

MYKOLAS ROMERIS UNIVERSITY
FACULTY OF PUBLIC GOVERNANCE AND BUSINESS
INSTITUTE OF BUSINESS AND ECONOMICS: LOGISTICS MANAGEMENT

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**THE ROLE OF EXPRESS DELIVERY SERVICES IN
CROSS BORDER E-COMMERCE IN AFRICA:
CASE OF THE CEMAC SUB REGION**

A Master's Thesis

Supervisor

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Study Program: Logistics Management - LVAvAmns20-1

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LIST OF ABBREVIATIONS

AEF: Afrique Equatoriale Française

AOF: Afrique Occidentale Française

BLUE: Best Linear Unbiased Estimator

CAMPOST: Cameroon Postal Services

CBEC: Cross-Border E-Commerce

CEN-SAD: Community of Sahel–Saharan States

CEP: Courier, Express and Parcel

COMESA: Common Market for Eastern and Southern Africa

CTS: Costs of Time Saving

EAC: East African Community

ECOWAS: Economic Community of West African States

EX: Express Delivery Adoption Level

GDP: Gross Domestic Product

GDP: Gross Domestic Product

IGAD: Intergovernmental Authority on Development

LCR: Logistic Cost Ratio

LTB: Lead-Time Benefit

MCA: Multiple Correspondent Analysis

OECD: Organization for Economic Co-operation and Development

OI: Order Incidence

OLS: Ordinary Least Squared

OS: Order Size

RP: Repurchase Ratio

SADC: Southern African Development Community

SME: Small and Medium-sized Enterprises

TAM: Technology Acceptance Model

VIF: Variance Inflation Factors

INTRODUCTION

Over the years, economists have known that international trade is one of the most important ways in which societies can increase their standard of living since the time of Adam Smith and David Ricardo, with their work on specialization and comparative advantage (Morales Meoqui, 2012). Succinctly, international trade plays an increasingly important role in global economics. One growing part of the international economy has been electronic commerce enhanced by express delivery services. International trade, which initially consisted mainly of the trade of goods, is now increasingly focusing on services. E-Commerce is transforming trade globally and growing four times faster than the world economy. In 2015, for example, Cross-border e-commerce market was estimated at US\$300 billion and worth around US\$900 billion by 2020: (Cross-border sales 2020). A sizeable share of e-commerce is cross border trade, estimated to an average of 16 percent among the six main markets: the United States, the United Kingdom, Germany, Brazil, China, and Australia (Hanna 2016). The link between improving the trade facilitation environment and positively affecting trade is now well researched.

Nowadays, technological development has made buying very easy and effective through the internet and logistics business. Within this context, the importance and significance of new technologies in the supply chain framework should be highlighted, and they should be seen as a group of organizations and processes a product goes through from the starting source to the final product delivered to the customer (Schoenfeldt, 2008). There is therefore an easier turnover of goods within the distribution (marketing) channel, easier communication between all the participants in the business logistics system and, finally, more efficient delivery, which is one of the key elements to the customer. (Schoenfeldt, 2008).

Consumers on their part see delivery as the most important part in supply chain. This is either so because they have no idea of what happens in the process or because they feel that what they want is to receive the item they paid for, since it represents the moment when the customer comes into contact with the desired product. This is the more reason why the internet has become the fastest not only in Africa but world at large.

E-commerce, being a new term to many has also become very challenging to define in clear terms. Kovač, Naletina & Kuvač (2014), refer to Panian's definition of e-commerce as "the process of buying, selling or trading of products, services or information via an available computer network, the Internet, which offers a great deduction in cost and time" (Panian, 2013). OECD has also attempted a definition of

ecommerce in both broad and narrow sense as buying or selling goods between business subjects, households, individuals, governments and other public or private organizations through the computer network and internet respectively (OECD, 2018).

Mazareanu E. (2020), propounded that the global courier, express and parcel market was expected to be worth over 330.4 billion euro by 2019. As the customer needs change with the economic evolution, the market responds to particular changes to create new opportunities. Mazareanu (2021). Mazareanu goes on to explain that the introduction of courier, express and parcel (CEP) services is an example of this development in the logistics and transportation industry, indicating that the CEP market provides traditional postal services faster and more reliable. The key element to this service is the time sensitivity of the packages, often next day service. The express shipping industry is now considered to be one of the fastest growing sectors in the global economy, a generous job provider and an important contributor to national Gross Domestic Product (GDP). The international express giants, FedEx Corp, United Parcel Service (UPS), Deutsche Post Group (DHL) are not limited to the local region, they have established branches or have joint venture partners in hundreds of countries around the world; express services are also continuing to expand with the growing market and becoming closer to consumers' demand.

Statement of the Problem: The usefulness of e-commerce to customers depends on how e-commerce simplifies and improves the effectiveness of their shopping. Reliability and speed of delivery are dominant factors, and we take express delivery as measure of the logistic competence perceived by customers. Just as e-commerce has been studied as a new technology in the technology acceptance model (Celik & Yilmaz, 2011), E-commerce equipped with express delivery services is viewed as the adoption of a new technology. The perceived logistic competence depends on customer characteristics like gross domestic product, on product characteristics such as price, weight, and volume, and on regional characteristics like lead-times and road transport costs. The logistic competence affects financial performance in terms of order size, order incidence, and repurchase rates. However it is still neglected by most E-shops in the African context.

Research Questions: The key research question in this study looks at the extent at which express delivery services enhance cross border E-commerce in Africa. Specifically the research questions are as follows.

- 1) To what extent does Logistic competence, in terms of express delivery affects financial performance in cross-border e-commerce in the CEMAC Sub Region?
- 2) To what extent does willingness to pay a mark-up cost for express delivery affect higher priced products in the CEMAC Sub Region?
- 3) To what extent does Lead-time benefits through express delivery services influence the consideration by cross-border customers in the CEMAC Sub Region?

Research Aim: The main aim of this research is to examine and evaluate the extent to which logistic competence, willingness to pay a mark-up cost, and lead-time benefits affect express delivery services and enhance cross-border E-commerce in Africa.

- ❖ To analyze the theoretical framework and concept of express delivery services in cross border e-commerce in the CEMAC Sub Region.
- ❖ To use a multiple correspondence analysis and the estimation technique through ordinary least squared.
- ❖ To analyze the results of survey on express delivery services in cross border e-commerce in the CEMAC Sub Region.

Hypotheses of the Research: This study will have 3 underlying hypotheses to guide the understanding on the relationship between express delivery services and cross border E-commerce in the CEMAC Sub Region.

- ❖ **H1.** Logistic competence, in terms of express delivery, positively affects financial performance in cross-border e-commerce in the CEMAC Sub Region.
- ❖ **H2.** The willingness to pay a mark-up cost for express delivery increases for higher priced products in the CEMAC Sub Region.
- ❖ **H3.** Lead-time benefits through express delivery services are an important consideration for cross border customers in the CEMAC Sub Region.

Scope of the Research: This research seeks to establish the relationship between express delivery services and cross border E-commerce in Africa. The specific context of interest will be the countries of

the CEMAC sub-region (Cameroon, Central African Republic (CAR), Chad, the Republic of Congo, Gabon, and Equatorial Guinea). The research will use Secondary data that will be collected from the National Institute of statistics of this sub region as well as World Bank Group statistics.

Research Significance: This study will offer a unified outline for the research on cross-border e-commerce by identifying driving factors of logistic competence and their financial consequences. The presented methodology can be applied for each cross-border e-commerce market, but specific details like effect magnitudes may be specific to each application. Cross-border e-commerce operators can apply the suggested framework of this study to their own operational data to expand their activities. Results of the study will enable firms to cut down buying cost, by dwelling more on growth sectors, affordable suppliers, good warehousing with better concentration to cut down inventory cost. From this study, express delivery service providers will be properly guided on when and who to contact for proper services in the entire supply chain.

The governments of the CEMAC and regulators with the understanding of this study would affect the required administrative structure, enactments and extra control methodology required in the express delivery sector as well as E-commerce industry towards operational and foundational dangers that may emerge from the utilization of the new technology.

Keeping in mind the fact that we live in a rapid changing environment, the study would provide an insight to the research proper and the literature would enable future researchers to understand the concept of express delivery services and E-commerce.

Organization of the Research: *The Introduction* presents the context, problem statement, aim, research questions, significance, scope and organization of the research. *Chapter One* examines the conceptual Framework, theoretical review: (Technology acceptance model, the diffusion of Innovations theory, First mover theory and transactions cost approach). *Chapter Two* deals with research methodology, research design, target population, sampling design, rationale for sample selection, data collection instruments, validity of the research instrument, reliability, data analysis and ethical considerations. *Chapter Three* presents the practical interpretation or empirical findings of the data analysis. *Conclusion* summarizes the analyzed findings, makes relevant conclusions and recommendations while at the same time giving suggestions for further studies.

1. LITERATURE REVIEW

1.1 The Concepts of Express Delivery Services and Cross border E-commerce

The express delivery industry came to light around the 1960s in the United States and evolved by the late 1970s, when some major developmental changes were made in the Air Cargo industry in US. The need for fast delivery of purchase by consumers or end users was the main drive to its development since postal and freight services were becoming too slow. This explains the reason behind the fast growth of the express delivery from US market to international markets in the 1980s, as value-added services like door-to-door deliveries and next-day or time-definite shipments were brought to light. Oxford Economics (2009).

According to Industry Analysis & Outlook (2016-2020): *Global Express Market (Domestic & International)*, the express industry had made simple and speedy the process of shipping goods. Nowadays, the buy is given access to the entire purchase process starting from when order is placed right up to when he receives the items. This has become even easier in that the shipper takes care of boarder or customs clearances and taxes to make ease the supply chain process.

Industry Analysis & Outlook (2016-2020) is therefore implying that, to meet the requirements of business, the express industry relies on overnight transport to use the 'dead time' from when a company hands over its shipment late in the working day to delivery to the recipient early the following day. A diversity of shipping methods including cars, trains, aircraft and manpower have facilitated the entire express delivery business. The express industry therefore trusts overnight transportation of goods since 'dead time' is made use of to facilitate next day delivery.

The express industry, as presented in Oxford Economics (2009), has developed from the delivery of documents and parcels to specialist items such as high-tech products, semiconductors and general airfreight commodities. Typically, medical, expensive and light-weight goods are the types of deliveries done through express service.

Oxford Economics (2009) statistics indicated that Four companies - DHL, FedEx, TNT and UPS, also referred to as 'integrators' – are the leaders of the global express industry, but there are many others in this highly competitive sector. It also refers to the term 'integrator' as "... the ability of these companies to offer door-to-door, time-definite integrated services, where the company maintains control over all aspects of the distribution process – for instance, by offering the possibility of changing the destination

and addressee in transit – and with each item being tracked at every step throughout its journey”. Oxford Economics (2009).

However this study looked at the role of express delivery services in three dimensions: Logistic competence, willingness to pay a mark-up cost (logistic cost ratio), and Lead-time benefits. Logistic competence consists of efficiency and efficacy related to the movement, storage and handling of goods and related Information and Communication Technology (ICT). McKinnon et al (2017). This includes Supply Chain Management (SCM) responsibilities, but excludes employees whose main focus is purchasing, production management or sales. See Figure 1: below. With reference to the International LPI (2018), the criteria for logistic competence include:

Figure 1. Criteria for logistic competence



Source: Composed by author – Source: (LPI 2018)

The logistic cost ratio (LCR) is defined as the cost mark-up of express delivery as compared to conventional delivery, measured as percentage of the price of the delivered product. Customers compare transport cost with the price of the ordered product when choosing between regular and express delivery. For products of high value, that is, with low LCR, customers are more likely to pay for express delivery services on top of the normal delivery price.

According to Mahmood (2014), lead-time benefit (LTB) is defined as the percentage lead-time reduction of express delivery services as compared to the lead-time of normal ground delivery. The charges for express delivery from transport agents increase with transportation distance, so that cross-border online shops also charge larger express delivery costs to customers located farther away from them. Customers' willingness to pay for express delivery increases for larger lead-time benefits.

In emerging markets, especially with a huge domestic market such as the CEMAC Sub region, consumers may face difficulties when searching for affordable imported goods in their local retail stores. A write-up on Business Insights on Emerging Markets explains that, a growing middle class with increased exposure to the internet and foreign products, which are often considered of higher quality and status, makes demand for overseas goods increase steadily every year. According to this paper, to purchase these foreign products, consumers in the CEMAC region use overseas websites or separate domestic e-market places. These marketplaces are specialized in international e-commerce and host international suppliers to buy imported goods. This process of buying overseas products directly from foreign retailers and suppliers via the internet, without the specific need for an intermediary business entity, is called: cross-border e-commerce. OECD (2020).

Cross-border E-commerce refers to the new type of export trade means by which companies and individuals use E-commerce to integrate the upstream, downstream, and related resources of the industry chain, and electronically display, negotiate, and deal in traditional import and export trade (Shuzhong M. et al, 2018). Cross-border E-commerce therefore, has a lot of benefits starting from its inception with limited connections, reduced charges and even fast returns worldwide.

It is common today to buy goods from anywhere in the world through electronic commerce which offers striking chances to customers because of competitive prices and wide product assortments. The rapidly expanding international e-commerce market for online business-to-customer (B2C) supply shares the importance of income and distance factors with traditional offline business-to-business (B2B) international trade flows (Zwass, 1996). The Internet has made the world flatter and some have claimed the "death of distance" whereas others still find cross-border distance effects for online trade but to a lesser extent than for offline trade (Friedman, 2007).

