

## THE IMPACT OF ECOMMERCE ADOPTION ON LOGISTICS COMPANIES

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### ABSTRACT

E-commerce adoption is an integral part of a country's economic development and modern day technology. SME's are competing effectively and efficiently in both domestic and international markets through e-commerce. This study aimed to find out the impact of e-commerce on logistics and find out the common general problems and countermeasures of Jumia Ghana Logistics Company. 110 questionnaires were given to both employees and customers of the company using simple random techniques. The data were analyzed quantitatively with SPSS and excel. The findings categorized e-commerce adoption challenges into three factors; 1) Business Factors, 2) Management Factors and 3) External Factors. Some of the environmental factors were; accurate address system, government support and policies, quality transport system etc. the business related factors were; cost of implications, technological equipment, business ability to provide trust and privacy on transactions, business partner readiness etc. the study also revealed that management level of education, owners or shareholders' commitment, e-commerce literacy rate were the most managerial factors. The study moreover revealed positive correlations between e-commerce and logistics. It was recommended that more effort should be put forth to develop e-commerce systems to promote logistics operations of the Company. Also, the government should provide the necessary legal and environmental support to strengthen e-commerce logistics development among business in the country.

**Keywords:** e-commerce, logistics, Jumia Ghana Logistic Company.

### INTRODUCTION

E-commerce is one of the buzzwords in the recent years. Laudon & Traver (2011) state, E-commerce technology, is different and more influential from other technologies that we have seen in the past century. E-commerce technology develops quickly with the development of Internet and people can enjoy convenient life by using e-commerce. But today many of the new e-commerce companies have failed or are struggling for economic survival, and the failure for many companies in e-commerce can be in part accounted by the neglecting of logistics and supply chain management. E-commerce has also become associated with solutions and tools such as portals, e-marketplaces, e-auctions or virtual inventory. Logistics and supply chain operations have been affected irrevocably by e-commerce solutions. But the possible major changes could take a lot longer to happen. For companies, the overall goal of e-commerce includes (Yang, 2012): to help companies develop global sales network and logistics infrastructure which support efficient online order fulfillment; to provide enterprises with information and data of various business activities (i.e. online order documentation), production and sales information to solve the difficult problem of collection; to reduce market entry link that help companies open up the market to minimize the circulation of goods; to reduce business cost of sales and minimize the transaction costs of goods; both for trading and online commodity trading to facilitate negotiations; supports online purchasing

including secure online payment system; to provide the most reliable quality assurance; to provide customers the most convenient means for retrieval (Yang, 2012).

In the early days, low prices and convenience were the driving forces for e-commerce, but today, e-commerce retailers (also known as e-tailers) are catering to every kind of shopping experience, service and product (Charlesworth, 2011). Presently, it remains the case that as the gross revenue earned from e-commerce is increasing year on year from nascence to critical mass, most transport service providers (TSP) or retailers, particularly multi- and Omni channel retailers, are only starting to realize what this will bring to their retail logistics and physical distribution network infrastructures and what role they can have within. So much as, today e-commerce has become a complementary retail touch point for the traditional brick-and-mortar retail. The new e-commerce technologies have the potential to offer greater efficiencies and transparency and have led to significant changes within supply chains, with alternative ways of doing business, improved visibility and changes to distribution channels, including new intermediaries (Laudon & Traver 2011). Ecommerce saves time because customer can shop 24 hours a day and throughout the year, and at any place in the comfort of their homes. So, through the freedom of choice customers via the Internet can fulfill all their business through a network of investment services and stock trading, consulting and reservations of tickets and Hotel reservations etc. Electronic experiments allow customers to exchange experiences and views among themselves (Charlesworth, 2011).

E-commerce logistics can be analysis in various ways, including a case study approach, multiple discriminant analysis (Saprikis, 2013), interpretive structural modeling (Toktas-Palut et al., 2014), an investment model, etc. Nonetheless, in market surveys it is usually hard to obtain a large sample size to reflect overall consumer expectations. Furthermore, big data analytics in the supply chain can be employed to provide up-to-date and meaningful information (Kache and Seuring, 2017) and create value-added operations. The scarcity has an effect on commercial activity as the 21st century progresses (Bell et al., 2012). Managers need to consider the shortage of resources as a critical supply chain risk issue for the future. The growth in per capital income and increase purchasing power will continue to spear direct pressure on limited resources. This type of growth if not managed, will affect demand and supply imbalance that leads to disruptions. Ghana seems to experience growth challenges because resources are not adequate to support the growth (Bell et al., 2012).

In this procedure, multiple enterprises within a limited market collaboratively plan, practice, and manage the flow of goods, services, and information along the value system in the same way to increase customer-perceived value and optimizes the efficiency of the chain (Oti, 2013). Supply Chain Management (SCM) is also based on customer demand, providing a common focus on the related products or services, enterprise information resources, software products based on Internet technology as a tool to manage, the entire channel which all relevant processes to maximize net value added, and improve the efficiency and effectiveness of a platform (Chen, 2016).

