, 1994). Secondly, all material was transferred in excel and paraphrased clearly. Thirdly, the excel file was entered into Nvivo 12 software that performed the systematic analysis to facilitate the understanding of the findings (Bazeley &Jackson, 2013). The Nvivo software improves the coding, support searches, and classification of the data as themes and patterns emerged. The author also adopted an outsider/ insider coding method (Gioia et al., 2013). The

outsiders reviewing and criticizing the coding process, the insider is the author who worked in the research, coded the data.

3.2.2. Data Collection Process

Our interviews experienced senior managers and directors in a different department, but most of the participants in this study, are managers or directors of the service operation department. Also, we used semi-structured interviews to collect significant data (Drever, 1995), intending to explore more the organizational behaviours based on managers' viewpoints. Semi-structured interviews permit profundity verbal exchange between the questioner and witness, accordingly offering more profundity and flexibility in eliciting information beyond "yes/no" answers (Drever, 1995). During the interviews, some interviewer mainly addressed their department/team and company environmental statements, strategies, programs, and performance. We also asked them to explain in detail their strength compared to their competitors. Interviews across between 30 and 45min and were conducted over five months from December 2019 to April 2020. The data collection ended when the interviews reached saturation. We anonymized the participant's details to safeguard confidentiality and use coded names (e.g., A1 indicate participant 01, A2 indicate participant 02 so far).

3.3. Data Analysis

3.3.1. Demographic Data

The interview was conducted on 13 participants. Demographic variables were the number of employees, sector, and enterprise ownership, Firm's age, the position of the participant, and approximate annual sales revenues of the participating company. **Table 2** shows that participant A1, A2, A6, A7, and A11 have above 250 number of employees in their companies and participant A3, A4, A5, A8, A9, A10, A12, A13 have between 51-250 number of employees in their companies. Next, it appears that all the participants have several activities in their companies such as mining, agriculture, freight, transit, storage, shipping merchandise, and healthcare. Also, **Table 3** shows that participant A1, A3, A5, A6, A7, A10, and A11 firm an operating between 6 to 10 years to now, participant A2 firm an operating more than 10 years to now and participant A4, A8, A9, A12, and A13 just started operating a few years to now some of them just have 1 or 2 years

activities in-country. It appears that most of the participant enterprise ownership is private enterprises except A13 whose ownership is a partnership. Table 1 shows that half of the participants are the Director and the other half are Manager/Supervisor. Also, the major part of the participant has approximately annual sales revenues between 1 to 5 million ($), two of the participants have approximate annual sales revenues less than 1 million ($), and one participant have approximate annual sales revenues between 6 to 10 million ($).

Table 2: Demographic breakdown (source: researcher analysis)

ID	employees	Sector	firm age	Ownership	position	annual sales revenues
A1	above 250	Mining ,hydrocarbons, agriculture and cement	6-10 years	private enterprises	Director	6-10 million
A2	above 250	shipping merchandises and port operations	above 10 years	private enterprises	Manager/Supervisor	above 10 million
A3	51-250	Mining, freight, and hydrocarbons	6-10 years	Private enterprises	Manager/Supervisor	1-5 million
A4	51-250	Storage, shipping merchandise	1-5 years	Private enterprises	Director	1-5 million
A5	51-250	Shipping merchandises, construction	6-10 years	Private enterprises	Director	1-5 million
A6	above 250	Port shipping, Freight, automotive	6-10 years	Private enterprises	Manager/Supervisor	1-5 million
A7	above 250	Transit and Mining	6-10 years	Private enterprises	Director	1-5 million
A8	51-250	Storage, shipping merchandise	1-5 years	Private enterprises	Director	1-5 million
A9	51-250	Mining, agriculture, Freight,	1-5 years	Private enterprises	Manager/Supervisor	Less than 1 million
A10	51-250	Shipping merchandises, construction	6-10 years	Private enterprises	Manager/Supervisor	1-5 million
A11	above 250	Transit and Mining	6-10 years	Private enterprises	Director	1-5 million
A12	51-250	Mining, agriculture, Freight,	1-5 years	Private enterprises	Manager/Supervisor	Less than 1 million
A13	51-250	Healthcare, automotive, freight, technology	1-5 years	Partnership	Manager/Supervisor	1-5 million

3.4. Findings

Figure 6: The figure shows the demographic relationships between participant A1 and A2, we observe that A1 and A2 have the same form of enterprise and their number of employees is above 250.

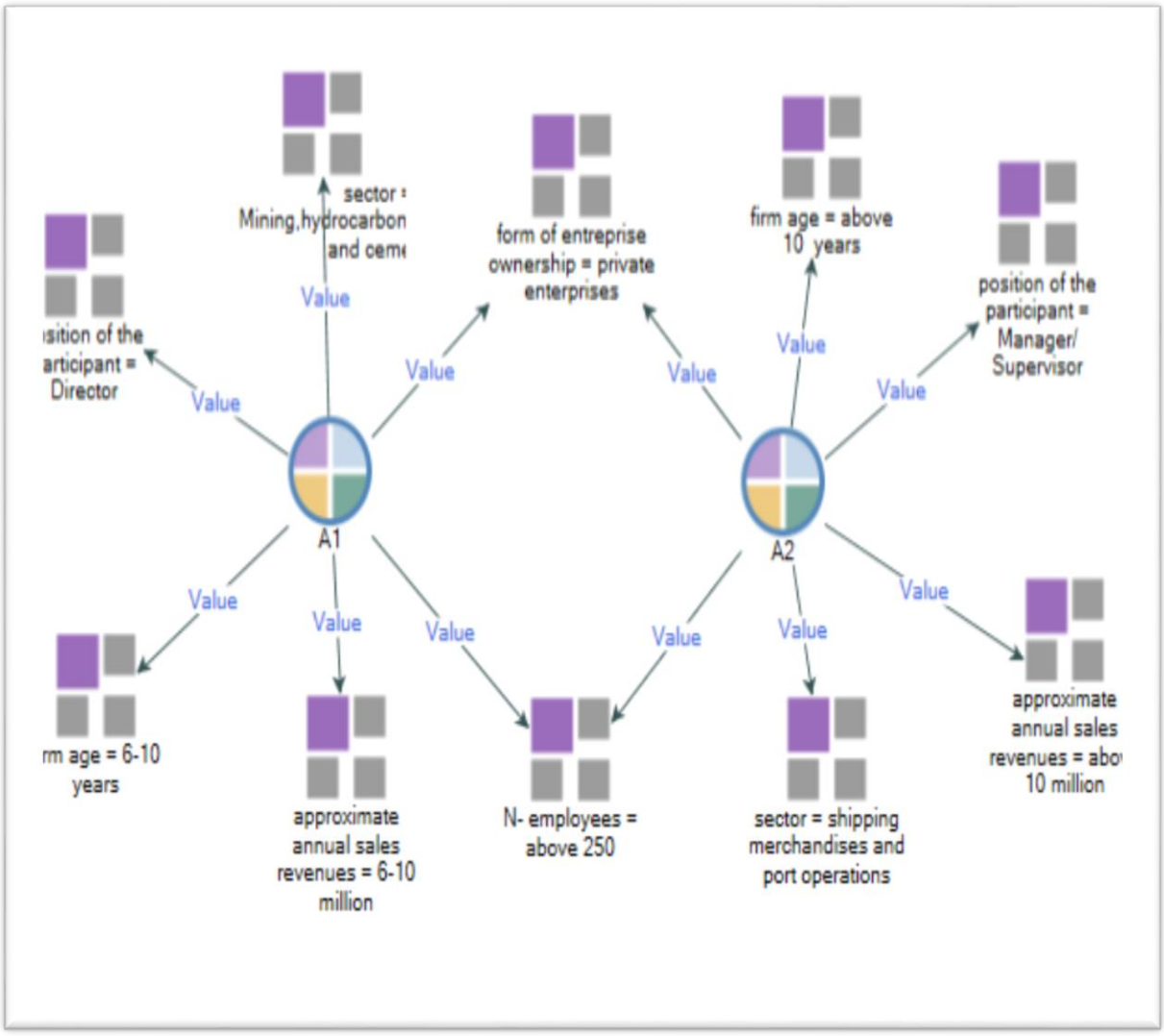

Figure 6: demonstrates the relationships between Participant A1 and A2 (source: Researchers analysis)