Most companies today use the strategy of Cross-border e-commerce (CBEC) to gain market share and popularity in a chosen market area and the CEMAC sub region is not left out. When these companies succeed to trade internationally and more goods are being sold hitch-free, they tend to create local market

bases internationally for registration and taxing purposes. This system increases sales bot locally and internationally. According to Chen et al. (2020), in selecting a suitable CBEC entry strategy into the CEMAC Sub Region for a specific product, the following factors are suggested to be taken into consideration:

Table 1. Factors to take into consideration when selecting a suitable CBEC

Factors to take into consideration when selecting a suitable CBEC		
1	The size of the company	Thresholds for turnover, balance sheet total and the average number of employees.
2	The product	The type of goods you sell
3	The sales channel	What medium of sales do you use
4	Rules and regulations	Guidelines and instructions for your business
5	The budget	What is the size of your investment
6	The marketing tools	Techniques used to develop and promote your products and services

Composed by Author

According to Ndonga (2012), the development of cross border e-commerce has offered numerous advantages to businesses and consumers. Some of the key benefits he outlined are represented below:

Table 2. Benefits of cross border e-commerce

1	<i>Business efficiency increase</i>	Ndonga (2012) states that one of the fundamental benefits of e-commerce is that it increases the speed and accuracy of business exchanges, thereby reducing trade transaction costs. The ancient days when companies used to employ staff and set up offices and supermarkets, pay transportation costs from warehouse to shops is gradually phasing out as customers can get whatever product they want online and the seller only borders about the mood of courier. This new system goes a long way to reduce cost from both seller and buyer while saving time.
2	<i>Market Efficiency increase:</i>	The rise of e-commerce has also introduced a new system of efficient and perfect competition. This is because customers can buy from just any company that runs an attractive advertisement. The difference nowadays can only be found in the product quality and durability or let's say, after sales.
3	<i>Global Service Provision expansion:</i>	Global service can now be ensured by the creation of websites that can be used either for educational purposes, consultancy and many others. This has brought the world market into a global market just with a click on company websites.
4	<i>Customized Services provision</i>	E-commerce has improved customer service as it is very easy to know what exactly the client wants since the selection process is done by the buyer with avenues to compare items and choose just the needed. The service provider can as well chat live on their websites during the selection process and this goes a long way to guide the clients towards a better decision making.

Composed by Author - Source: Ndonga (2012).

Ndonga (2012), in his work, *E-Commerce in Africa: Challenges and Solutions*, categorically explained that; “Despite these vital benefits, e-commerce has not penetrated African economies like in the Western world. Most Small and Medium-sized Enterprises (SME’s) in Africa are yet to venture into online trading, while many consumers seem to be wary about online purchases. Consequently, many African States have been unable to reap the full benefits of e-commerce”. Ndonga (2012). Some of these challenges that he made reference to include:

-Digital Divide Barriers to E-commerce: There is inconsistency in the dissemination level of ICT infrastructure in developed and developing countries. Like other characteristics of least developed and

developing regions, e-commerce is still taking root in many African States and has not fully advanced to the current standards characterized by the second wave of e-commerce. This variance is often referred to as the digital divide. There is a digital divide that exists between Africa and the developed world, and also within different regions of Africa. Ndonga (2012)

-Lack of Adequate ICT Infrastructure: In many African States, there is a deficit of the ‘new end-user technologies’ that have characterized the modern wave of e-commerce. Internet related technologies are mostly the ones facing this problem. Africa is still lacking behind in many ways when it comes to adopting urbane technologies. Internet services in most African nations is characterized by bandwidth constraints that lead to slow and inefficient connections. Ndonga (2012)

-Lack of ICT Knowledge: Another factor that has widened Africa’s digital divide has been the lack of ICT knowledge. Majority of people in Africa still do not have education to facilitate internet usage and even the educated ones either lack the means to access or do not know how to operate what they have.

-Threat of Cybercrimes: Finally, the risk of online fraud and other cybercrimes in Africa have also widened the digital divide. The alarming cybercrime wave today has driven many interested prospects to fear, thereby creating a great limitation to use of the internet or e-commerce platforms. Ndonga (2012).

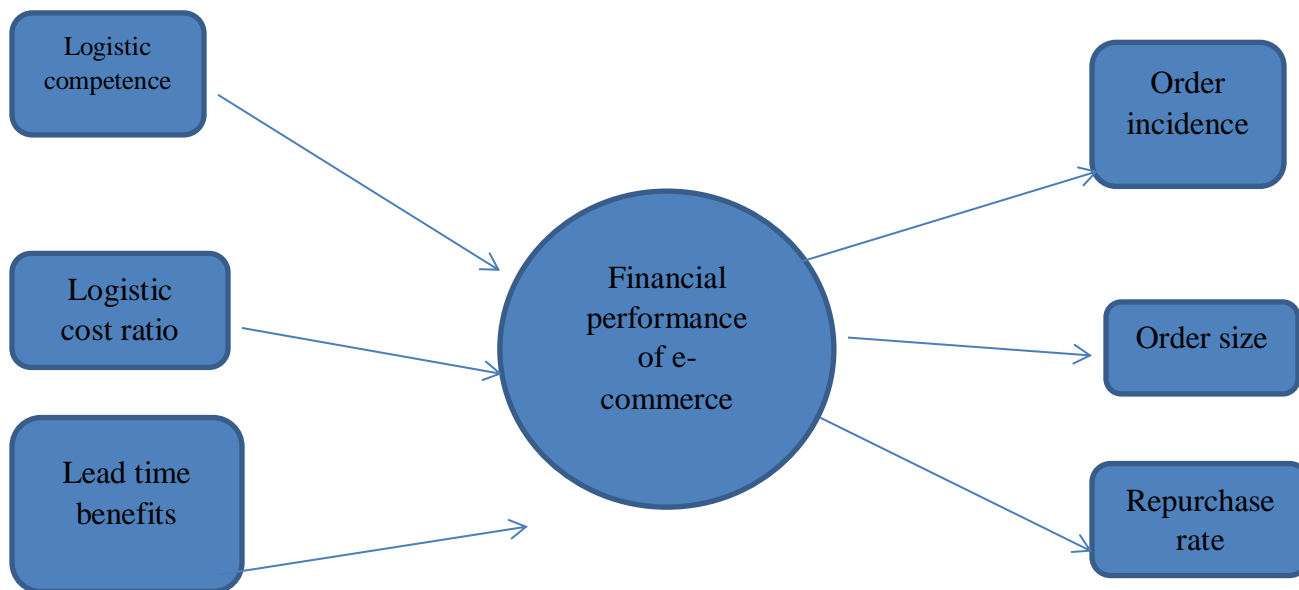
1.2 The Conceptual Link between Express Delivery Services and Cross-Border E-commerce.

Trade performance is a key determinant of economic growth and prosperity. Over the last 45 years, the countries that have grown fastest have typically been those that have also seen the fastest growth in international trade. The enhancement of cross-border e-commerce through express delivery services have equally enhanced globalization as new markets have opened up and more companies have established international operations and foreign subsidiaries. It has also resulted to increasing specialization encouraging countries to focus on the activities in which they have a comparative advantage, and trade with other countries that have an advantage in the production of other goods and services. It has also enabled companies to market their products around the world, and communicate with customers and suppliers in other countries.

This research represents logistic competency by the express delivery adoption level in e-shops. The express delivery adoption level (EX) is defined as the percentage of all e-shop transactions that is

delivered by express services. The e-shop's financial performance is measured in terms of the order size (OS) of the purchasing transaction, the order incidence (OI) as number of orders per week per population, and the repurchase ratio (RP) of total purchasing transactions. Lead-time reduction is measured in terms of the costs of time saving (CTS) which is the ratio of the cost mark-up of express delivery over the lead-time reduction in days. It is also worth noting that Logistic Cost also Contributes to Financial performance of e-commerce.

Figure 2 Conceptual Framework



Source: Composed by author

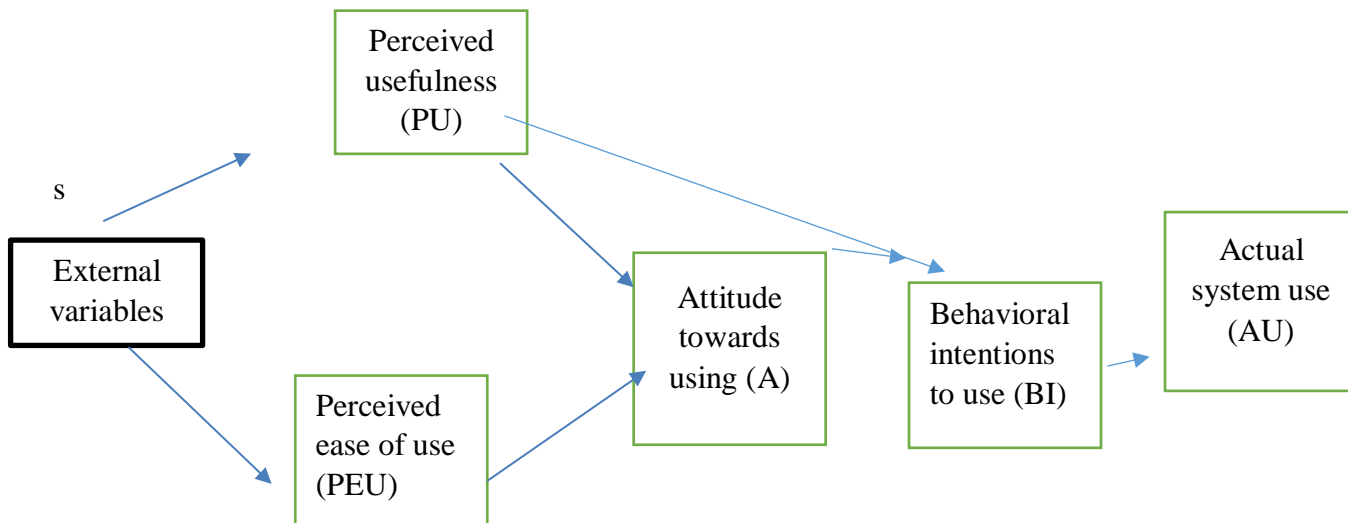
1.3 Theoretical analysis of delivery services and cross boarder E-commerce

This study was fastened by the following theories; the technology acceptance model, diffusion of innovations theory, First mover theory and transactions cost approach. The theories were relevant to the study because they established a positive link between express delivery services and cross border e-commerce.

The Technology Acceptance Model (TAM): Many researchers have ventured into the acceptance of express delivery services and e-commerce since the Technology Acceptance Model (TAM) was advocated by Davis in 1986. This model was amplified by Bertrand and Bouchard in 2008. The model was intended to predict user's acceptance of Information Technology and usage in an organizational context and TAM focuses on the attitude explanations of intention to use a specific technology or service.

This has become a widely applied model for user acceptance and usage with a number of meta-analyses on the TAM that have demonstrated that it is a valid, robust and powerful model for predicting user acceptance. Dwivedi, Rana, Jeyaraj et al. (2019).

Figure 3: The Technology Acceptance Model



Source: Davis, 1986

TAM model which deals with perceptions as opposed to real usage, suggests that when users are presented with a new technology, two important factors influence their decision about how and when they will use it (Davis, 1989). These key factors are:

Perceived usefulness (PU), according to Davis is "the degree to which a person believes that using a particular system would enhance his or her job performance".

Perceived ease-of-use (PEoU) is "the degree to which a person believes that using a particular system would be free from effort". (Davis, 1989).

According to Venkatesh & Davis in their work: A Theoretical Extension of the Technology Acceptance Model, a user's acceptance of information system is determined by the intention to use the systems, while perceived usefulness and ease of use can predict the usage intention, and perceived ease of use is hypothesized as a predictor of perceived usefulness. Accordingly, users' beliefs influence their attitude, which in turn influence behavioral intention and both perceived usefulness and perceived ease of use are beliefs that affect user's attitude with a direct effect on perfect usefulness. Venkatesh & Davis (2000).

Studies demonstrate that the acknowledgment to purchase online changes with the setting in which clients can utilize an adaptable delivery service method. This investigation concentrates on flexible management of purchase and delivery that makes use of the Technology Acceptance Model (TAM). The model proposes that when clients are given another innovation, various elements impact their choice about how and when they would utilize it. These components are seen convenience characterized as how much a man trusts that utilizing a specific framework would improve his or her activity execution, and saw usability characterized as how much a man trusts that utilizing a specific framework would be free from exertion (Davis, 1989). Thusly, TAM was picked as the suitable model and was stretched out to incorporate different factors, for example, perceived simplicity of availability of the portable installment administrations, perceived minimal effort of the versatile installment administrations, perceived accommodation, perceived security, perceived support from the flexible service provider.

Diffusion of innovation theory: This theory of technology was put forth by Rogers (2003). In the theory, a technology is simply a plan for value relation that lowers the doubt in the cause-effect relationships involved in achieving an intended outcome. Diffusion is the adoption of an innovation over a period of time through a given social system. This process diffusion has a consequence that result in the acceptance or penetration of a new idea, behavior, or physical innovation. Rogers (2003). Rogers identified several attributes of an innovation that are key influences on adoption behavior, stating that these attributes are relative advantage, complexity, compatibility, trialability and observability. Rogers (2003). A number of previous studies have examined these factors in adoption and diffusion of Internet-based technologies and have consistently concluded these attributes, particularly those of relative advantage, ease of use, and compatibility, as the most frequently salient factors for adoption of Internet and mobile technologies (for example, Park and Chen 2007). Rogers summarises five attributes stating how related they are to acceptance and implementation of invention and this concept is very relevant for innovation diffusion in express delivery.

Relative advantage: This is the extent to which an invention is seen to provide more advantages compared to the antecedents. Relative advantage results in increased efficiency, economic benefits and enhanced status (Rogers 2003, citing from Moore and Benbasat 1991). This research by Moore and Benbasat found that relative advantage of an innovation is positively related to the rate of adoption and suggests that when user perceives relative advantage or usefulness of a new technology over an old one, they tend to adopt it (Rogers 2003). In the framework of express delivery service, and e-commerce

adoption, advantages like timeliness, suitability and affordability have been widely reported. (Lin 2011). Therefore, when customers perceive distinct advantages offered by mobile money use and mobile banking, they are more likely to adopt it.