Ecommerce involves much more than electronically mediated financial transactions between customers and companies. Many commentators talk about e-commerce as all electronically mediated transactions between and company and any third party it deals with. It also requires the digital goods for caring out their transactions. Digital goods are goods that can be delivered over a digital network (Laudon and Laudon, 2013). The e-commerce market continues to evolve at a mind-boggling pace, which indicates that companies in this space must adapt to the latest technological advancements and innovation strategies to stay ahead of

the curve.

E-commerce dates back to the invention of the internet. Since then thousands of businesses have taken up residence on websites. The ability to use this technology appeared in the late 1970s and allowed organizations to send commercial documentation electronically. The relationship between logistics performance and E-commerce customer loyalty is much closer in E-commerce business than in any other industries (Ramanathan 2010). E-commerce orders are always small but the shipment of these orders is rather complex, so the scope requirement for the role of logistics is much larger, and the logistics service is directly provided to the final customer who always has high expectation on the logistics service level (Ramanathan, George and Ramanathan, 2014).

Many studies show that customers consider the logistics performance as an important factor of E-commerce, especially the last mile distribution. And company's logistics capacity has significant and positive effects on logistics performance in E-commerce market. Future logistics model should focus on controlling the last mile distribution service quality (Charlesworth, 2011). According to all mentioned above, the main purpose of this study is to investigate e-commerce challenges and countermeasures on supply chain in JUMIA Ghana.

## **METHOD**

### **Area of study**

Study area simply refers to the area where the research took place. This was conducted to know the impact of jumia Ghana adopting ecommerce. Jumia is the leading Internet platform in Africa, which offers easy online and mobile shopping, travel, classifieds and services platform. By providing technology to connect customers to businesses, Jumia simplifies life with easy-to-use applications and smart solutions across the continent's Internet sector. Jumia is the parent group of nine companies in more than 30 African countries. Its network of companies includes Jumia, Jumia Market, Jumia Travel, Jumia Food, Jumia Deals, Jumia House, Jumia Jobs, Jumia Car and Jumia Services. Jumia Services provides a complete e-commerce fulfillment platform through a network of our own-managed and third party warehousing, order processing, and logistics service providers.

### **Population**

The study population included staff of Jumia Ghana in Accra, particularly focused on management, employees and users of Jumia Service (Ghana) more specifically on the people who have adequate knowledge on the subject matter. In all, the author targets a total population of 120 people.

### **Sampling Procedure and Sample Size**

Sampling refers to the systematic selection of a limited number of elements out of a theoretically specified population of elements. An important aspect of any research is the sample selection process and strategy (Carenza, 2011). Marshall and Rossman (2011) suggested the use of a sampling method that was purposive. Purposive sampling or judgmental sampling is a non-probability sampling that, in essence, allows a researcher to select cases that seems to be best suited to answer the research questions. The study used the purposive sampling method to select a sample size of hundred (100) respondents, which comprise of management and employees of Jumia Service. This sample size was chosen because in conducting a research study, it is practically impossible, time-consuming and too expensive to test every individual in the entire population. Therefore smaller chunks of a unit sample are chosen to represent the relevant attributes of the whole units.

**Research Design**

Decision taken as to how primary data can be collected is referred to as research design. The main research design is the survey method. This research utilizes the survey method for primary and secondary data collection. Primary data was obtained through the use of questionnaires to get first-hand information from staff of Jumia Ghana. Secondary data was obtained from existing materials that were relevant to this study. Information was obtained from sources such as journals, magazines, books, scholarly articles, documentations and the Internet.

**Research Instrument**

As mentioned earlier, this research adopted a real list method and thus made use of research instrument such as questionnaires, and interviews.

**Interviews**

An interview is the method of collecting data based on the skillful act of asking questions relevant to a subject of investigation and recording answers. This will be achieved by the use of open-ended questions so as to obtain as much information as possible. Basically, the interviews included discussions on the impact of ecommerce adoption on logistics companies. Respondents were told that their responses would be kept confidential. This was done to ensure that the respondents candidly expressed their views.

**Sources of Data**

The study used both primary and secondary data. Primary data was obtained through the use of questionnaires to get first-hand information from staff of Jumia Ghana. Secondary data was obtained from existing materials that were relevant to this study. Information was obtained from sources such as journals, magazines, books, scholarly articles, documentations and the Internet

**Data Collection Instrument**

Questionnaires were the main instruments to collect data from the respondents. A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Close-ended questionnaire type was adopted since it is easy to quantifiable answers, relatively easy to analyse and can reach a large number of people relatively easily and economically. It was close ended type of questions items to seek information. Data was collected using two set of questionnaires. One set for employees of Jumia Ghana and another set for customers. For questionnaire set (I), it had 3 parts A, B and C. part A consists of background information on staff of Jumia Ghana Company. The section B was about the impact of e-commerce adoption on Jumia and there were 13 items. Section was about e-commerce adoption challenges of Jumia Ghana with three sub categorical variables and section D has questions on impact of ecommerce adoption on Jumia Ghana Company. The second set of questionnaires was designed for the customers with two sections. The first part was background of the respondents and the second part was about their experience with Jumia e-commerce platform.