Figure 7: The figure shows the demographic relationships between participant A3, A4, and A5, we observe that A3, A4, and A5 have the same form of enterprise, their number of employees is between 51-250 and their annual sales revenues is between 1-5 million ($). Also, A3 and A5 have

a firm age between 6-10 years, and participant A5 and A4 have the same level position in their company.

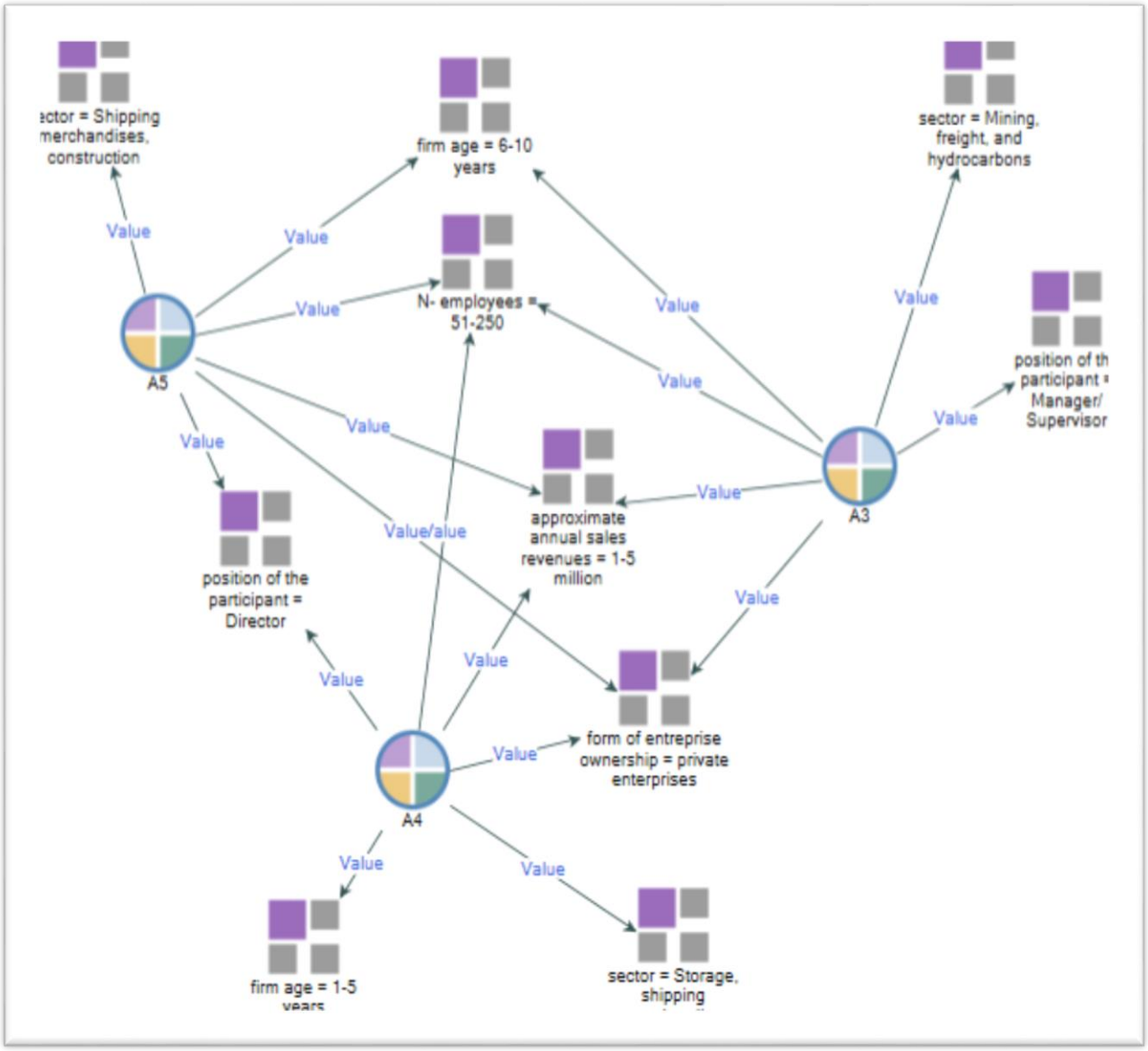

Figure 7: demonstrates the relationships between Participant A3, A4, and A5 (source: Researchers analysis)

Figure 8: The figure shows the demographic relationships between participant A6 and A7, we observe that A6 and A7 have the same form of enterprise, their number of employees is above 250,

their firm age is between 6-10 years, and their approximatively sales revenues is between 1-5 million ($).