Complexity: Complexity is the extent to which an innovation can be considered relatively difficult to understand and use. Cheung and Kemper found that complexity negatively influences the adoption of internet usage and that this complexity is the opposite of ease of use. Cheung & Kemper (1992). A vast body of research suggests that there is a strong impact of perceived ease of use of new technology on its adoption. (Luarn & Lin 2005). The way that internet shopping is designed to be easily used makes the customers to have a positive attitude towards express delivery sites. (Lin 2011).

Compatibility: Compatibility refers to the degree to which a service is perceived as consistent with users' existing values, beliefs, habits and present and previous experiences (Chen & Paulraj 2004). Compatibility is a vital feature of innovation as conformance with user's lifestyle can propel a rapid rate of adoption (Rogers 2003). Compatibility has been found influential in the adoption of virtual store (Chen et al. 2004), m-payment (Chen 2008), Thus, Rogers (2003) also stipulated that there is a relation between compatibility and adoption of technology which will hold in the context of express delivery services and e-commerce

Observability: Observability of an innovation describes the extent to which an innovation is visible to the members of a social system, and the benefits can be easily observed and communicated (Rogers 2003). Moore and Benbasat (1991) simplified the original construct by redefining observability into two constructs: visibility and result demonstrability.

Trialability: This is when you able to try new technologies and see the outcome before adopting them. Potential adopters who are allowed to experiment with an innovation will feel more comfortable with it and are more likely to adopt it (Rogers 2003). Further support is given by Tan and Teo (2000) who argue that if customers are given a chance to try the innovation, it will minimize certain unknown fears, and lead to adoption. The way that express delivery companies give assistance to clients during trial periods starting for the point of product selection to when it is delivered eliminates fears of trying out express delivery purchase through e-shops.

Perceived risk: This attribute refers to the degree of risks in using an innovation (Rogers, 2003). Risk perception by customers usually arises due to the doubt related to the degree of inconsistency between

customers' judgment and real behaviour, and technology failing to deliver its anticipated outcome and its consequent loss (Chen 2008; Lee et al. 2007; Rogers, 2003). When adopting a new technology, there is always proof of the importance to consider that particular technology and this is often ascertain after the trial phase. In the context of express delivery services and e-commerce, the perception of risk is even more important due to the threat of privacy and security concerns (Luarn & Lin, 2005). There is always the fear that the parcel can get missing along the shipping process. Some users also fear that hackers may access their accounts via stolen PIN codes (Poon 2008). Another group of users sometimes fear that the parcel can be stolen. This explains why perceived risk is likely to pose a negative effect on express delivery and e-commerce adoption.

Diffusion of innovation theory is therefore necessary in this study because it is considered as one of the most common theories that have attempted a deeper look at factors that affect individuals in their process of considering new technologies and innovations. This theory seeks to explain how, why and at what rate new ideas and technologies spread through cultures. Rogers (2003).

Gravity Model and Distance Dimensions in International Trade: The gravity model for bilateral trade flows was originally proposed by Tinbergen (1962) and Pöyhönen (1963). Tinbergen and Pöyhönen (1962-1963) term “gravity” to the assumption that the attraction between two countries depends in a multiplicative way on their distance and on their economic “masses” measured by their gross domestic product (GDP). This is very similar to Newton’s law of gravity in classical mechanics. Today, the gravity model is well-grounded in the economic theory of international trade (Head and Mayer, 2014). The distance factor not only refers to the geographical distance between the two countries but also to institutional and psychological factors such as home bias and not sharing a trade union, legal system, currency, language, or history (Lendle, 2016).

The persistence of distance effects in express delivery is not only due to transport costs but also to unfamiliarity (Huang, 2007) and even exists on the international level (Wolf, 2000). Distance can be used as a proxy for transport cost and border taxes as a proxy for economic distance (Anderson, 1979). Contrary to popular beliefs that the world has become “flat” and that distance is “dead”, empirical economic research on traditional, offline international trade demonstrates the opposite (Head and Mayer, 2014). National borders remain an important barrier to trade and distance is not dead (Anderson, 2003).

A meta-analysis of large number of international trade studies spanning more than a century shows persistent distance effects that do not decrease over time (Disdier, 2008) it should be noted that an important difference between B2B and B2C trade is the establishment of trust, as it is much easier for firms to build mutual trust with their major business partners than with their numerous individual customers abroad. E-commerce today relies very much on trust because people buy products online from far away continents relying only on the hope that the e-commerce manager will deliver as promised. This distance in the minds of customers can only be shortened in three main dimensions including: information, cost, and time. If e-commerce managers ensure that the information on their websites facilitates easy browsing, selection and comparing of products and price, it adds more credibility and trust.

Consumers with higher price-search intentions are more likely to switch to online channels but poor seller reputation discourages consumers from transactions with distant agents (Gupta et al., 2004).

In most cases, e-commerce service providers can assess themselves through customer ratings and reviews on their website as this can give them an insight on what to change or improve on. This too will give them a good reputation if customers see the changes and improvements made after their comments. E-commerce demand can be influenced by partitioned shipping prices and free shipping and provide an empirical comparison of these two pricing strategies (Frischmann et al., 2012). Notwithstanding, the express delivery service industry has not yet attained the deserved attention in literature so far. This is the more reason why experimental findings on the three distance dimensions in cross-border e-commerce are still seemingly diversified. Because of cultural differences, negative distance effects persist for digital products even in the absence of transport costs, search costs, and other trade barriers (Blum and Goldfarb, 2006).

First Mover Advantage Theory: The First Mover Advantage Theory explains the ability by a business organization to outwit competitors by being the first to enter a new market (Suarez & Lanzolla, 2005). It is important to note that, this theory is based on Suarez and Lanzolla's work, given that they were the first to propound it. The first mover does not always confer advantages, and this explains why it is based on deriving specific advantages in the process of establishing foreign business investments by being the first business investors in a particular market (Hill et al, 2016). There are a good number of successful

examples of first movers in the express industry and these include: Sony, Amazon, eBay and FedEx, (Kerin et al, 2013).

Advantages of first mover can be branded as resilient and transitory because the firm enjoys durable first mover advantage if it experiences long term market share and profitability (Cleff and Rennings, 2012). Companies like Coca-Cola, Dyson Hoovers, and Mercedes Benz are good examples. On the contrary short lived first mover advantages are normally experienced during the early entry period and examples of such companies are Nokia, and Dot Com companies (Hill et al, 2016).

The current business world demands proper identification of potential markets for various products and services (Cateora and Graham, 2011). According to Twarowska and Kakol (2013), whilst financial and intellectual resources are important, knowing the pace of technology and the market like what Apple Plc did is critical to first mover's success. Battles in international business competition are won on the abilities to become the first conquerors of certain market segments and sectors (Czinkota and Roukainen, 2007).

The ability to establish technological advantage and leadership such as exploiting express delivery services and e-retailing is an important determinant of foreign investment success because it enables business investors to develop a sense of market preference over their competitors (Morrison, 2011). These day business organizations rely on the availability of technology which is either acquired through learning or experience, in almost every aspect of business operation

(Kerin et al, 2013). Business organizations interested in establishing foreign operational bases should either adapt to the extents of technological advancements such as express delivery services and e-commerce in the foreign country, or ensure that their technological developments beat those of rival companies (Morrison, 2011). Advanced technological advantages offered express delivery ensure that, organisations establish, and protect newer technological developments and maintain business operations in the process (Brook et al, 2011).

Enhanced technological leadership ensures that business organizations have the stamina to successfully counter the perils of foreign markets (Albaum and Duerr 2011).

When establishing a fruitful overseas business, it becomes primordial to consider the essence of pre-emption of assets as underscored by the free mover theory. Successful cross border e-commerce demands that, business owners foresee future market situations, and then invest in assets that would likely

experience price increases (Kenyon et al, 2016). According to Albaum and Duerr (2016), the acquisition of such assets gives the business a form of security, and growth. The profits obtained from possession of such assets enable foreign business organizations to increase their asset base and establish themselves at the heart of foreign markets (Kenyon et al, 2016).

Some of such assets consist of investing on express delivery services and e-shops. The switching of purchase costs is directly related to the organization's ability to correctly identify assets based on pre-emption

(Hill et al, 2012). The dynamics of costs of delivery in international markets can have a positive or negative impact on business investment decisions (Albaum and Duerr, 2016). Organizations that correctly identify and make good use of delivery services that are likely to experience a shift in delivery costs tend to experience minimal problems after the establishment of international business operation (Twarowska and Kakol, 2013).

First Mover Advantage theory is therefore pertinent for this study due to its supposition that business entities can benefit certain industry advantages based on the fact that they came into market first and this alone facilitated their e-commerce via express delivery services. However, Barney (1991), questions this theory as he points out that the first mover company has a unique resource in being able to identify a new market. "...in order for there to be first-mover advantage, firms in an industry must be heterogeneous in terms of the resources they control". (Barney, 1991, pp.99-120).

Summarizing the results of the first chapter, the theoretical framework focused on the speculations of the research question on the concept of express delivery services in cross border e-commerce in the CEMAC Sub Region. . In this 21st century, technological progress is at its peak, implying that the product will reach the buyer in the shortest time possible. With the use of smart phones, computers, and other technologies nowadays, any customer who buys online can easily communicate with the seller and track their product from the moment of the order till its delivered. In the same light, the seller can equally track every participant in the distribution channel, due to the constant progress in communication technology. As the number of internet users increases, the distribution channel itself moves with the trend, making it more advanced and more modern than the traditional distribution channel. In essence, this new medium, e-commerce, has led to a series of new phenomena in supply chain process. For example, disintermediation reduces the number of mediators in the supply chain, leading to the multichannel approach.

From what is elaborated above in the hypothetical and observational writing, restricted research has been directed on the connection between express delivery services and cross border e-commerce in the CEMAC sub region. It is normal to have a positive connection between flexible express delivery services and cross border e-commerce, however no known study has been directed to set up the connection between the two thus the study gap. The current investigations have been done in different economies which have diverse working environment from that in the CEMAC sub region. Generally, a good number of studies have involved e-commerce logistics, though very few of them concentrated on express delivery. For this reason, it is still a valuable consideration to investigate the service requirement of online shoppers for express delivery in the last mile and its role on cross border e commerce.

2. METHODOLOGY OF RESEARCH

2.1 Scope and Area of the Research

The methodology of this research will dwell on the scope and the area, through the use of multiple correspondence analysis and the estimation technique will be the ordinary least squared; while the Cronbach alpha coefficient will be used for the explanatory or independent variable “Express Delivery Services”.

Scope of the Research. The research seeks to investigate the role of express delivery on cross border e-commerce.

Area of the Research. The CEMAC region is made up of six different countries: Cameroon, Central African Republic (CAR), Chad, the Republic of Congo, Equatorial Guinea and Gabon. The CEMAC, by nature, is very significant given that it shares borders with all other regions in the continent including: ECOWAS and CEN-SAD (West); EAC, COMESA, IGAD and CEN-SAD (East); SADC (South); and Arab countries (North). Countries within this region all share a common history, language, similar geographical region and a very distinctive economy. The total population of this region is about 32 million with varying densities in each country, but relatively small compared to other regions in Africa. Factually, the per capita income of this region is relatively low as little or no effort has been made to reduce poverty levels. Oil and several other natural resources are the main source of dependence. There are only two landlocked countries (Chad and the Central African Republic) in the region as compared to other sub-regions in the rest of Africa. Additionally, while the other five countries are considered tropical regions, Chad is the only Saharan country within the region, running across the Sahara Desert, as well as the Sahel and Sudan areas. It is worthy of note that the CEMAC region has a wide range of unexploited minerals and agricultural products. The Republic of Congo, for example, is home to the world’s second forest and great water reserves, though the region as a whole remains the least developed on the continent in terms of infrastructures, transport, energy, and technology, all of which serve as challenges to production and socio-economic development in the region. The CEMAC region of Africa is also known to be one of the two CFA zones in Africa. Gurtner (1999). Prior to independence, economic unions were created by the French in the Central and Western parts of Africa which were under their rule. Orr (1996). The Afrique Occidentale Française (AOF) is the first of such unions established in 1898 by bringing together Senegal, Guinea, Côte d’Ivoire, the Sudan (now Mali), Dahomey (now Benin), Upper Volta

(now Burkina Faso), Mauritania, and Niger. Later in 1910, the Afrique Equatoriale Française (AEF) was created bringing together Chad, Oubangi-Chari (now Central African Republic), Congo and Gabon. Cameroon however was quite distinct in the sense that it was ruled by both Britain and France, and the above colonies later gained their independence around 1962 thereby ending all previous arrangements with France and becoming a country in their own rights.

2.2 Research Design

The research design used for this study was Descriptive in nature with the use of pie charts. The real motivation behind descriptive research design is to depict the situation at present in the environment of study. It is a procedure of gathering information with a specific end goal to give expected results regarding the research under study, (Mugenda 2003). The type of the study used on investigative research was appropriate in gathering information on people’s attitudes, sentiments, and behaviors, (Babbie, 2004). Descriptive research was appropriate for this study because it presented specific situation in describing the role of express delivery services on cross border e-commerce. This study will also adopt a causal research design to look at the extent to which express delivery in the CEMAC region affects cross border e-commerce.