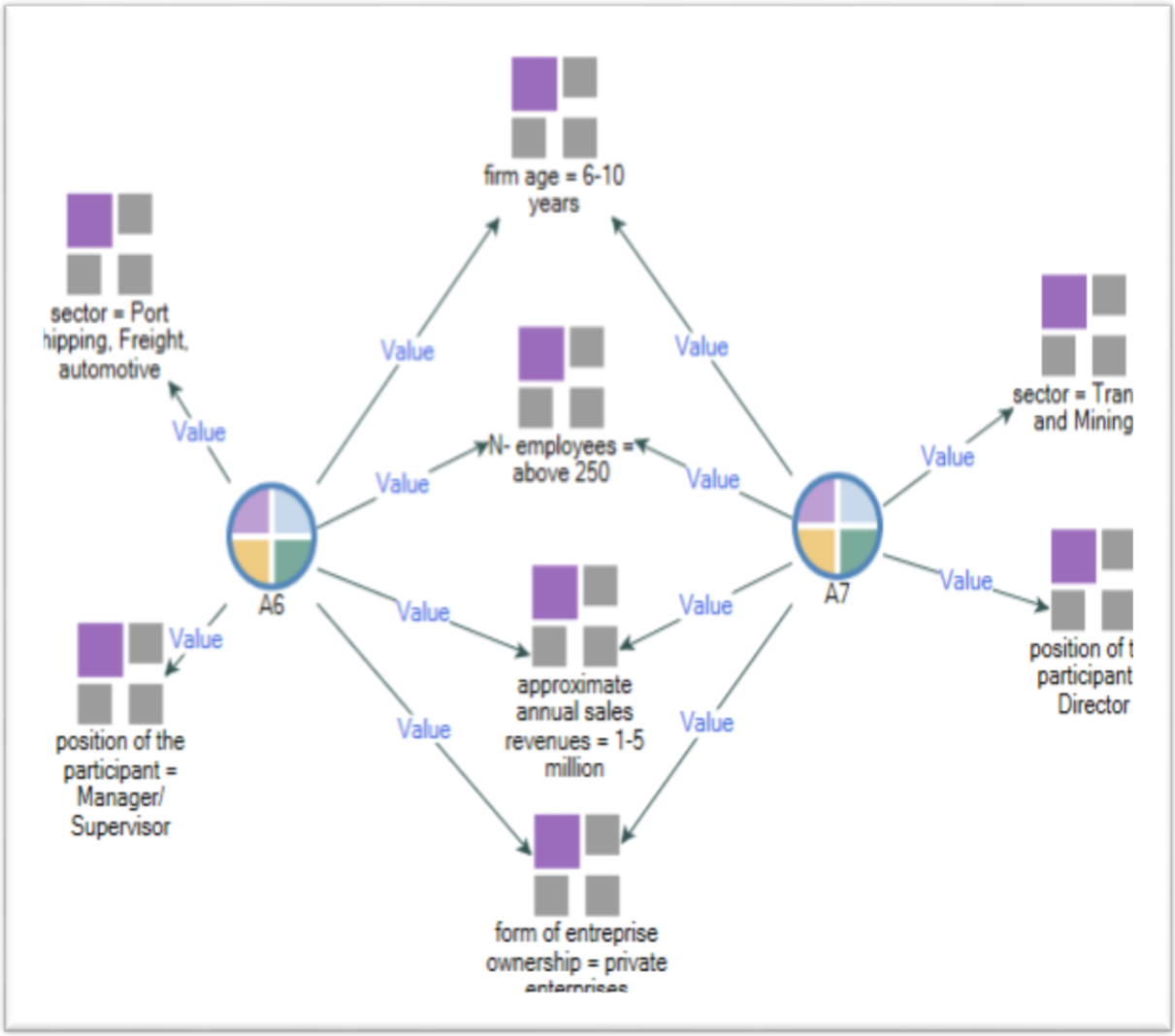

Figure 8: demonstrates the relationships between Participant A6 and A7 (source: Researchers analysis)

Figure 9: The figure shows the demographic relationships between participants A8, A9, and A10, we observe that A8, A9 and A10 number of employees is between 51-250. Also, A8 and A9 have a firm age between 1-5 years and the same form of enterprise. A9 and A10 also have a common position in their company.

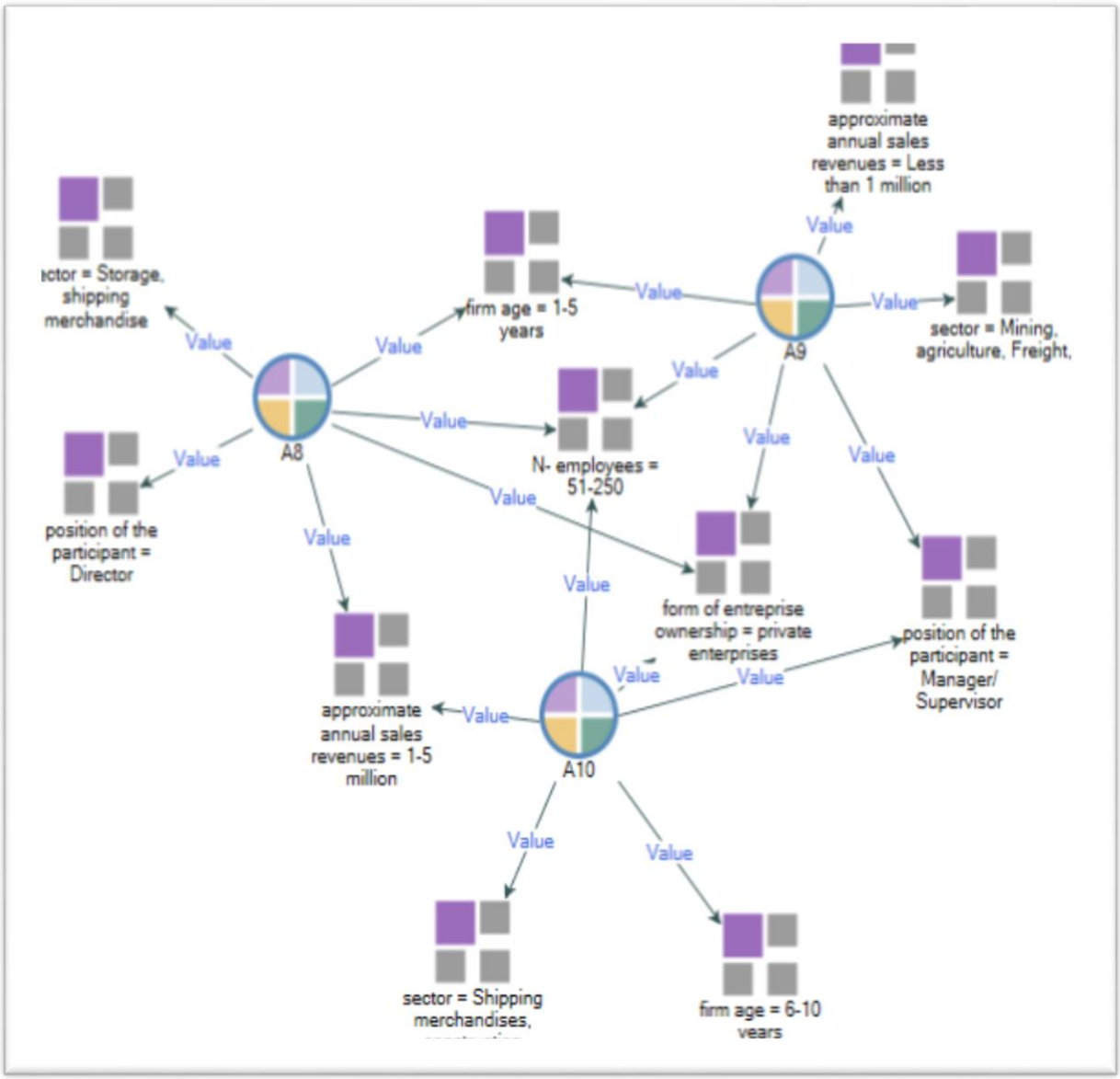

Figure 9: demonstrates the relationships between Participant A8, A9, and A10 (source: Researchers analysis)

Figure 10: The figure shows the demographic relationships between participant A11, A12, and A13, we observe that A11 and A12 have the same form of enterprise, A11 and A13 have approximatively annual sales revenues between 1-5 million ($) and A12 and A13 have the same position in their company also their company have a firm age between 1-5 years.