Table 3. Research Design

No.	Method	Description
1	Target Population	100
2	Sampling technique	Simple random sampling technique, stratified sampling, convenient sampling
3	Instrument of data collection	Questionnaire
4	Technique of data analysis	Descriptive and inferential analysis
5	Technique of estimation	Ordinary Least Square technique (OLS)
6	Method of data analysis	Multiple correspondent analysis (MCA)
7	Reliability of Research variables	Cronbach’s alpha coefficient
8	Descriptive Statistics	Showing the mean of independent variable
9	Pairwise correlation	Showing the presence of errors in OLS
10	Variance inflator factor (VIF)	Correcting the problems of OLS in VIF

11	Coefficients	Explaining the various variables whether positive or negative
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Source: Composed by Author

2.3 Target population, Sample and Sampling Technique

Target population. The targeted population for this research will be express delivery companies operating in the CEMAC sub region.

Sample Size. Sampling can be defined as the determination of a sample in a population, the representative fraction of a population or a statistical set that will be questioned during a sample survey to obtain a representative result. The study will adopt a census of 100 staff of some express delivery companies operating in the CEMAC sub region.

Sampling technique and justification. Sampling methods consist of building a sample of workers in express delivery companies operating in the CEMAC sub region, of a parent population to estimate characteristics and opinions. There are two categories of sampling methods: probabilistic methods and non-probabilistic methods (also known as empirical), I have opted for the non-probability sampling technique on the grounds that I rely on personal judgement technique. There are two types of non-probability sampling technique: stratified sampling and judgmental sampling. Taherdoost (2016) explains that Judgmental form of Convenience sampling is selecting participants who are readily and easily available. In this case, the researcher believes the selected few are workers who are deemed appropriate representatives of the population of interest due to their ability to provide desired information.

Instrument of Data collection. The measuring instrument that will be used in this research is the questionnaire that will be administered to the workers of express delivery companies, likely to provide information on express delivery and cross border e-commerce in the CEMAC sub region. The questionnaires will be administered online by the researcher and a copy will be published along with the research findings. This questionnaire will be developed based on the literature proposed in the previous chapter. The questionnaire will consist mostly of closed ended questions with 5-point Likert Scale. What usually characterizes Likert's scale is that it is symmetrical. The central position or neutral modality is commonly called "ni-ni" and can be formulated in several ways: Neither agree nor disagree or No opinion for example. I chose a five-point LIKERT Scale to analyse the use of express delivery and cross border e-commerce in the CEMAC sub region with values such as 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent. Within the span of 30days, 100 English and French

questionnaires in all, were administered online through emails to workers of some Express delivery and logistics companies in the CEMAC sub region and received an 83% response rate as some respondents never answered, some returned empty pages and some emails received unreachable auto-delivery reports. Of these 100 questionnaires, 60 were in English and 40 in French.

Variable on which data is collected and their measurement. This research has two main variables, express delivery services (independent variable) and cross border e-commerce (dependent variable). Three sub variables were used to explain the independent variable these include: logistic competence, willingness to pay a make-up cost for express delivery and lead time benefit through express delivery. This research makes use of the ordinal scale because, by definition, the Likert Scale is Ordinal. This scale has two properties: identification and scheduling. It is always possible for this scale to establish the rank of the modalities. The modalities which compose an ordinal scale are provided with a structure of order established according to a given criterion.

Model Specification: $Y = \alpha + \beta_1 LC + \beta_2 WPMC + \beta_3 LTB + e$. That is to say:

Y = Cross border e-commerce

α = constant term

LC- Logistic competence

WPMC- Willingness to pay a mark-up cost

LTB- Lead time benefit

$\beta_1, \beta_2, \beta_3$ = Beta coefficients indicating various levels of importance (weight of each factor)

e = Error term

Techniques of Data Analysis. Collected data was coded into SPSS version 20 for analysis using the Cronbach alpha coefficient approach. The first-hand data were analysed both descriptively and inferentially. The Multiple Correspondence Analysis was used to construct the indexes. Later on, the Ordinary Least Square estimation technique was used to test the hypotheses of the study.

Descriptive analysis used bar and pie charts, frequencies and percentages tables. The Ordinary Least Squares (OLS) technique was used for the estimation of the parameters of the model specified above. This is because it possesses the best linear unbiased estimator (BLUE) property and has been widely used in literature. Unbiased means that the estimated coefficients are a true representation of the population

parameters with the minimum variance amongst all other estimators rendering it efficient. The OLS technique of estimation is used when the dependent variables vary in the range negative infinity to positive infinity. However, it is not much of a problem if in practice the dependent variable fluctuates in a restricted interval say from 1 to 20 provided the variable is continuous in nature. Problems arise only when the dependent variable can take only two values such as binary variables. The continuous unlimited dependent variable is therefore the dependent variable in the study.

Before the OLS estimation, a single index (indicator) of each variable presented in the model specification is constructed using the Multiple Correspondence Analysis (MCA) given the nominal value of each of the items that make up logistics competence in terms of express delivery, willingness to pay a mark-up cost for express delivery and Lead-time benefits through express delivery services and cross border e-commerce in the CEMAC sub region. The extension of Correspondence Analysis (CA) is the MCA that permits the analyses of the pattern of relationships of several categorical dependent variables. Thus, a generalisation of Principal Component Analysis (PCA) when the variables to be analysed are categorical instead of quantitative. Technically, MCA is obtained by using a standard correspondence analysis on an indicator matrix (a matrix whose entries are 0 or 1) and these percentages of explained variance need to be corrected, and the correspondence analysis interpretation of inter-point distances needs to be adapted making the constructed indexes continuous variables which renders the Ordinary Least Squares operant and suitable for the estimation of the above specified model. Abdi H. & Valentin (2007).

Limitations of data tools. Primary data collected through survey questionnaires with both close ended and open-ended questions was used in this study. The limitations of this form of data are that: it was very difficult for the researcher to collect because it was time consuming, complex and a lot of commitment was required from the researcher to verify authors and check on published links.

The use of questionnaire as tool for the survey equally encounter some lapses: some respondents ignored certain questions owing to fact that they appeared impersonal to them, some questions were incorrectly completed, some respondents misunderstood questions because of language barrier, the questionnaire was also not suitable for some kinds of respondents like visually impaired since it was all virtual, it was also difficult for the researcher to go back to respondents in case of questions she forgot to ask due to the

fact that some respondents were anonymous and it was also difficult obtaining a sufficient number of response from certain respondents. All of these might affect the quality of results.

Ethical Considerations. Informed consent was sought from the respondents before data collection. Those not willing to take part in the investigation were under no commitment to do as such. Data assembled was utilized for the motivations behind this study.

Limitations of the study: This study, just like any other research tasks, has limits or shortcomings and it is advisable to raise for better determination of the range of its results.

The first limitation relates to the sample size which is 100; in this context the sample is regarded as being small, as such the results of this research can have difficulties to be generalized.

The second limitation is at the methodological level and refers to the use of the method of investigation with questionnaire for data-collection. This method has two disadvantages. On one hand, the measuring instrument does not seem to cover the whole of theoretical dimensions of the concepts because of the use of closed ended questions.

In addition, the instrument is being based on the declaratory trials to measure the perceptions of the respondents, which implies that there is strong subjectivity in the responses.

Some of the respondents completed the questionnaires in a hurry because of too many commitments at their job site, hence some information given could be unsatisfactory, thus not revealing the truth of what is needed. Some submitted incomplete responses while others submitted nothing, reason why we have a return rate of 83%.

Difficulties Encountered: The first constraint was time. The numerous activities of the school calendar and traineeship period made it impossible to allocate much time for the research, thereby hindering the smooth conduction of the research project. Late reply of mails by respondents was also another difficulty encountered with this study. The researcher had to go an extra mile to contact some respondents on phone and reminding them to answer the questionnaire.

3. PRESENTATION AND DISCUSSION OF FINDINGS

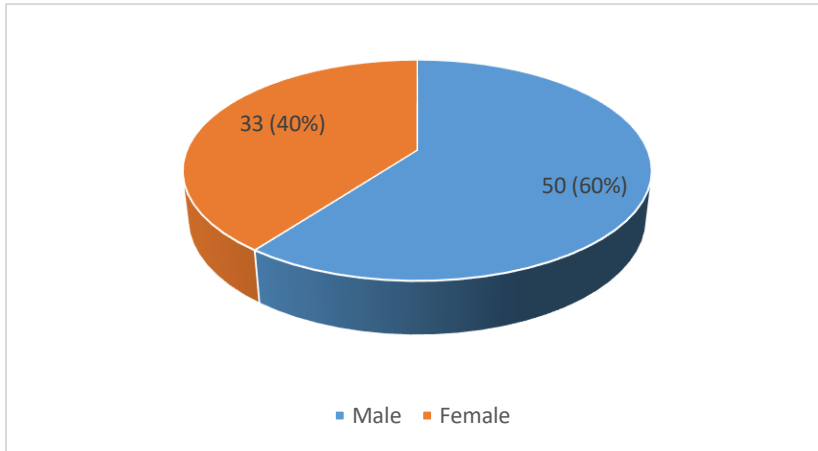
3.1 Descriptive Analysis

Within the span of 30 days, 100 questionnaires in two languages (French and English), were administered online through emails to workers of some Express delivery and logistics companies in the CEMAC sub region and received an 83% response rate as some respondents never answered, some returned empty pages and some emails received unreachable auto-delivery reports. It would also be worthwhile mentioning the names of some companies in the region that the respondents represent in this survey. These include: CAMPOST, Gros Bras logistic company – Yaounde, Amigo travel logistics and tourism, Cameeoun logistico Inc, Ets angel export, Chronopost, Esico express services international company, Direct exchange sarl, General mail services, Le car, FedEx Express, DHL sarl, IBTS Logistics, Ets kas trucks, Expressia forwarding company, MBA supply chain, Gester international group, Ets song services, Zerxes international trading and co limited, Encounter business training school, trinity integrated logistics sarl (TRIL), Atlas cargo and freight Cameroon.

Most of these companies used in the survey are small and medium sized companies operating in the region, with a few big names amongst them like DHL International GmbH; an international courier, package delivery and express mail service, which is a division of the German logistics firm Deutsche Post. DHL, for example, delivers over 1.5 billion parcels per year and employing over 570,000 staff. FedEx Corporation on its part, founded in 1971, is an American multinational conglomerate holding company which focuses on transportation, e-commerce and business services which is headquartered in Memphis, Tennessee, employing over 650,000 staff. Chronopost also has a wide range of operation as they also ship goods to Europe under the DPD group operations. The same applied to Amigo travel logistics which has branches in Europe, Middle East and Asia, indicating its international nature. This is the more reason why it was easy to get a good number of respondents from those big companies in the entire region because they have so many staff, as compared small enterprises like CAMPOST that is based only in Cameroon employing around 1,245 staff and others.

Demographic Characteristics of Respondents

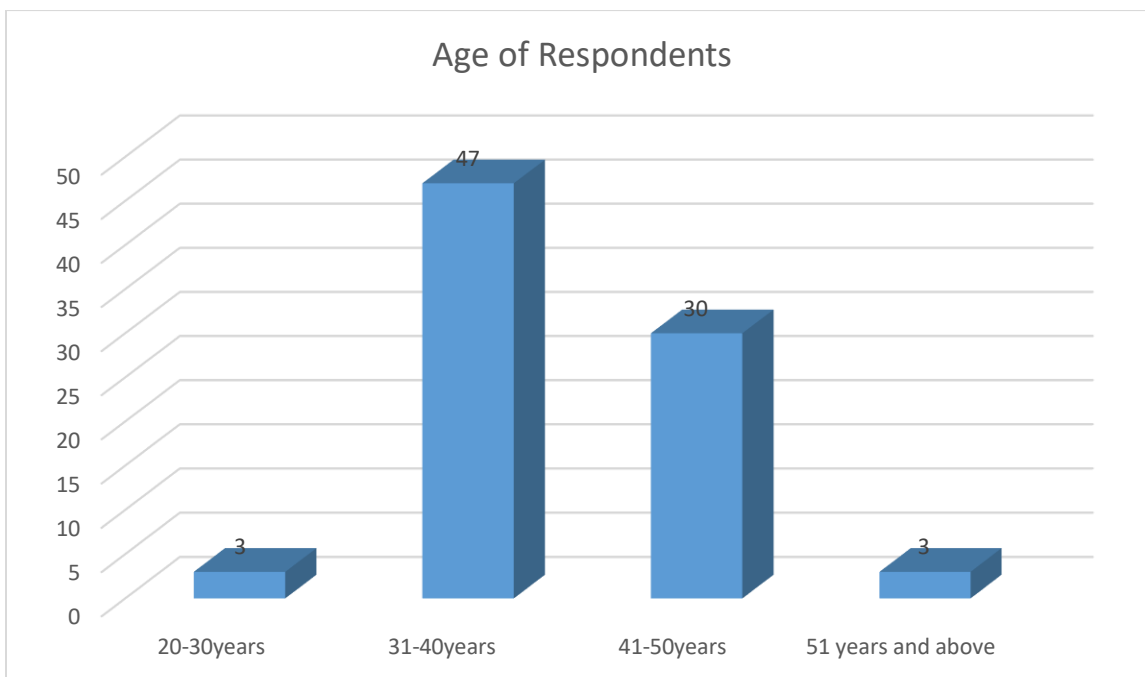
Figure 4: Distribution of respondents by gender



Source: Composed by author (field data)

The findings showed that majority of the respondents 50 (60%) were males and the remaining 33 (40%) were females.