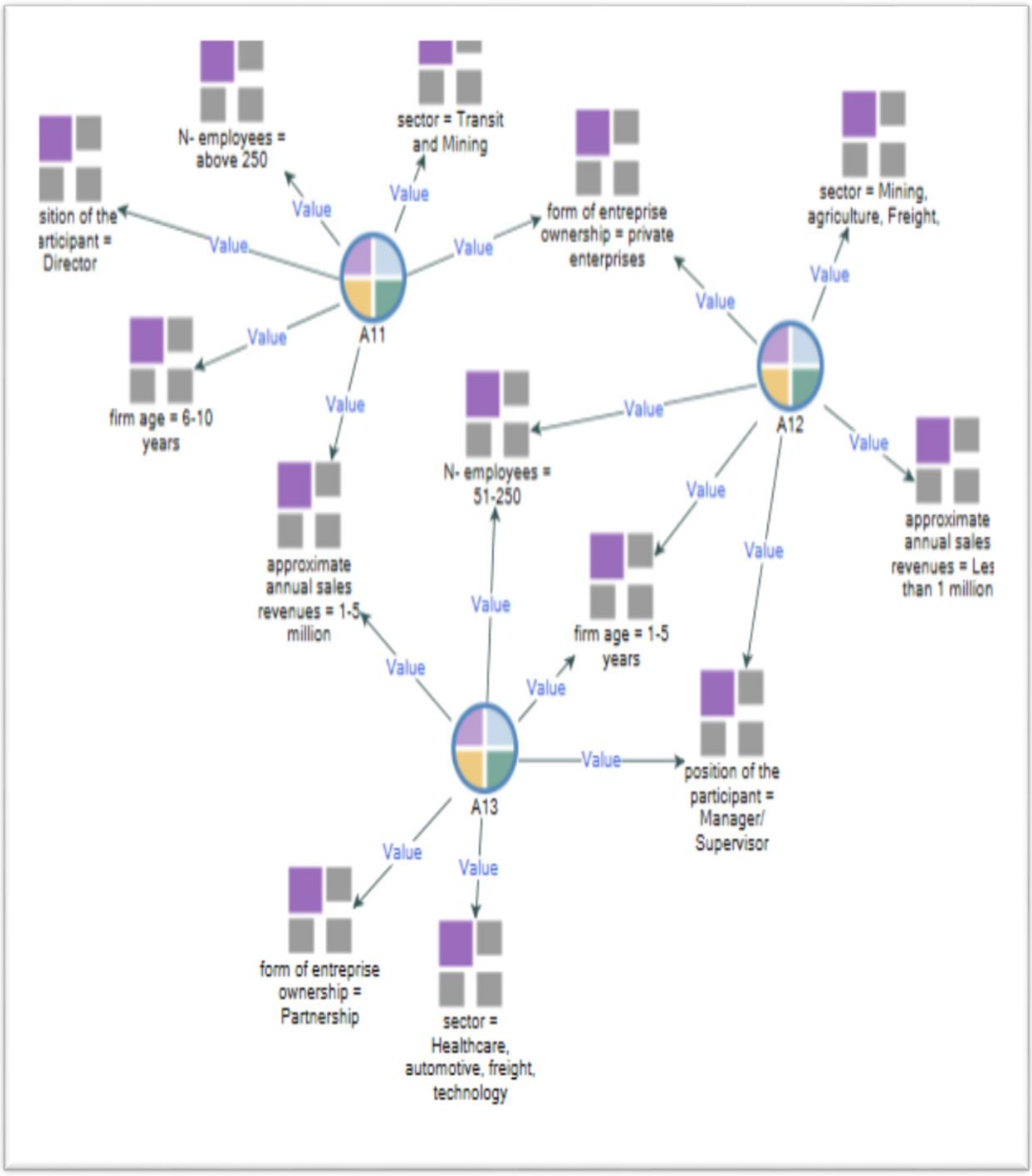

Figure 10: demonstrates the relationships between Participant A11, A12, and A13 (source: Researchers analysis)

3.4.1. Word frequency

Table 2 and figure 11 shows the frequency, in our case the researcher use Nvivo words to calculate the most highest frequent words of five or more letters, words used were considered that represents the viewpoint of the interviewer. According to this approach, the suspicion that critical and significant words are frequently used (Carley, 1993). Also, word frequency has been cited for its advantages and importance such as, maintaining analytic integrity, verifying a hypothesis, or identifying patterns more easily (Jackson & Trochim, 2002). Researchers support that analysing word frequency decreases their bias regarding overweighting and improves analytic rigor (Halpern, 1984; Lincoln, & Guba, 1985; Onwuegbuzie, & Leech, 2007; Sandelowski, 2001).

To analyze the word frequency, in our study the researchers used NVivo's 12, the query word frequency. Open answers to each question were carried out by the request of word frequency. The most frequent word, with a weighted percentage of 9.24% "Affect", and the less occurring word, with a weighted percentage of 0.22% "Inventory" such word, filled in as hubs or coded words in Nvivo. A weighted complete percent of the substance was accommodated each question, which mirrors the words that were profoundly delegate expressions of participants responses. Figure 1 also shows that the word frequency is important more the word size is bigger also more the word frequency is less more the size is small.

Figure 11: word frequency (source: researcher's analysis)

3.4.2. Themes finding

Table 3: word frequency by weighted percentage

Word	Length	Count	Weighted Percentage (%)
Affect	6	128	9.24
Positive	8	62	4.47
Positively	10	52	3.75
Customers	9	50	3.61
Interaction	11	50	3.61
Negative	8	50	3.61
Information	11	44	3.17
Increase	8	43	3.10
Negatively	10	41	2.96
Poor	4	39	2.81
Sharing	7	39	2.81
Capital	7	35	2.53
Reduce	6	33	2.38
Needs	5	30	2.16
Infrastructure	14	28	2.02
Technology	9	28	2.02
Company	7	27	1.95
Communication	13	26	1.88
Delivery	8	26	1.88
Time	4	26	1.88
Neutral	7	25	1.80
Transaction	11	24	1.73
Companies	9	23	1.66

Issues	6	20	1.44
Access	6	19	1.37
Access	5	16	1.15
Infrastructure	14	16	1.15
Annual	6	13	0.94
Companies	9	13	0.94
Cost	4	13	0.94
Customer	8	13	0.94
Daily	5	13	0.94
Delay	5	13	0.94
Deliver	7	13	0.94
Expenses	8	13	0.94
Facilitates	9	13	0.94
Facilitates	11	13	0.94
Flexible	8	13	0.94
Operation	9	13	0.94
Performance	11	13	0.94
Productivity	12	13	0.94
Response	8	13	0.94
Revenues	8	13	0.94
Terms	5	13	0.94
Transportation	14	13	0.94
Trust	5	13	0.94
Analytics	9	10	0.72
Chain	5	10	0.72
Supply	6	10	0.72
Always	6	9	0.65
Faster	6	9	0.65

Strong	6	8	0.58
System	6	8	0.58
Decrease	8	7	0.51
Income	6	7	0.51
Technology	10	7	0.51
Internally	10	6	0.43
Materials	9	5	0.36
Raw	3	5	0.36
Stock	5	5	0.36
Average	7	4	0.29
Inventory	9	3	0.22

Table 4: findings contents

Findings of themes	categories	interviewers support
Access to capital delay operation	Negative affect on the daily operation	13
Access to capital affect Performance	Negative effect on performance	6
	No effect on performance	7
Access to capital affect the annual revenues	Negative effect on revenues	7
	Positive effect on revenues	5
Information shared with our customer's	Positive effect on information sharing to customers	13
Information sharing increase service	Information sharing increase positively	13
Information sharing with other SC companies	Positively effect on information sharing with others	13
Infrastructure Affect the transportation cost	Negative effect on transport cost	13
Infrastructure Increase the expenses In terms of delivery	Negatively affect in terms of expenses	13
Infrastructure Reduce the stock out Of raw materials	Negative affect on the stock out of raw materials	2
	Neutral opinion on stock out	8
	No effect on the stock out of raw materials	3
Infrastructure Reduced the delivery time	Negatively, poor infrastructure reduces the delivery time	13
Shorter response and delivery time to the customer	Average delivery time	4
	Positive effect on delivery time	9
Supply chain analytics affect internal communication	Neutral opinion on internal communication	3
	Positive effect on internally	10
Supply chain analytics monitors inventory and purchasing situation	Neutral opinion on the inventory	10
	Positive affect on the inventory system	3
Technology needs for transaction or interaction with customer's	Negative effect on technology need with customers	7
	Neutral opinion on technology needs with customers	2
	Positive effect on technology needs with customers	4
Technology affects the needs internally	Negative effect on technology internally	6
	Neutral opinion on technology needs internally	2
	Positive effect on technology needs internally	5
Technology needs for transaction	Negative effect on technology need with others	9

or interaction with other SC	Positive effect on technology needs with others	4
Trust impact Flexible interaction With the customer	Positive impact, on flexible interaction	13
Trust impact internal access convenience for the customer	Positive effect on access convenience	13

4. Discussion

Table 3 try to explain how participants give their opinion according to the questions and their company's situation.

Q1: How Access to capital delay daily operation

In this question, all the 13 participants' support that, access to capital is a really big challenge due to several reasons such as access to funds issues, technical problems, and relationships.

A1: Participant A1 argues that *"in African countries having capital is not an easy thing for everyone, here in Guinea even if you have your own money at the bank, making transactions can take days or even weeks. The reasons they tell us is not having enough money to carry out such transactions due to the lack of cash at hand at that time and also sometimes they say that they have a problem with their system. Due to all these problems, it delays our activities".*

A5: Participant A5 argues that *"capital access in this country is more of who knows you because banks are very redundant to give loans to businesses and also to companies, so this affects the running of our day to day activities because at times u need some loans to inject into the company to make finance some business operation. Unfortunately, financial institutions delay always our requests. The reasons they always give us that they have internet issues or shortage"*.

A7: Participant A7 argue that too, *"in guinea, receiving money from a financial institution is a big challenge even if you want to withdraw your own money. The reasons they give us always is they have a shortage of cash; all these problems affect our operations and affect the entire chain"*.

Also, the rest of the participants give the same reasons for how access to capital delay their operations.

Q2: How Access to capital affect Performance

In this question, 6 participants confirm that difficulties to have access to capital affect negatively their company performance.

A3: participant A3 argues that *"capital accessibility is a major problem here and affecting businesses here. The government only helps companies that have affiliation with their political party, but not on merit, and that brings about unfair competition in the business environment. This affects the performance of the business and when the equipment is not well-maintained due to lack of cash will result in capital losses and extra cost of repairs when it breaks down and depreciating on a faster rate".*

A7: participant A7 also argues that *"loan facilities for expansion of business and support from financial institutions make the performance very slow sometimes and reduce our income"*.

The rest of the 4 participants give the same reasons how access to capital difficulties affect their companies' performance.

Also, in this question, 7 participants confirm that difficulties to have access to capital doesn't affect their companies' performance.

A13: participant A13 argues that *"our performance does not decrease, but rather it increases by that with each obstacle we become more and more strong and place in a better position ourselves".*

A8: participant A8 also confirms that *"our performance does not decrease but rather its increases by that with each obstacle we become stronger and better position ourselves vis-a-vis our competitors".*

The rest of the participants give approximatively the same reasons for how access to capital difficulties doesn't affect their companies' performance.

Q3: how Access to capital affect the annual revenues

In this question, 7 of the 13 participants confirm that difficulties to have access to capital affect negatively their annual revenues and the others participant argue that difficulties to have access to capital doesn't reduce their annual revenues.

A7: participant A7 argues that *"the reasons why our revenues reduce is due to the high-interest rate charged on loans from banks and this increase of our expenditure and also challengers form lack of infrastructure and political instability reduce our profit sometimes".*

A1: participant A1 also argues that *"once our activities are disrupted throughout the year our annual revenue will be reduced. In general, businesses have good times and bad times".*

According to, participant A6, A5, A13... Difficulties to have access to capital do not affect their annuals revenues.

A6: participant A6 argues that *"despite the disruption of our activities throughout the year, our annual revenue increases every year. However, the only thing that affects our activities is the political crisis that the country is going through but the other problems of the financial institutions or infrastructure we are getting used to that".*

Participant A5, A13, give approximatively the same answers.

Q4: how sharing information with our customers impact our company

All 13 participants agree that information sharing with customers is the key to success for most organizations around the globe.

A3: participant A3 argues that *"customers can now call anytime to get any information they need and transact business even on the phone all thanks to technology".*

A9: participant A9 argues that *"information is the key to all businesses in the world, in our case we communicate most face to face with customers or direct call. The reasons for that most of our customers do not use modern technology and communicate with them physically increase the trust between us".*

The rest of the participants approximatively give the same answer.

Q5: How information sharing increase service

All 13 participants agree that information sharing increases their organization's service.

A4: participant A4 confirms that *"sharing information will increase the productivity and performance of the company, so that good information between a client and our company will allow us to better prepare and better meet customer requirements because with us customers are still King".*

A7: participant A7 argues that *"sharing information increases productivity and service because the workers know what to do and when to do at the right time, our services are better than all our competitors".*

A12: participant A12 confirm that too, *"sharing information will increase our services and performance because good information between a client and company increase always performance. In our company, sharing information is our leading strategy to improve our service to customers".*

A9: participant A9 confirms that *"sharing information will increase our services and performance because good information between a client and company increase always performance. In our company, sharing information is our leading strategy to improve our service to customers".*

A3: participant A3 argues that *"information sharing increases our services and productivity because all the staff has the same information they need at the same time".*

The rest of the participants give approximatively the same responses.

Q6: How sharing information with other SC companies

All 13 participants agree that information sharing with other supply chain companies have a positive effect on their businesses.

A9: participant A9 confirms that *"sharing information between our partners is making our activities simpler and more efficient".*

A1: participant A1 argues that *"sharing information between our partners is one of our successes and it increases the performance of the company".*

A10: participant A10 too argues that *"information sharing is very important between companies. Also, will lead to keeping records of what each company needs at one point in time and to build a cardinal relationship".*

A12: participant A12 argues that *"sharing information between our partners is making our activities simpler and more efficient".*

A6: participant A6 confirms that *"information sharing is very important between both companies and will lead to keeping records of what each company needs at one point in time and to build a strong relationship".*

The rest of the participants give approximatively the same responses.

Q7: how infrastructure Affect the transportation cost

In this question, all the 13 participants agree that infrastructure has a huge negative effect on transportation costs such as fewer asphalt roods, less bridge, traffic conjunction, very poor rood network….

A2: participant A2 argues that *"infrastructure challenges affect the cost of transportation and this cost transferred to the customer making the cost of various products and services a little expensive. When infrastructure is very poor the supply chain connection breaks, the transportation cost increases".*

A4: participant A4 confirms that *"of course, the delay from a place of the storage and the traffic connection or even the poor roods networks affect all our activities. All these issues increase our transportation costs".*

A9: participant A9 argues that "the issues of fewer asphalt roads in the capital affect our operation sometimes and increase our fuel and maintenance costs".