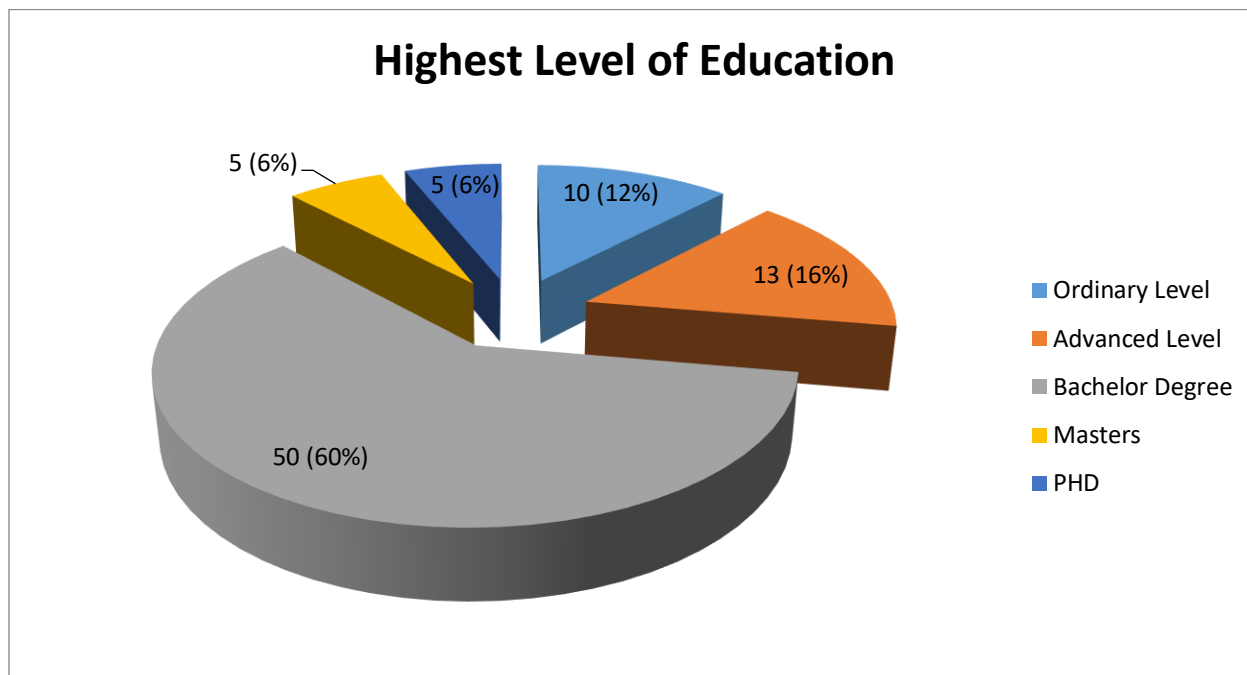
Figure 5: Distribution of respondents by Age



Source: Composed by author (field data)

The data in figure above shows that 3(3.6%) respondents were between 20-30 years, 47(56.6%) were between 31-40years, 30(36.1%) were between 41-50 years while 3(3.6%) were 50 years and above. Majority of the respondents were 31-40years, making up majority of the working population as well.

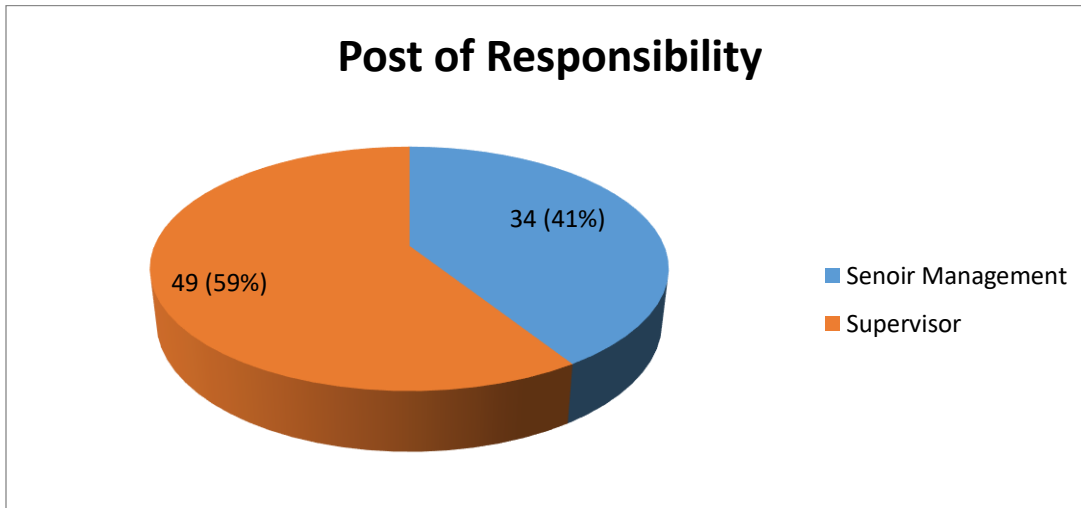
Figure 6: Distribution of respondents by level of education



Source: Composed by author (field data)

The study shows that majority of the respondents 50(60%) highest qualification was a bachelor's degree followed by 13(16%) whose highest level of education was with advanced Level, 10(12%) whose qualification was Ordinary level, 5(6%) whose highest qualification was Master while 5(6%) whose highest qualification was PHD. The findings show that majority of the respondents have a great knowledge on the role of expressed delivery services.

Figure 7: Distribution of respondents by post:

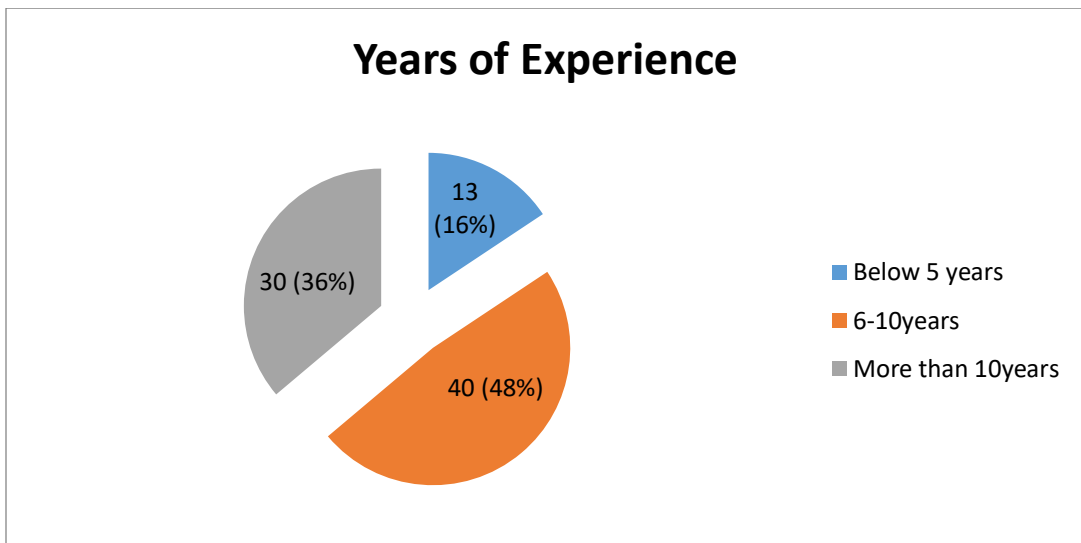


Source: Composed by author (field data)

Figure 7 gives a distribution of respondents according to their post of responsibility

From the data collected it can be seen from the post of responsibility that, it showed that 49(59%) of had a post of responsibility of a supervisor, while 34(42%) had a post of senior management.

Figure 8: Distribution of respondents by years of Experience



Source: Composed by author (field data)

Figure 8 gives a distribution of respondents according to their years of experience

From the data collect showed that 30(36%) had worked for below 5 years, 40(48%) had worked for 6-10years and 30(36%) had worked for more than 10 years. This means the majority of the respondents have a great knowledge on the study.

Test of Reliability: The researcher carried out a pilot test to establish the reliability of the research instruments for both the dependent and independent variables.

A Cronbach alpha coefficient was computed for the explanatory variable or independent variable “**EXPRESS DELIVERY SERVICES**”. Which is studied through these 3 dimensions and the findings are as indicated in Table 4.

Table 4. Reliability of the Research Variables

Variables	Cronbach’s alpha	Number of items	Acceptability
Logistic Competence	0.842	5 items	0.842 > 0.7 Acceptable
Willingness to pay a Mark-up cost	0.853	5	0.853 > 0.7 Acceptable
Lead-time Benefits	0.743	6	0.743 > 0.7 Acceptable
Cross-Border E-Commerce	0.853	6	0.853 > 0.7 Acceptable

Source: Composed by author (field data)

Table 5: Respondents Opinion on Logistic Competence

ITEMS	No extent	Little extent	Moderate extent	Great extent	Very great extent
Your company's express delivery substitutes regular delivery options	05(6.02%)	23(27.7%)	30(36.14%)	25(30.1%)	10(12.04%)
Prompt services of express delivery affects your company's financial performance	21(25.3%)	42(50.6%)	20(24.1%)	00(0.0%)	0(0.0%)
Does your company provide discounts or free shipping to its clients?	12(14.5%)	21(25.3%)	30(36.1%)	13(15.7%)	12(14.5%)
Your company's offers prompt delivery of consignments and in good conditions	00(0.0%)	20(24.1%)	10(12.4%)	30(36.1%)	23(27.7%)
Do discounts or free shipping provided by your company increase order incidence?	00(0.0%)	20(24.1%)	10(12.4%)	30(36.1%)	23(27.7%)

Source: Composed by author (field data)

The study found out that logistic competence had a Cronbach alpha coefficient of 0.842, willingness to pay a Make-up cost had a Cronbach alpha coefficient of 0.853, lead-time Benefit had a cronbach alpha of 0.743 and Cross-Border E-Commerce had a Cronbach alpha coefficient of 0.853 This show that all the variables had a Cronbach alpha coefficient of 0.7 and above an indication that the research instruments were sufficient and reliable for the study. This agrees with Grayson (2004), who said that the closer the

Cronbach's alpha coefficient is towards 1.0, the greater the internal consistency of the items in the scale. The results as shown in table 4 which illustrates the results of reliability test, by

Respondents Opinion on Logistic Competence: Table 5 provides the opinion of sampled respondents on the expectation from the informal sector. Found in the table are the frequencies and percentages (in parentheses).

According to results from table 5, most of the sampled respondents agreed that their company express delivery substitutes regular delivery options, 23(27.7%) agreed to a little extent, 30(36.14%) agreed to a moderate extent, 25(30.1%) agreed to a great extent and 10(12.04%) agreed to a very great extent meanwhile 05(6.02%) disagreed with no extent. The highest percentage of the respondents agreed that Prompt services of express delivery affects your company's financial performance, 21(25.3%) claimed that to a little extent, 20(24.1%) to a moderate extent, 0(0%) claimed that to a very great extent while 12(14.5%) claimed to a great extent and 21(25.3%) disagreed to no extent. The majority sample agreed to the statement "Does your company provide discounts or free shipping to its clients?" with 12(14.5%) disagreement to no extent. The greater majority of the respondents agreed with little extent, 13(15.7%) responded with very great extent, 0(0%) with a great extent and 20(24.1%) responded with moderate extent. All the respondents 83(100%) are for the fact that their company offers prompt delivery of consignment and in good conditions with 0(0%) disagreement to no extent, the greater majority of the respondents 40(40%) agreed with a moderate extent, 0(0%) responded with very great extent, 20(20%) agreed with a great extent while 30(37.5%) responded with little extent. Majority of the respondents 73(88%) are for the fact that Express delivery services have increased their financial performance with 10(12.0%) disagreement to no extent, the greater majority of the respondents 33(39.8%) agreed with a moderate extent, 06(7.2%) responded with very great extent, 17(20.5%) agreed with a great extent while 22(26.5%) responded with little extent. The majority sample agreed to the statement "Do discounts or free shipping provided by your company increase order incidence" with 12(14.5%) disagreement to no extent. The greater majority of the respondents agreed with little extent, 13(15.7%) responded with very great extent, 0(0%) with a great extent and 20(24.1%) responded with moderate extent.

Willingness to pay a Make-up cost:

Table 6: Respondents Opinion on Willingness to pay a Make-up cost

ITEMS	No extent	Little extent	Moderate extent	Great extent	Very great extent
This express delivery offers pricing strategies that differ from actual shipping charges, which depend mainly on product weight and volume	10(12.0%)	10(12.0%)	30(44.6%)	10(12.0%)	34(41.0%)
Customers are always ready to pay for express delivery service to ensure default free delivery of their consignments	30(44.6%)	40(48.2%)	13(15.7%)	0(0.0%)	0(0.0%)
The management grant me sufficient authority and powers to perform some tasks	05(6.02%)	23(27.7%)	30(36.14%)	25(30.1%)	10(12.04%)
For products of high value, that is, with low LCR, customers are more likely to pay for express delivery services on top of the normal delivery price.	21(25.3%)	42(50.6%)	20(24.1%)	00(0.0%)	0(0.0%)
For expensive products, for example, sometimes free shipping through express delivery operators is offered.	50(60.2%)	33(39.8%)	0(0%)	0(0%)	0(0%)

Customers compare transport cost with the price of the ordered product when choosing between regular and express delivery i.e., LCR (logistic cost ratio)	21(25.3%)	42(50.6%)	20(24.1%)	00(0.0%)	0(0.0%)
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Source: Composed by author (field data)

Results from table 6 reveal that 73(88.0%) of the respondents agreed that This express delivery offers pricing strategies that differ from actual shipping charges, which depend mainly on product weight and volume 10(12.0%) agreed to a great extent and 34(41.0%) agreed to a very great extent, 30(37.5%) of the respondents agreed with moderate extent while 30(44.6%) respondents who agreed with little extent and 10(12.0%) disagreed.

Results also reveal that 43(45.4%) of the respondents agreed that Customers are always ready to pay for express delivery service to ensure default free delivery of their consignments 0(0.0%) agreed to a great extent and 0(0.0%) agreed to a very great extent, 13(15.7%) of the respondents agreed with moderate extent while 13(15.7%) respondents who agreed with little extent are and 40(48.2%) disagreed.