A11: participant A11 also confirms that *"infrastructure challenges affect the cost of transportation and this cost is transferred to the customer making the cost of several of our goods and services a little expensive".*

A13: participant A13 confirms that *"the delay due to the poor condition of our roads greatly affects our transportation costs".*

The rest of the participants give approximatively the same responses.

Q8: how infrastructure Increase the expenses in terms of delivery

Again, in these questions, all the participant agree that infrastructure issues increase the expenses in terms of delivery

A13: participant A13 said, *"The problem of infrastructure still affects the entire supply chain, for its expense linked to the cost of transport and repair of our machines will always increase".*

A2: participant A2 also confirms that *"challenges imposed by poor infrastructure result in incurring additional expenses that normally it could be eradicated, like paying extra for transportation because of the poor road network and also the high maintenance cost of trucks used in transporting goods because of the poor road network".*

A9: participant A9 argues that *"the problem of infrastructure still affects the entire supply chain, for its expense linked to the cost of transport and repair of our machines will always increase".*

A5: participant A5 argues that too*, "in general, these issues make all our expenses increase particular when delivering to customers. Our company recently spend more on the delivery department by buying new trucks and hire new drivers to deliver in the night".*

A8: participant A8 also confirms that *"infrastructure challenges we have in our country affects the whole chain. Therefore, transportation costs increase".*

The rest of the participants give approximatively the same responses.

Q9: how infrastructure Reduce the stock out of raw materials

In this question, 2 of the participants confirm that infrastructure issues harm the stock of raw materials, 8 participants have a neutral opinion and the rest of the participants confirm that infrastructure issues don't affect the stock of raw materials.

Participants A3 and A10 confirm that infrastructure issues harm the stock of raw materials

A3: participant A3 argues that *"infrastructure is a big problem is the aspect of raw materials because we take our materials from the rural area and the roads there are very bad to the extent that we at times take more days before we receive the raw materials. Also, in the hydrocarbons sector, we already have the same issues".*

A4: participant A10 confirms that *"infrastructure is a big problem is the aspect of raw materials because we take our materials from the rural area and the roads there are very bad to the extent that we at times take more days before we receive the raw materials".*

Participants A2, A9, and A13 confirm that infrastructure issues do not affect the stock of raw materials

A13: participant A2 argues that *"we do not reduce our stocks; we try to respond as best as possible to the different requests from customers for better service".*

A9: participant A9 confirms that *"we do not reduce our stocks; we try to respond as best as possible to the different requests from customers for better service".*

The rest of the participants have a neutral opinion about the question.

A5: participant A5 has a neutral opinion in the question but he argues that *"we are not using raw material in the company we deliver direct the final product to our customer, but our warehouse is well managed to prevent inventory shortage or excess inventory".*

A11: participant A11 has a neutral opinion in the question but he argues that *"in our companies, we do not have a storage issue, because most of our business is in the mining sector and for that, we use the railway for transportation to the port".*

A4: participant A4 has a neutral opinion in the question but he argues that *"our activities generally concern shipping and storage".*

Q10: how infrastructure reduced the delivery time

In this question, all 13 participants confirm that the lack of infrastructure issues in the country has a serious negative effect on the delivery time of their products due to, the poor roods network, lack of electricity, and bridge….

A2: participant A2 argues that *"Delivery time is very important to keep business and customers both happy. Customers want goods on time so the infrastructure, which is below belt makes delivering from business to customers take a longer time due to poor road networks".*

A4: participant A4 argues that *"as we know in our country, infrastructures have a huge impact on almost all of the country's economic activities in all sectors. In our case, the problem of infrastructure we face is at the port. Our port has few storage places for containers".*

A9: participant A9 argues that *"in our case, the infrastructure has a little impact on our activities most of our activities are the freight and most of our customers are in the regions of Conakry. The frequent issue we face is the traffic situation and the fewer asphalt roads in some areas".*

A11: participant A11 argues that *"in every business in the world, delivery time is very important to keep business and customers both happy. Customers want goods on time so the infrastructure, which is below belt making a delivery from business to customers delayed because of poor road networks in our country".*

A13: participant A13 argues that *"in our case, the problem of infrastructure, particularly the roads and electricity negatively affect our activities and delays our delivery times a lot, most of our customers complain about that. But we have no choice, recently we just increase the delivery times by making some of our drivers to work at night time. The electricity issues in this country increase our expenses by buying fuel and maintaining the plant".*

A3: participant A3 argues that *"delivery time not reduced but extended because when someone places an order and the company is to deliver the product, it comes with a lot of hustle to even move the produce even from the company to the recipient because of poor roads and even poor naming of house and street, also in the time is difficult for our drivers to deliver a product in other regions because of no street light and no access to electricity in many regions".*

The rest of the participants give approximatively the same responses.

Q11: how shorter your response and delivery time to the customer

In this question 9 of the participant confirm that they have a faster response and delivery time to their customer and the rest of the participants confirm also that they have an average response and delivery time to their customer.

A2: participant A2 argues that *"many customers want a product as soon as an order made and packaging sending it to a specific location takes a longer period, but in our companies, I can say that the response and delivery are very fast".*

A3: participant A3 confirms that *"we try our possible best to respond to the customer as fast as we can and deliver as fast as we can, to gain customer trust and make them loyal to our company".*

A11: participant A11 argues that too, *"yes, the response is fast, because most of our business is in the mining sector and there, we always use the railway and ship to transport".*

Participant A1, A6, A7, A10, A12, A13 also give approximatively the same response.

Also, participant A4, A5, A8, A9 confirm that they have the average response and delivery time to their customer.

A4: participant A4 argues that *"in general, the answer is quick just sometimes our delivery is delayed".*

A5: participant A5 argues that *"the response to our customer is fast, the only problem we face to is the one I told you at the start, the road issues. Also, the control of the police who are corrupted, by asking our drivers for money, its delay in delivery times. However, most of our deliveries are fast and on time".*

Q12: how Supply chain analytics affect internal communication

In this question, 10 of the participants agree that supply chain analytics have a positive effect on internal communication, and the rest of the participants a neutral in this question.

A1: participant A1 argues that *"recently we are using a Platform to better increase the interaction between us and facilitate our activities with our customers and partners".*
A3: participant A3 argues that *"internal communication is very good, in our company, we promote communication between us, and this led to a good relationship and is increased productivity".*

A5: participant A5 argues that *"internal communication is very good and here in our company, we promote communication between supervisor and subordinate, and this led to a good relationship and increased productivity. In our company recently, we adopt modern technology tools in all our offices in the country and a very strong platform for easy interaction between branches".*

Participant A9, A12, and A13 are neutral in this question.

Q13: how Supply chain analytics monitors inventory and purchasing situation

In this question, 3 of the participants confirm that their inventory system is very strong and the rest of the participants are neutral.

A3: participant A3 argues that *"our inventory system is strong and helps us to have full control of all our activities".*

A5: participant A5 confirms that too, *"my company inventory is strong and helps us to have full control of all our activities".*

A10: participant A10 argues that *"keeping a lot of inventory is locking up capital that is money that can be used to do other business is all locked up in inventory which is not needed at the point in time and also a shortage of inventory could lead to customers shift to new producers so always inventory levels need to be well checked, our inventory is really strong and helps us to have full control to all our activities".*

The rest of the participants neutral in this question.