The majority sample agreed to the statement “Does your company provide discounts or free shipping to its clients?” with 12(14.5%) disagreement to no extent. The greater majority of the respondents agreed with little extent, 13(15.7%) responded with very great extent, 0(0%) with a great extent and 20(24.1%) responded with moderate extent.

Majority of the respondents 83(100%) are for the fact that the management grant me sufficient authority and powers to perform some tasks with 05(6.02%) disagreement to no extent, the greater majority of the respondents 30(36.14%) agreed with a moderate extent, 10(12.04%) responded with very great extent, 25(30.1%) agreed with a great extent while 23(27.7%) responded with little extent

Majority of the respondents 73(88%) are for the fact that For products of high value, that is, with low LCR, customers are more likely to pay for express delivery services on top of the normal delivery price with 21(25.3%) disagreement to no extent, the greater majority of the respondents 42(50.6%) agreed with a little extent, 00(0.0%) responded with very great extent, 00(0.0%) agreed with a great extent while 20(24.1%) responded with moderate extent

The majority sample disagreed to the statement “For expensive products, for example, sometimes free shipping through express delivery operators is offered” with 50(60.2%) disagreement to no extent. The greater majority of the respondents 33(39.8%) agreed with little extent, 0(0%) responded with very great extent, 0(0%) with a great extent and 0(0%) responded with moderate extent.

Majority of the respondents 73(88%) are with Customers compare transport cost with the price of the ordered product when choosing between regular and express delivery i.e., LCR (logistic cost ratio) 21(25.3%) disagreement to no extent, the greater majority of the respondents 42(50.6%) agreed with a little extent, 00(0.0%) responded with very great extent, 00(0.0%) agreed with a great extent while 20(24.1%) responded with moderate extent

Lead-time Benefits

Table 7: Respondents Opinion Lead-time Benefits

ITEMS	No extent	Little extent	Moderate extent	Great extent	Very great extent
Your company is likely to use express delivery service for your cross border transactions	10(12.0%)	12(14.5%)	18(21.9%)	30(36.1%)	13(15.7%)
The cost of express delivery from transport agents increases with transportation distance, so, larger express delivery	0(0%)	20(25%)	31(38.7%)	19(23.8%)	10(12.5%)

costs to customers located farther away is charged.					
Express delivery services are attractive for low values of cost time savings, as the cost is then low as compared to the achieved lead-time reduction.	21(25.0%)	30(36.1%)	23(27.7%)	10(12.5%)	0(0.0%)
The willingness of customers to pay for express delivery depends on the magnitude of lead-time reduction measured in terms of the costs of time saving (CTS)	10(12.0%)	12(14.5%)	18(21.9%)	30(36.1%)	13(15.7%)
Customers' willingness to pay for express delivery increases for larger lead-time benefits.	40(48.2%)	19(22.9%)	14(16.9%)	10(12.0%)	0(0%)
Customers compare costs and benefits in their economic decisions concerning express delivery	23(27.4%)	12(14.5%)	39(47.0%)	10(12.0%)	4(4.8%)

Source: Composed by author (field data)

Results from table 6 reveal that 70(87.5%) of the respondents agreed that their company is likely to use express delivery service for cross-border transactions; 30(36.1%) agreed to a great extent; 13(15.7%)

agreed to a very great extent and 18(21.9%) of the respondents agreed with moderate extent while 12(15%) respondents who agreed with little extent are 10(12.0%) disagreed.

Results also reveal that all of the respondents agreed that the cost of express delivery from transport agents increases with transportation distance, so, larger express delivery costs to customers located farther away is charged 19(23.8%) agreed to a great extent and 10(12.5%) agreed to a very great extent, 31(38.7%) of the respondents agreed with moderate extent while 20(25%) respondents who agreed with little extent are and 0(0%) disagreed.

The majority sample agreed to the statement “Express delivery services are attractive for low values of cost time savings, as the cost is then low as compared to the achieved lead-time reduction” with 21(25.0%) disagreement to no extent. The greater majority of the respondents 30(36.1%) agreed with little extent, 0(0.0%) responded with very great extent, 10(12.5%) with a great extent and 23(27.7%) responded with moderate extent.

Majority of the respondents agreed that the willingness of customers to pay for express delivery depends on the magnitude of lead-time reduction measured in terms of the costs of time saving (CTS) 30(36.1%) agreed to a great extent and 13(15.7%) agreed to a very great extent, 18(21.9%) of the respondents agreed with moderate extent while 12(15%) respondents who agreed with little extent are and 10(12.0%) disagreed.

Results also reveal that majority of the respondents agreed that Customers’ willingness to pay for express delivery increases for larger lead-time benefits. 10(12.0%) agreed to a great extent and 0(0%) agreed to a very great extent, 14(16.9%) of the respondents agreed with moderate extent while 19(22.9%) respondents who agreed with little extent are and 40(48.2%) disagreed.

60(732.6%) of the respondents disagreed that Customers compare costs and benefits in their economic decisions concerning express delivery while 23(27.4%) respondents disagreed with no extent.

Cross-Border E-Commerce

Table 8: Respondents Opinion on Cross-Border E-Commerce

ITEMS	No extent	Little Extent	Moderate extent	Great extent	Very great extent
Your company is likely to use express delivery service for your cross border transactions	30(44.6%)	40(48.2%)	13(15.7%)	0(0.0%)	0(0.0%)
Based on your company's experience with express delivery service providers, your company would recommend it to other enterprises involved in cross border commerce	05(6.02%)	23(27.7%)	30(36.14%)	25(30.1%)	10(12.04%)
Your company dont intend to use any other express delivery operator apart from this one in the nearest future	21(25.3%)	42(50.6%)	20(24.1%)	00(0.0%)	0(0.0%)
Express delivery services have increased your financial performance and over all turnover	0(0%)	20(25%)	31(38.7%)	19(23.8%)	10(12.5%)

Express delivery services have increased the satisfaction of your customers	21(25.0%)	30(36.1%)	23(27.7%)	10(12.5%)	0(0.0%)
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Source: Composed by author (field data)

Results from table 7 reveal that 73(88.0%) of the respondents agreed that Your company is likely to use express delivery service for your cross-border transactions 10(12.0%) agreed to a great extent and 34(41.0%) agreed to a very great extent, 30(37.5%) of the respondents agreed with moderate extent while 30(44.6%) respondents who agreed with little extent and 10(12.0%) disagreed.

Results also reveal that 43(45.4%) of the respondents agreed that based on their company’s experience with express delivery service providers, they would recommend it to other enterprises involved in cross border commerce, 0(0.0%) agreed to a great extent and 0(0.0%) agreed to a very great extent, 13(15.7%) of the respondents agreed with moderate extent, while 13(15.7%) respondents agreed with little extent and 40(48.2%) disagreed.

The majority sample agreed to the statement “Your company does not intend to use any other express delivery operator apart from this one in the nearest future” with 12(14.5%) disagreement to no extent. The greater majority of the respondents agreed with little extent, 13(15.7%) responded with very great extent, 0(0%) with a great extent and 20(24.1%) responded with moderate extent.

Results also reveal that all of the respondents agreed that the express delivery services have increased your financial performance 19(23.8%) agreed to a great extent and 10(12.5%) agreed to a very great extent, 31(38.7%) of the respondents agreed with moderate extent while 20(25%) respondents who agreed with little extent are and 0(0%) disagreed.

The majority sample agreed to the statement “Express delivery services have increased the satisfaction of your customers” with 21(25.0%) disagreement to no extent. The greater majority of the respondents 30(36.1%) agreed with little extent, 0(0.0%) responded with very great extent, 10(12.5%) with a great extent and 23(27.7%) responded with moderate extent.

Majority of the respondents agreed that Express delivery services have increased your overall turnover 30(36.1%) agreed to a great extent and 13(15.7%) agreed to a very great extent, 18(21.9%) of the

respondents agreed with moderate extent while 12(15%) respondents who agreed with little extent are and 10(12.0%) disagreed

Construction of Indexes: Results of the Multiple Correspondence Analyses: Five indexes are constructed using the Multiple Correspondence Analysis given the categorical nature of the items used in constructing the indexes. Table 9 gives a summary synopsis of the 4 indexes computed using the MCA. More details in the Annex.

Table 9: Synopsis of variables indicators

Dimension	Principal inertia	percent	Cumul percent
<i>Logistic Competence (number of axes = 2)</i>			
Dim1	0.866006	59.9	59.9
Dim2	0.579008	40.1	100.0
Total	1.445014	100.0	
<i>Willingness To Pay A Mark-Up Cost (number of axes = 2)</i>			
Dim1	0.863651	72.1	72.1
Dim2	0.334497	27.9	100.0
Total	1.198148	100.0	
<i>Lead-Time Benefits index (number of axes = 3)</i>			
<i>Dim1</i>	0.929685	45.8	45.8
Dim2	0.765444	37.7	83.5
Dim3	0.333788	16.5	100.0
Total	2.028917	100.0	
<i>Cross-Border E-Commerce index (number of axes = 3)</i>			
Dim1	0.929685	45.8	70.5

Dim2	0.765444	28.5	99.0
Dim 3	0.0000231	1	100.0
Total	2.028917	100.0	

Source: Composed by author (field data)

Results from the MCA indicate that there are two axes for two indexes and three axes for two indexes constructed. Two dimensions with a total principal inertia of 0.579008 which contribution is estimated at 40.1 %, while the first dimension contributed 59.5 to the Logistic Competence index with 0.866006 principal inertia. Thus, Logistic Competence index is predicted from two dimensions.

Willingness to pay a mark-up cost index on its own is predicted from two dimensions with the first dimension contributing 72.1 % to the index and a principal inertia of 0.863651 and dimensions 2 contribute 27.9 %to the index respectively. The principal inertia for dimensions 2 is 0.334497. Three dimensions are used for the construction of Lead-Time Benefits index and cross-Border E-commerce.

Table 10: Descriptive statistics

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
LOGISTIC COMPETENCE, IN TERMS OF EXPRESS DELIVERY	83	.53630	2.480	3.6116	1.206730
WILLINGNESS TO PAY A MARK-UP COST FOR EXPRESS DELIVERY	83	1.0457	2.395	3.7603	1.310374
CROSS-BORDER E-COMMERCE	83	.65326	2.055	3.5289	1.225251
LEAD-TIME BENEFITS THROUGH EXPRESS DELIVERY SERVICES	83	.95432	2.058	3.9091	1.000000
Valid N (listwise)	83				

Source: Composed by author (field data)

Results from table 10 show that the mean index of logistic competence in terms of express delivery is with 3.6116 a standard deviation of 1.2067 which shows that there is moderate variability of the logical competence index values. Willingness to pay a mark-up cost for express delivery index values evolve between 1.045700 and 2.39500. Also, the Willingness to pay a mark-up cost for express delivery index mean is 3.76030 with a standard deviation of 1.310374, a minimum value of 1.045700 and a maximum value of 2.39500, Cross- Border E-commerce index mean is 3.528900 with a standard deviation of 1.225251 indicating there was a little variability of the Cross- Border E-commerce values. Finally, the mean value for Lead-time benefits through Express services index with a standard deviation of 1.00000.

Concerning the estimation of the model parameters, we conducted a correlation analysis in order to determine if there are strong correlations among independent variables which may be a sign of multicollinearity in the model. Table 11 presents the pairwise correlation matrix among variables

Table 11: Pairwise correlation matrix

This table shows that there is a problem of multicollinearity and this is because the values are correlated.

		Correlations			
		Willingness To Pay A Mark-Up Cost For Express Delivery	Logistic Competence	Lead-Time Benefits	Cross-Border E-Commerce
Willingness To Pay A Mark-Up Cost For Express Delivery	Pearson Correlation	1	.877**	.932**	.892**
Logistic Competence	Pearson Correlation	.877**	1	.929**	.892**
Lead-Time Benefits	Pearson Correlation	.932**	.929**	1	.870**
Cross-Border E-Commerce	Pearson Correlation	.892**	.892**	.870**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Composed by author (field data)

Results from table 11 reveal that there is a strong correlation among the independent variables (logistic competence, lead-time Benefits, Cross-Border E-commerce) as the correlation coefficients among these variables all exceed 0.6. A correlation greater than 0.75 is considered to be a “strong” correlation between

two variables while a weak correlation indicates that there is minimal relationship between the variables - as predicted - depending on how you stated the hypothesis. Thus, it was important to carry out a formal test of multicollinearity to ascertain that the model does not suffer from multicollinearity. Table 12 presents the results of the Variance Inflation Factors (VIF) test of multicollinearity.

Table 12: VIF results for multicollinearity

Variables	VIF	1/VIF(Tolerance)
Logistic Competence	0.877	1.140251
Lead time benefits	0.563	1.77619
Willingness to pay a mark-up cost	0.741	1.349527
Mean VIF	1.8105	

Source: Composed by author (field data)

Results from the VIF test show that none of the individual VIF coefficients is greater than the critical value of 10 as prescribed by Gujarati (2004) and the mean VIF is lower than 2.5 which implies that multicollinearity is not a problem in the model. Thus, the Ordinary Least square estimation can be used.

Tables 12 presents the result of the Ordinary Least Squares (OLS) estimation of the role of express delivery services on cross border e-commerce in Africa: case of the CEMAC sub region

Regression Analysis

Table 13: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.927 ^a	.870	.832	.395
a. Predictors: (Constant), Lead-Time Benefits, Willingness to pay a mark-up Cost, Logistic Competence				

Source: Composed by author (field data)

From model one which had an adjusted R square of 83%, R square of 87% and R figure of 93%. This indicated that 83% of the variation in Cross-Border E-Commerce is explained by Lead-Time Benefits, Willingness to Pay a Mark-Up Cost For Express Delivery, Logistic Competence.

Table 14: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.326	3	37.442	239.796	.000 ^b
	Residual	18.269	117	.156		
	Total	130.595	120			
a. Dependent Variable: Cross-Border E-Commerce						
b. Predictors: (Constant), Lead-Time Benefits, Willingness to pay a mark-up Cost, Logistic Competence						

Table 15: Coefficients

Model		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.033	.159		4.446	.000
	Lead-Time Benefits	.410	.086	.481	4.773	.000
	Willingness To Pay A Mark-Up Cost	.870	.091	.472	5.427	.000
	Logistic Competence	.186	.103	.387	4.102	.001

a. Dependent Variable: Cross-Border E-Commerce

Source: Composed by author (field data)

$Y=1.033 + 0.410LC + 0.870LTB+e+0.091WPMC$. The model is globally significant at 1% as the probability of Fischer statistic (Prob > F = 0.0000) is lower than 1%. Thus, Lead-Time Benefits, Willingness to Pay a Mark-Up Cost for Express Delivery, Logistic Competence significantly affect Cross-Border E-Commerce. Results from data analysis indicate that the coefficient of Lead-Time Benefits index is positive (0.410) which implies that there is a positive effect of Lead-Time Benefits and Cross-Border E-Commerce. An increase of the Lead-Time Benefits index by one unit will lead to an increase of Cross-Border E-Commerce index by 0.410 points everything else held constant. It should also be noted that these results are significant at 1% level of significance as the probability value (0.000) is less than 1%. Thus, there is a positive and significant effect of Lead-Time Benefits on Cross-Border E-Commerce and an increase in Lead-Time Benefits will lead to an increase in the Cross-Border E-Commerce in Africa. Similarly, Willingness to Pay a Mark-Up Cost for Express Delivery is positively related to Cross-Border E-Commerce given that the coefficient of Willingness to Pay a Mark-Up Cost for Express Delivery index is 0.870. This means, an increase in the by Willingness To Pay A Mark-Up Cost For Express Delivery one unit will result in about 0.870 points rise in the Cross-Border E-Commerce index ceteris paribus. However, it should be noted that this outcome is statistically significant as the probability value of the variable (0.000) is less than 0.1 (10%). Thus, there is positive significant effect

by Willingness to Pay a Mark-Up Cost for Express Delivery of in the Cross-Border E-Commerce in Africa.

The coefficient of logistic competence is positive (0.106) which implies that there is a positive relationship between logistic competence and the Cross-Border E-Commerce. An increase of logistic competence index by one unit will lead to a unit increase in the Cross-Border E-Commerce index by 1.86 points everything else held constant. It should also be noted that this result is significant at 1% level of significance as the probability value (0.001) is greater than 1%. Thus, there is a positive and significant effect of logistic competence on in Cross-Border E-Commerce in Africa.

Discussion of Findings: Results from the OLS estimation above indicate that there is a positive and significant effect of logistic competence in terms of express delivery on financial performance in cross border e-commerce in the CEMAC sub region. This result is in line with a priori expectation and permit to accept the first hypothesis. This is supported by Ho & Ong (2012) who indicated that not timeliness, but condition/accuracy of order was the strongest factor influencing customer satisfaction with courier service. However, due to the increasing expectation from customers, timeliness was perceived as an entry-level requirement for every company in the logistic industry.

In line with a priori expectation, results from data analysis revealed that there is a positive and significant effect of willingness to pay a mark-up cost for express delivery on higher priced products in cross border e-commerce in the CEMAC Sub Region. This is in line with the work of Rutkowski et al. (2011) who in their research showed that 98% of small and medium enterprises and 94% of large companies admitted that next-day delivery is the most important factor in choosing the courier service as well as the same-day delivery and delivery tracking so definitely making customers to pay for mark-up cost.

Also, Lead-time benefits through express delivery services positively influence the consideration for cross border customers in the CEMAC Sub Region. This is in line with the work of Xing et al. (2006) who compared delivery service between online retailer and multi-channel retailer, they put emphases on availability, timeliness, condition and return service.

3.2 Summary of Major findings

The purpose of the study was to examine how express delivery services enhance cross-border E-commerce in the CEMAC sub region. The study was guided by the following specific objectives; to

examine the extent to which Logistic competence, in terms of express delivery affects financial performance in cross-border e-commerce in the CEMAC Sub Region, to investigate the extent to which willingness to pay a mark-up cost for express delivery affect higher priced products in the CEMAC Sub Region and to examine Lead-time benefits through express delivery services influence the consideration by cross-border customers in the CEMAC Sub Region.

The study adopted descriptive statistics and causal research design due to their appropriateness in presentation specific state of affairs and description of the effect of express delivery services on cross border E-commerce in the CEMAC sub region. The target population of the study was 100 workers in logistic companies in the CEMAC sub region. The study relied on primary data collected by use of structured questionnaires. Collected data was coded into SPSS version 20 for analysis using the Cronbach alpha coefficient approach. The first-hand data were analysed both descriptively and inferentially. The Multiple Correspondence Analysis was used to construct the indexes. Later on, the Ordinary Least Square estimation technique was used to test the hypotheses of the study and the following results were recorded:

The first specific objective was to examine the extent to which logistic competence in terms of express delivery affects financial performance in cross border e-commerce. The study established that logistic competence in terms of express delivery significantly influenced financial performance in cross border e-commerce in the CEMAC sub region. This depicts that an increase in logistic competence in terms of express delivery leads to an increase in financial performance in cross border e-commerce in the CEMAC sub region. This result permitted the acceptance of the first hypothesis of the study which stated that Logistic competence, in terms of express delivery, positively affects financial performance in cross-border e-commerce in the CEMAC Sub Region.

The second specific objective was to assess the extent to which willingness to pay a mark-up cost for express delivery affects higher priced products in cross border e-commerce in the CEMAC Sub Region. In line with a priori expectation, results from data analysis revealed that there is a positive and significant effect of willingness to pay a mark-up cost for express delivery on higher priced products in cross border e-commerce in the CEMAC Sub Region. This asserts that willingness to pay a mark-up cost for express delivery and higher priced products in cross border e-commerce moves in the same direction that is, an increase in one variable leads to an increase in the other variable. This result permitted the acceptance of the second hypothesis of the study which stated that the willingness to pay a mark-up cost for express delivery increases for higher priced products in cross border e-commerce in the CEMAC Sub Region.

The third specific objective was to evaluate the extent to which Lead-time benefits through express delivery services affect the consideration for cross border customers in the CEMAC Sub Region. The study established that Lead-time benefits through express delivery services positively influence the consideration for cross border customers in the CEMAC Sub Region. There is a positive and significant effect of Lead-time benefits through express delivery services on the consideration for cross border customers in the CEMAC Sub Region which implies that the third hypothesis of the study is accepted.

CONCLUSION AND RECOMMENDATIONS

1. The main objective of the study was to investigate the extent to which express delivery services enhance cross-border E-commerce in the CEMAC sub region. Descriptive statistics with the aid of charts and tables of frequencies and percentages were used to analyse the data while the Multiple Correspondence Analysis was used to construct indexes. The Ordinary Least Squares estimation technique was used to test the hypotheses of the study. Results from this methodological approach indicate that there is a positive and significant effect of logistic competence in terms of express delivery on cross-border E-commerce in the CEMAC sub region.
2. From the theoretical point of view, the study concludes that there is a positive connection between flexible express delivery services and cross border e-commerce. The current investigations have been done in different economies which have diverse working environment from that in the CEMAC sub region and most in the whole, there has been a growing number of studies involving e-commerce logistics and express delivery, indicating that the two are interlinked. So it is still a valuable exploration task to investigate the service requirement of online shoppers for express delivery in the last mile and its role on cross border e commerce.
3. The study equally established that logistic competence in terms of express delivery significantly influences financial performance in cross border e-commerce in the CEMAC sub region. This depicts that there is an increase in logistic competence in terms of express delivery which leads to an increase in financial performance in cross border e-commerce in the CEMAC sub region. This result permitted the acceptance of the first hypothesis of the study which stated that Logistic competence, in terms of express delivery, positively affects financial performance in cross-border e-commerce in the CEMAC Sub Region. The study therefore concludes that logistic competence in terms of express delivery affects financial performance in cross border e-commerce in the CEMAC sub region.
4. It was also established from this study that willingness to pay a mark-up cost for express delivery has a positive and significant effect on cross-border E-commerce in the CEMAC sub region.
5. Finally, results show that there is a positive and significant effect of Lead-time benefits through express delivery services on cross-border E-commerce in the CEMAC sub region.

Conclusively, there is a significant effect of express delivery services on cross-border E-commerce in the CEMAC sub region.

Recommendations: Based on the findings of this study, the following recommendations can be formulated:

First and foremost, companies involved in cross border e-commerce ought to provide prompt services of express delivery to their customers and with this it will increase their company's financial performance. Also, they should offer prompt delivery of consignment and in good conditions, provide discounts or free shipping to their customers ones in a while and also these companies should offers pricing strategies that differ from actual shipping charges, which depend mainly on product weight and volume.

Secondly, emphasis should be place on LCR (logistic cost ratio) as customers compare transport cost with the price of the ordered product when choosing between regular and express delivery. For products of high value, that is, with low LCR, customers are more likely to pay for express delivery services on top of the normal delivery price, so the companies should put more emphases on LCR. The cost of express delivery from transport agents increases with transportation distance, so, larger express delivery costs to customers located farther away should be charged but not high.

Suggestions for Further Studies: The study recommends a replica of the study to be conducted among other zones apart from CEMAC and in the whole of Africa to establish the effect of the express delivery services on cross-border E-commerce.

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Lukong, Collette Kwatinyuy. The Role of Express Delivery Services in Cross Border E-Commerce in AFRICA: Case of the CEMAC Sub-Region. Logistics Management Master Thesis. Supervisor dr. J. Seiranov. – Vilnius: Mykolas Romeris University, 2021

ABSTRACT

This study is guided by specific objectives; the extent to which Logistic competence, in terms of express delivery, affects financial performance in cross-border e-commerce in the CEMAC Sub Region; the extent to which willingness to pay a mark-up cost for express delivery affect higher priced products in the CEMAC Sub Region and the influence of Lead-time benefits through express delivery services on the consideration by cross-border customers in the CEMAC Sub Region. International trade plays an increasingly important role in global economics and one growing part of the international economy has been electronic commerce enhanced by express delivery services. This research on The Role of Express Delivery Services in Cross Border E-Commerce in AFRICA: Case of the CEMAC Sub-Region, brings out a positive connection and main drive towards the development of Express Courier and e-commerce.

Keywords: express delivery services, cross border e-commerce, logistics management, Africa CEMAC sub-region

Lukong, Collette Kwatinyuy. Greitojo pristatymo paslaugų vaidmuo tarpvalstybinėje E-prekyboje AFRIKOJE: CEMAC subregiono atvejis. Logistikos vadybos magistro baigiamasis darbas. Darbo vadovas. dr. J. Seiranovas. – Vilnius: Mykolo Romerio universitetas, 2021 m

ANOTACIJA

Šis tyrimas vadovaujasi konkrečiais tikslais; kiek logistikos kompetencija, kalbant apie greitąjį pristatymą, turi įtakos finansiniams tarpvalstybinės elektroninės prekybos CEMAC subregione rezultatams; koku mastu pasiryžimas mokėti priemokas už greitąjį pristatymą turi įtakos didesnės kainos produktams CEMAC subregione ir greitojo pristatymo paslaugų teikiamos pristatymo laiko naudos įtaka tarptautinių klientų atlygiui CEMAC subregione. Tarptautinė prekyba vaidina vis svarbesnį vaidmenį pasaulio ekonomikoje, o viena auganti tarptautinės ekonomikos dalis buvo elektroninė prekyba, kurią sustiprino greitojo pristatymo paslaugos. Šis tyrimas dėl greitojo pristatymo paslaugų vaidmens tarpvalstybinėje el. prekyboje Afrikoje: CEMAC subregiono atvejis atskleidžia teigiamą ryšį ir pagrindinį postūmį plėtoti greituosius pristatymus ir el. prekybą.

Raktiniai žodžiai: greitojo pristatymo paslaugos, tarpvalstybinė elektroninė prekyba, logistikos valdymas, Afrikaos CEMAC subregionas.

SUMMARY

In summary, the study examined how express delivery services enhance cross-border E-commerce in the CEMAC sub region. The study was guided by the following specific objectives; to examine the extent to which Logistic competence, in terms of express delivery affects financial performance in cross-border e-commerce in the CEMAC Sub Region, to investigate the extent to which willingness to pay a mark-up cost for express delivery affect higher priced products in the CEMAC Sub Region and to examine Lead-time benefits through express delivery services influence the consideration by cross-border customers in the CEMAC Sub Region.

Nowadays, technological development has made buying very easy and effective through the internet and logistics business. Within this context, the importance and significance of new technologies in the supply chain framework should be highlighted, and they should be seen as a group of organizations and processes a product goes through from the starting source to the final product delivered to the customer (Schoenfeldt, 2008).

The usefulness of e-commerce to customers depends on how e-commerce simplifies and improves the effectiveness of their shopping. Reliability and speed of delivery are dominant factors, and we take express delivery as measure of the logistic competence perceived by customers. Just as e-commerce has been studied as a new technology in the technology acceptance model (Celik & Yilmaz, 2011), E-commerce equipped with express delivery services is viewed as the adoption of a new technology. The perceived logistic competence depends on customer characteristics like gross domestic product, on product characteristics such as price, weight, and volume, and on regional characteristics like lead-times and road transport costs. The logistic competence affects financial performance in terms of order size, order incidence, and repurchase rates. However it is still neglected by most E-shops in the African context.

ANNEX 1.