Q14: how technology needs for transaction or interaction with customers impact your activities

In this question, 7 of the participants support that, the lack of technology harm businesses, 4 of the participant's support that, the lack of technology does not affect their businesses and the rest of the participants are neutral in this question.

A1: participant A1 support that, *"technology is one of our big problems in our activities, communicates with customers or even with colleagues are sometimes very difficult even impossible due to the no internet or network problems in certain regions of the country.*

A2: participant A2 argues that *"the availability of technology makes communication possible in supply chain management, there is a big barren affecting communication because of the unavailability of connections in some part of the country making it difficult to communicate with some customers".*

A4: participant A4 support that*, "technology is one of our big problems in our face, communication with customers or even with colleagues are sometimes very difficult even impossible due to poor internet connection or network problems in certain regions of the country, yes, of course, these issues have the impact of the work in certain areas such as deliveries out of the capital city".*

A7: participant A7 confirm that *"technology is one of our big problems in our different activities, communicates with customers or even with colleagues are sometimes very difficult even impossible*

due to the internet or network problems in certain regions of the country, these issues have the impact of the work in certain areas such as deliveries sector".

A8: participant A8 argues that *"communicates with customers or even with colleagues are sometimes very difficult even impossible due to the internet or network problems in certain regions of the country, yes, of course, these issues have the impact of the work in certain areas such as deliveries out of the capital city".*

Participant A11 and A13 confirm the same response.

Also, participant A3, A5, A6, A10 confirm that the lack of technology does not affect their businesses.

A3: participant A3 argues that *"communication with the customer is easy nowadays because of telephone availability and interaction with customers is smoother than before because any customer can call anytime and any day to make inquiries of a product or service".*

Participant A9 and A12 a completely neutral

Q15: Technology affect the needs internally

In this question, 5 of the participant's support that, their company has a strong technology system internally, 6 of the participants confirm that the lack of internal technology harms their activities, and the rest of the participants a neutral on the question.

A2: participant A2 argues that *"internally sharing information is better, the company has a strong information system.*

A3: participant A3 argues that too, *"internal messages are usually sent through emails to the various departmental heads to communicate to their staff mainly through E-mails and phone calls".*

Participant A5, A6, and A10 give approximatively the same answer.

A1: participant A1 confirms that *"internally, as I told you earlier, the problem of the internet and networks in certain regions is always poor, and for this is the reason our business affected, most of our clients are outside Conakry".*

A4: participant A4 also confirms that "internally, as I told you earlier, the problem of the internet and networks in certain regions affects our business in some regions".

The rest of the participants are completely neutral in the question.

Q16: how technology needs to impact the transaction or interaction with other SC companies

In this question, 9 of the participants give a negative opinion about their companies' interaction with SC companies and the rest of the participants confirm that the lack of technology does not affect their interaction with other SC companies.

A1: participant A1 argues that *"communication and certain transactions between some of our partners are often affecting not only the technology but sometimes in financial institutions due to delays in transfers or certain financial transactions".*

A4: participant A4 confirms that *"communication and certain transactions between some of our partners are often affected not only technology but sometimes in financial institutions due to delays in transfers or certain financial transactions".*

A13: participant A13 argues that *"the communication and certain transaction between some of our partners are affected by the disruption of the network, by the lack of electricity and certain financial problems".*

Participant A7, A8, A9, A10, A11, A12 give approximatively the same response

Also, participant A2, A3, A5, and A6 participants confirm that the lack of technology does not affect their interaction with other SC companies.

A2: participant A2 argues that *"information sharing between customers and business is very important to maintain a relationship and to interact and share information, but in our case interacting with the customer directly or by internet is very difficult the reasons for that it, it is the poor internet connection and few of our customer use the modern technology to communicate or interact with us".*

A3: participant A3 confirms that *"interaction between companies in a supply chain or even companies we deal in the same sector is now very effective because of technology and we transact even on the phone without going there in person, making business more quickly".*

A5: participant A5 confirms that *"interaction between companies in a supply chain or even companies we deal in the same sector is now very effective because of technology and we transact businesses even on the phone without going there in person, making business transactions faster".*

Q17: how to trust impact interaction with the customer

In this question, all the participants give a positive response.

A1: participant A1 said that *"the communication is flexible between us we have a special office for any criticism or recommendation that the customers wish".*

A2: participant A2 said that *"the more you deliver the best goods the more confident the customer-built confidence and trust. We have good interaction with our customers".*

A10: participant A10 argues that *"when a customer fully trusts the company and its product interactions are very easy and business can even go on without seeing the product and all this bow down to trust. In our case, we have good interaction with our customers".*

A13: participant A13 argues that "communication between us is flexible. Most of the time we discuss together possible improvements due to the various issues linked to the delivery".

The rest of the participant gives the same answer

Q18: Trust impact internal access convenience for the customer

In this question, all the 13 participants confirm that their customers have access to their locals and have absolute trust between them.

A2: participant A2 opinion, *"customers do not trust and would like to be there to inspect our operations to have good satisfaction especially if they are new customers. However, most of our old customers have trust in us".*

A5: Participants confirm that *"where trust is a hard thing to get from a customer, so customers are more convenient when they come to see the product and test it before any further discussion goes on. We have a strong trust between us".*

A7: participant A7 confirms that *"trust is the key to success for any organization; I can say that there is absolute trust between us and our customers. Because our doors are, open to everyone and we have great interaction between our customers".*

All the rest give approximatively the same response.

CHAPTER 5

5. Some approaches to deal with these challenges faced by Guinea supply chain management

This chapter is to provide approaches to address these challenges by Guinea SC such as analysis of the offer, trust and information sharing, orientation marketing. Moreover, the limits of the study and the overall conclusion of the study.

5.1. Supply chain analytics

In view of the above definition and conversation, we referenced that SC for items is the network of companies and facilities involved in the operation process of transformation of raw materials in a product and the product distribution to last customers (Ellram, & Cooperr, 1993). Also, in SC there are three streams of information such as physical and financial between different companies. The analysis of the supply chain (SCA) generally focus on the use of information and analytical tools to facilitate and make better decisions regarding the flow of materials in SC (Souza, 2014). In addition, SCA relation on analytical approaches is to make better decisions match demand and supply, well planned and implemented that can contribute directly to the main line by reducing supply transportation, storage and disposal costs. SCA has become more entrenched in decision making with the advent of enterprise resource planning (ERP) systems in the 1990s and, more recently, with big data applications, particularly in the descriptive analysis and predictive (Souza et al. 2014).

The Reference Supply Chain Operations (SCOR) model developed by the Supply Chain Council “www.supply-chain.org” provides a good framework for classifying analytics applications in the management of the supply chain.

The SCOR model mentioned four areas of activity SC: source, make, deliver and return. The fifth area of the SCOR model is the plan we know is the level behind the kiln industries. Also, a key part of the SC's planning process is to forecast demand at all times: long, medium and short-term horizons with the calendar of the days, months and years, respectively. Table 5 illustrates different decisions in all four SCOR areas that can be helped by analysis thesis decisions are classified as strategic, tactical and operational after calendar (Souza et al. 2014).