Synopsis of variables indicators

Summary								
Dimension	Singular Value	Inertia	Chi Square	Sig.	Proportion of Inertia		Confidence Singular Value	
					Accounted for	Cumulative	Standard Deviation	Correlation ²
1	.931	.866			.599	.599	.058	.291
2	.761	.579			.401	1.000	.102	
Total		1.445	47.685	.000 ^a	1.000	1.000		

a. 8 degrees of freedom

a										
Logistics Competence	Mass	Score in Dimension			Inertia	Contribution				
		1	2			Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		Total
						1	2	1	2	
no extent	.394	-.762	-.834	.421	.246	.360	.505	.495	1.000	
little extent	.333	-.369	1.188	.400	.049	.618	.106	.894	1.000	
moderate extent	.273	1.552	-.247	.624	.705	.022	.980	.020	1.000	
Active Total	1.000			1.445	1.000	1.000				

a. Symmetrical normalization

ANNEX 2.

QUESTIONNAIRE (ENGLISH and FRENCH)

I am **COLLETTE KWATINYUY LUKONG**, carrying out a research on the topic “**THE ROLE OF EXPRESS DELIVERY SERVICES ON CROSS BORDER E-COMMERCE IN AFRICA: CASE OF THE CEMAC SUB REGION**”. I will be very grateful if you can help me answer the following questions.

Provision for confidentiality: The information collected during this survey is strictly confidential under the terms of Law No. 91/023 of 16 December 1991 on censuses and statistical surveys.

Questionnaire number.....

SECTION A: Demographic information

1. Name of your company _____

2. Number of years you have been working in this company

Below 5 Years [], 6-10 Years [], More than 10 Years []

3. Your gender ? Male [], Female []

4. How old are you ? 20 – 30 years [] 31-40 [] 41-50[] 51 and above []

4. What is your highest level of education?

Ordinary Level [], Advanced Level [], Bachelor’s Degree [], Masters [], PhD [].

5. What is your position in this company?

Senior Management [] Supervisor []

6. What is your country of residence in the CEMAC zone?

Cameroon [] Chad [] Gabon [] Congo Brazzavile [] Equatorial Guinea[] Central Africa []
.....

SECTION B: LOGISTIC COMPETENCE, IN TERMS OF EXPRESS DELIVERY

7. Below are several statements on the effect of Logistic competence, in terms of express delivery on financial performance in cross-border e-commerce in the CEMAC Sub Region.

Kindly indicate the extent to which you agree with each of them as far as the influence of Logistic competence, in terms of express delivery on your level of financial performance in cross-border e-commerce in the CEMAC Sub Region. Use a scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent.

STATEMENT	1	2	3	4	5
Your company express delivery substitutes regular delivery options					
Prompt services of express delivery affects your company's financial performance					
Your company provide discounts or free shipping to its clients					
Your company offers prompt delivery of consignments and in good conditions					
Discounts or free shipping provided by your company increase order incidence					

8. In what other way does Logistic competence influenced your company's financial performance?

.....

SECTION C: WILLINGNESS TO PAY A MARK-UP COST FOR EXPRESS DELIVERY

9. Below are several statements on the effect of willingness to pay a mark-up cost for express delivery. Kindly indicate the extent to which you agree with each of them with regards to how willingness to pay a mark-up cost for express delivery has influenced higher priced products in the CEMAC Sub Region.

Use a scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent

STATEMENT	1	2	3	4	5
This express delivery offers pricing strategies that differ from actual shipping charges, which depend mainly on product weight and volume					
For expensive products, for example, sometimes free shipping through express delivery operators is offered.					
Customers compare transport cost with the price of the ordered product when choosing between regular and express delivery i.e. LCR (logistic cost ratio)					
For products of high value, that is, with low LCR, customers are more likely to pay for express delivery services on top of the normal delivery price.					
Customers are always ready to pay for express delivery service to ensure default free delivery of their consignements					

10. In what other way does willingness to pay a mark-up cost for express delivery influence higher priced products in the CEMAC Sub-Region?

.....

SECTION D: LEAD-TIME BENEFITS THROUGH EXPRESS DELIVERY SERVICES

11. Below are several statements on the effect of Lead-time benefits through express delivery services on the consideration by cross-border customers in the CEMAC Sub Region. Kindly indicate the extent to which you agree with each of them as far as Lead-time benefits through express delivery services has

influenced consideration by cross-border customers in the CEMAC Sub Region. Use a scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent.

STATEMENT	1	2	3	4	5
Express delivery services provide a great percentage of lead-time reduction compared to the lead-time of normal ground delivery.					
The cost of express delivery from transport agents increases with transportation distance, so, larger express delivery costs to customers located farther away is charged.					
Customers' willingness to pay for express delivery increases for larger lead-time benefits.					
Customers compare costs and benefits in their economic decisions concerning express delivery					
The willingness of customers to pay for express delivery depends on the magnitude of lead-time reduction measured in terms of the costs of time saving (CTS					
Express delivery services are attractive for low values of cost time savings, as the cost is then low as compared to the achieved lead-time reduction.					

12. In what other way does Lead-time benefits through express delivery services influence your consideration on cross-border Ecommerce in the CEMAC Sub Region?

.....

SECTION E: CROSS-BORDER E-COMMERCE

13. Below are several statements on cross-border E-commerce. Kindly indicate the extent to which you agree with each of them in as far as cross-border E-commerce is concerned. Use a scale of 1-5 where 1= No Extent, 2= Little Extent, 3= Moderate Extent, 4 = Great Extent and 5 = Very Great Extent.

STATEMENT	1	2	3	4	5
Your company is likely to use express delivery service for your cross border transactions					
Based on your company's experience with express delivery service providers, your company would recommend it to other enterprises involved in cross border commerce					
Your company does not intend to use any other express delivery operator apart from this one in the nearest future					
Express delivery services have increased your financial performance and overall turnover.					
Express delivery services have increased the satisfaction of your customers					

Thanks for responding.....

QUESTIONNAIRE (FRENCH)

Je suis **COLLETTE KWATINYUY LUKONG**, réalisant une recherche sur le thème « **LE ROLE DES SERVICES DE LIVRAISON EXPRESS SUR LE E-COMMERCE TRANSFRONTALIER EN AFRIQUE : CAS DE LA SOUS REGION CEMAC**. Je vous serai très reconnaissant si vous pouvez m'aider à répondre aux questions suivantes.

Disposition de confidentialité : Les informations recueillies lors de cette enquête sont strictement confidentielles au sens de la loi n°91/023 du 16 décembre 1991 relative aux recensements et enquêtes statistiques

Numéro du questionnaire

.....

SECTION A : INFORMATIONS DÉMOGRAPHIQUES

1. Nom de votre entreprise _____

2. Nombre d'années que vous travaillez dans cette entreprise

Moins de 5 ans [], 6-10 ans [], plus de 10 ans []

3. Votre sexe ? Homme Femme [] []

4. Quel âge as-tu ? 20 – 30 ans [] 31-40 [] 41-50[] 51 ans et plus[]

4. Quel est votre plus haut niveau d'éducation ?

Niveau ordinaire [], niveau avancé [], licence [], maîtrise [], doctorat [].

5. Quelle est votre position dans cette entreprise ?

Cadre supérieur [] Superviseur []

6. Quel est votre pays de résidence dans la zone CEMAC ?

Cameroun [] Tchad [] Gabon [] Congo Brazzavile [] Guinée équatoriale[] Afrique centrale []

SECTION B : COMPETENCE LOGISTIQUE, EN TERMES DE LIVRAISON EXPRESS

Vous trouverez ci-dessous plusieurs déclarations sur l'effet de la compétence logistique, en termes de livraison express, sur la performance financière du commerce électronique transfrontalier dans la sous-région CEMAC.

Veillez indiquer dans quelle mesure vous êtes d'accord avec chacun d'eux en ce qui concerne l'influence de la compétence Logistique, en termes de livraison express, sur votre niveau de performance financière dans le commerce électronique transfrontalier dans la Sous-Région CEMAC. Utilisez une échelle de 1 à 5 où 1= aucune étendue, 2= peu d'étendue, 3= étendue modérée, 4 = grande étendue et 5 = très grande étendue.

DÉCLARATION	1	2	3	4	5
La livraison express de votre entreprise remplace les options de livraison habituelles					

Les services rapides de livraison express affectent la performance financière de votre entreprise					
Votre entreprise offre-t-elle des remises ou la livraison gratuite à ses clients					
Votre entreprise propose une livraison rapide des envois et dans de bonnes conditions					
Les remises ou la livraison gratuite offerte par votre entreprise augmentent-elles l'incidence des commandes					

De quelle autre manière la compétence Logistique, en termes de livraison express, a-t-elle influencé la performance financière de votre entreprise ?

SECTION C : VOLONTÉ DE PAYER UN COT DE MAJORATION POUR LA LIVRAISON EXPRESS

Vous trouverez ci-dessous plusieurs déclarations sur l'effet de la volonté de payer un coût majoré pour la livraison express. Veuillez indiquer dans quelle mesure vous êtes d'accord avec chacun d'entre eux en ce qui concerne la manière dont la volonté de payer un coût majoré pour la livraison express a influencé les produits à prix plus élevé dans la sous-région de la CEMAC. Utilisez une échelle de 1 à 5 où 1= aucune étendue, 2= peu d'étendue, 3= étendue modérée, 4 = grande étendue et 5 = très grande étendue

DÉCLARATION	1	2	3	4	5
Cette livraison express propose des stratégies tarifaires différentes des frais d'expédition réels, qui dépendent principalement du poids et du volume du produit.					
Pour les produits coûteux, par exemple, la livraison gratuite via des opérateurs de livraison express est parfois proposée					

DÉCLARATION	1	2	3	4	5
Les clients comparent le coût du transport avec le prix du produit commandé lors du choix entre la livraison régulière et express, c'est-à-dire LCR (ratio de coût logistique)					
Pour les produits de grande valeur, c'est-à-dire avec un faible LCR, les clients sont plus susceptibles de payer pour des services de livraison express en plus du prix de livraison normal.					
Les clients sont toujours prêts à payer pour le service de livraison express pour assurer la livraison gratuite par défaut de leurs envois					

De quelles autres manières la volonté de payer un coût majoré pour la livraison express a-t-elle influencé les produits plus chers dans la sous-région CEMAC ?

SECTION D : AVANTAGES DE DÉLAIS GRÂCE À DES SERVICES DE LIVRAISON EXPRESS

Vous trouverez ci-dessous plusieurs déclarations sur l'effet des avantages de délai grâce aux services de livraison express sur la prise en compte par les clients transfrontaliers de la sous-région CEMAC. Veuillez indiquer dans quelle mesure vous êtes d'accord avec chacun d'entre eux en ce qui concerne les avantages de délai grâce aux services de livraison express a influencé la considération par les clients transfrontaliers dans la sous-région CEMAC. Utilisez une échelle de 1 à 5 où 1= aucune étendue, 2= petite étendue, 3= étendue modérée, 4 = grande étendue et 5 = très grande étendue.

DÉCLARATION	1	2	3	4	5
Les services de livraison express offrent un grand pourcentage de réduction des délais par rapport au délai de livraison terrestre normal					

DÉCLARATION	1	2	3	4	5
Le coût de la livraison express des agents de transport augmente avec la distance de transport, de sorte que des frais de livraison express plus importants pour les clients situés plus loin sont facturés.					
La volonté des clients de payer pour la livraison express augmente pour des avantages de délai plus importants.					
Les clients comparent les coûts et les avantages dans leurs décisions économiques concernant la livraison express					
Le consentement des clients à payer pour la livraison express dépend de l'ampleur de la réduction des délais mesurée en termes de coûts de gain de temps (CTS					
Les services de livraison express sont intéressants pour de faibles valeurs de gain de temps, car le coût est alors faible par rapport à la réduction du délai de livraison obtenue.					

De quelles autres manières les avantages des délais de livraison grâce aux services de livraison express ont-ils influencé votre réflexion sur le commerce électronique transfrontalier dans la sous-région CEMAC ?

SECTION E : E-COMMERCE TRANSFRONTALIER

Vous trouverez ci-dessous plusieurs déclarations sur le commerce électronique transfrontalier. Veuillez indiquer dans quelle mesure vous êtes d'accord avec chacun d'eux en ce qui concerne le commerce électronique transfrontalier. Utilisez une échelle de 1 à 5 où 1= aucune étendue, 2= petite étendue, 3= étendue modérée, 4 = grande étendue et 5 = très grande étendue.

DÉCLARATION	1	2	3	4	5

Votre entreprise est susceptible d'utiliser le service de livraison express pour vos transactions transfrontalières					
Sur la base de l'expérience de votre entreprise avec les prestataires de services de livraison express, votre entreprise le recommanderait à d'autres entreprises impliquées dans le commerce transfrontalier					
Votre entreprise n'a pas l'intention d'utiliser un autre opérateur de livraison express en dehors de celui-ci dans un avenir proche					
Les services de livraison express ont augmenté vos performances financières et votre chiffre d'affaires global.					
Les services de livraison express ont augmenté la satisfaction de vos clients					

Merci d'avoir répondu.....

ANNEX 3.

ACADEMIC INTERGRITY PLEDGE

2021 - 12 – 13

Vilnius

I, Mykolas Romeris University,

Faculty of Public Governance and Business. Institute of Business and Economics:

Logistics Management,

Collette Kwatinyuy Lukong,

hereby confirm that this academic paper, Master’s Final Thesis

“THE ROLE OF EXPRESS DELIVERY SERVICES IN CROSS BORDER E-COMMERCE IN AFRICA: CASE OF THE CEMAC SUB REGION”:

1. Has been accomplished independently by me and in good faith;
2. Has never been submitted and defended in any other educational institution in Lithuania or abroad;
3. Is written in accordance with principles of academic writing and being familiar with methodologic guidelines for academic papers.

I am aware of the fact that in case of breaching the principle of fair competition – plagiarism – a student can be expelled from the University for the gross breach of academic discipline.

Signature

Name. Surname