Table 5. SCOR model and examples of decisions at the three levels

SCOR areas	Source	Make	Deliver	Return
Activities	Receive materials and order	Remanufacture Schedule and manufacture, repair,	Receive, plan, pick, pack, and boat orders	Solicitation, endorse, and decide the removal of items and resources
Vital (time period: a long time)	Key sourcing Supply chain planning	sector of plants Product line blend at plants	Location of distribution centres Fleet planning	Area of bring focuses back
Strategic (time span: months)	Strategic sourcing Supply chain contracts	Product offering legitimization Sales and activities arranging	Transportation and circulation arranging Inventory approaches at areas	Turn around dispersion plan
Operational (time frame: days)	Materials necessity arranging and stock recharging orders	Labor force booking Manufacturing, request following, and planning	Vehicle directing (for deliveries)	Vehicle routing (for returns collection)
Plan	Demand forecasting (long term, midterm, and short term)			

In summary supply analytics refers to the improvement in operational viability and productivity by empowering information decisions at strategic, operational, and tactical levels. Also, it encompasses virtually the complete value chain: sourcing, manufacturing, distribution, and logistics.

5.2. Trust

According to Mentzer, Naslund, and Williamson (2010), definition supply chain management SCM "is the strategic management of commercial functions and the flow of products, equipment,

information and money in a particular company and across all activities of the SC to improve and increase the long term performance of the SC in general". Also, (Frohlich et al., 2007), said that the integration of the IBS supply chain is the key to increase performance and create value in SCM. SCI includes economical actions such as system information sharing, alignment, joint and continuous investment in social relations between organizations between exchange partners (Zhao et al., 2008). Based on different theories such as social capital theory[3] (Krause et al., 2007), resource dependency theory [4](Crook and Combs, 2007), and transaction cost theory [5](Wang et al., 2011).

Past investigations have shown that the social capital and resources, like force, trust, obligation to the relationship and reliance, assume a significant part in accomplishing the targets of SC and competitive advantages in business. Significant level reliance might lead to opportunistic and vulnerabilities practices among accomplices and can cause clashes that contrarily influence generally coordinated effort and execution (Corsten and Felde, 2007). To make support reliance among accomplices, the organization needs to create social capital through socialization measures (Petersen et al., 2008).

According to Geyskens et al., (1998) to the degree to which an organizations accepts that its trade accomplices are straightforward. It also, reflects the confidence and the willingness to trust other parties (Moorman et al., 1993). As a significant form of social capital, trust is vital for mitigating currency risks and engendering cooperation between SC partners as it decrease the uncertainty of equity and opportunistic partners (Yeung et al., 2011). The trust and dependence exist simultaneously in the integration and SC relationships of the influence of different ways (Ireland, Krause et al., 2007). Likewise, comprehension of joint and free impacts of trust and reliance SCI could help clinicians viably, set up and successfully deal with their social ties (Laaksonen et al., 2008). In short, trust is a relationship in which one party, known as a trustor, gives another party, the trustee, the option to hold title to property or resources to serve an outsider the benefiary this process increases the company outcomes and efficiency.

5.3. Information sharing

The sharing of information provides links closer to SC partners based on information make a common way to effectively manage SC seeking increasing performance through the effective use of capabilities and resources (Koçoğlu & Keskin, 2011). With the implementation of internal and external links aligned with the objectives compatibly across the system, arm's length organizations move to an integrated continuum of possible relationships, creating a perfectly coordinated SC which is a potential source leadership advantage. Information sharing contributes significantly to reducing costs in the supply chain, improved partner relationships, increasing the material flow, allowing quick delivery, execution of the improvement in the rate of orders contributing to customer satisfaction, improved coordination channels, and facilitate the achievement of leadership advantage.

Numerous specialists concur that the sharing of data is key SC and productive by speeding the progression of data, lessening the reaction time to client needs, giving better coordination and cooperation, and sharing dangers just as advantages. Additionally, focuses dependent on assets on explicit social assets traded through the store network networks that are essential to improve data sharing and improving production network accomplices (SCP). However, although recent studies have accentuated the significance of related data sharing for associations with regards to SC, very few studies have investigated the specific impact of information sharing on SCP (Koçoğlu et al., 2011). Moreover, even if researchers focus on the actors strengthening information sharing within SC networks, limited attention has been paid to the role of SCI as shared history information.

The speed increase of the trend of new technology forcing supply chains to be agile, adaptable, and aligned to meet the needs of cooperative partnerships, mutually beneficial supply chain in the value chain, leading companies to refocus on the formation of a tighter and deeper relationship. Companies are required to manage their internal processes and activities with their neighbouring partners spanning for better business performance (Koçoğlu et al., 2011). To summarize, the information describes the exchange of data between various companies, people, and technologies to improve their collaboration and routine operation in the business world.

6. Conclusion and Future Research Suggestions

6.1. Conclusion

The impact of the entire globe logistics and strategy of the SC has started serious discussion in both industry and the academia world area. Be that as it may, the significance of exchange logistics infrastructure as a precondition for a simpler and better flow of goods and services in the twenty-first century Africa has gotten little consideration (Macmillan, 2018). Business and experts specialists on Africa agree that Africa's economies create as the continent arises as an essential exchanging coalition with developing riches and populace focused on cities. However, there is a developing worry that lacking logistics infrastructure transport, like roads and rail, air and seaports, just as insufficient current innovations present troublesome difficulties to trade in Africa and among Africa countries and the rest of the world (Macmillan, 2018).

This study found and identify the different supply chain challenges facing managers and firms in the supply chain system in West Africa with more attention in Guinea. Also, the study develop several challenges to logistics activities such as, poor road quality, political conflicts, insufficient and ineffective regional collaborations, inadequate rail capacity, insecurity of life and property, Corruption, bureaucracy challenges, poor decision-making processes, low level of technology, and social issues (Adewole, 2019).

The analysis of the study has shown that the majority of the interviewees affirmed or confirmed that their greatest difficulty in the delivery or they delay of the delivery is linked to the poor state of the infrastructures in the country. Other significant barriers identified by Nollet et al., (1994) the magnitude problems faced supply chain in Africa is the lack of hard currency and qualified staffs, the key role of finance and accounting, the low credibility of the offer, breakdowns of contracts, long delays, moral values, and high cost combine to produce frustration and a set of complex challenges. These components have established the exchange limitations to merchants and exporters from Africa.

6. 2. Limitations and Future Research suggestions

Several limitations exist in the present study. Firstly, the research nature is exploratory analysis, so a methodological warning may occur for example delay, interruptions and different kinds of conduct may potentially affect the nature of reactions to questions. Second, we might want to specify that readers may say that the examination isn't thorough because of the absence of measurable information. Regarding qualities, some may contend that our example size is too small, however this isn't accurate. Past investigations show that in exploratory nature depended on the little example size going from 11 to 40 members (Abubakar et al., 2014). Third, the study focused on a small number of companies in the SC does not reflect all the problems in this area. Also, most of the companies involved in the studies are generally based in the coastal area so it does not reflect all of the other supply chain companies in the country.

Finally, the present study focused on only Guinean supply chain companies thus study results may vary if research is conducted in other countries. Future research can test the proposed research method in other country, which can provide empirical evidence of the various challenges in the supply chain and the problems the sector a facing.

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