**Data Analysis**

The raw data obtained from the field is useless unless it is transformed into information for the purpose of decision-making. Data analysis involves reducing the raw data into a manageable size, developing summaries and applying statistical inferences. With regards to this study, the data was edited to detect and correct possible errors and omissions that were likely to occur, to ensure consistency across respondents. The answered questionnaires were

coded and captured using SPSS (Version 21) to generate tables and charts. The tables and charts were interpreted descriptively (qualitative analysis).

## STUDY RESULTS

This section presents the findings from the data. The data were analyzed in accordance with the research objectives. The main findings were summarized and discussed.

### 1.1 Background information of respondents

The author obtained some background information of the employees Jumia Ghana and other customers to be more familiar and get enough insight of the respondents dealing with.

**Table 1.1 gender**

Items	Frequency	Percent
Male	69	62.7
Female	41	37.3
<b>Total</b>	<b>110</b>	<b>100.0</b>

Table 1.1 shows the gender position of the overall respondents consisting of employees of Jumia Ghana Logistics and customers of the company. It was found that the total mean of the gender statistics was 1.37 indicating more males (male=1, female=0).

**Table 1.2 highest qualification**

Education	Frequency	Percent
High school	20	18.2
University	54	49.1
Postgraduates	21	19.1
Non-formal education	15	13.6
<b>Total</b>	<b>110</b>	<b>100.0</b>

In table 4.2, the mean of the highest educational qualification of the respondents was 2.2818. (University=2, 49.1%). Moreover, the postgraduates were 21, which represent 19.1% and least were high school graduates constituting 18.2% of the total respondents.

**Table 1.3 income range**

Income range	Frequency	Percent
Below \$ 100	12	24.0
\$ 101- \$200	15	30.0
\$201-\$ 300	22	44.0
Above 300	1	2.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

The income ranges of the staff are displayed in table 4.3. From the data, the highest income among the respondents were \$201-\$300 which represents 44%. This was followed by \$101-\$200 representing 30%. The information revealed that least group of employees receives income of \$300 and above.

**Table 1.4 department**

<b>Department</b>	<b>Frequency</b>	<b>Percent</b>
Sales/customer service	9	18.0
Financial section	12	34.0
IT section	17	34.0
Transport	8	16.0
Product/warehouse	4	8.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

In table 4.4, the various departments, which the respondents were chosen from, are shown. Majority of the respondents were from the IT section constituting 34%. Again, 12 of the respondents were from the financial department, 9 from sales section, 8 of transport and 8% were working in the product or warehouse department.

**Table 1.5 years of service (experience)**

<b>Years of service</b>	<b>Frequency</b>	<b>Percent</b>
Below 5 years	8	16.0
6-10 years	14	28.0
11-15 years	22	44.0
Above 15 years	6	12.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

The researcher delved in finding the number of years of service employees usually spend in Jumia Ghana Limited. 22 out of the 50 members of staff have work from 11-15 years. Majority was within 6-10 years. 12% had been in the organization for more than 15 years whilst 16% are below 5 years.

### 3.1.1 Reliability statistics of the factor variables

Cronbach's alpha was used to determine the internal reliability of the questionnaire used in this study. The questionnaire was subjected to a scale test and reliability was assessed based on the Cronbach's Alpha from the test items. Various authors like Fiel (2008) and Pallant (2011) recommends an alpha coefficient of 0.7 and above to infer sufficient internal consistency (reliability). SPSS tool was used to carry out the reliability test to determine the reliability of the questionnaires.

**Table 1.6 Reliability and mean of the variable constructs**

<b>Item</b>	<b>Cronbach's Alpha</b>	<b>Number of items</b>
Managerial factors	0.78	
Business factors	0.82	
External factors	0.96	
Impact items	0.91	
E-commerce variables	0.836	
<b>Logistics items</b>	<b>0.75</b>	



The researcher established the reliability of the data before it was used for analysis. After screening and making removing uncompleted questionnaire papers, Cronbach's Alpha of the e-commerce adoption factors were identified using SPSS. From table 4.6, the reliability coefficients for managerial factors were 0.78, business factors were 0.82, external factors were 0.96 and the impact factor variables were 0.91. From the statistics, all the factor variables obtained a value higher than 0.70 (70%), which means the items were highly reliable.

The study reported the validity of the research questions using KMO test. The results of the test are shown below.

Measurement of Kaiser-Meyer-Olkin		.785
Bartlett Test of Sphericity	Appx.Chi-square	592.024
	df	120
	Sig.	.000

### 1.2 To find out the impact of e-commerce on Jumia Ghana logistics company.

Among the research objectives was to find out the impact of e-commerce adoption on Jumia Ghana Company. Among the findings are presented in the figures as follows;

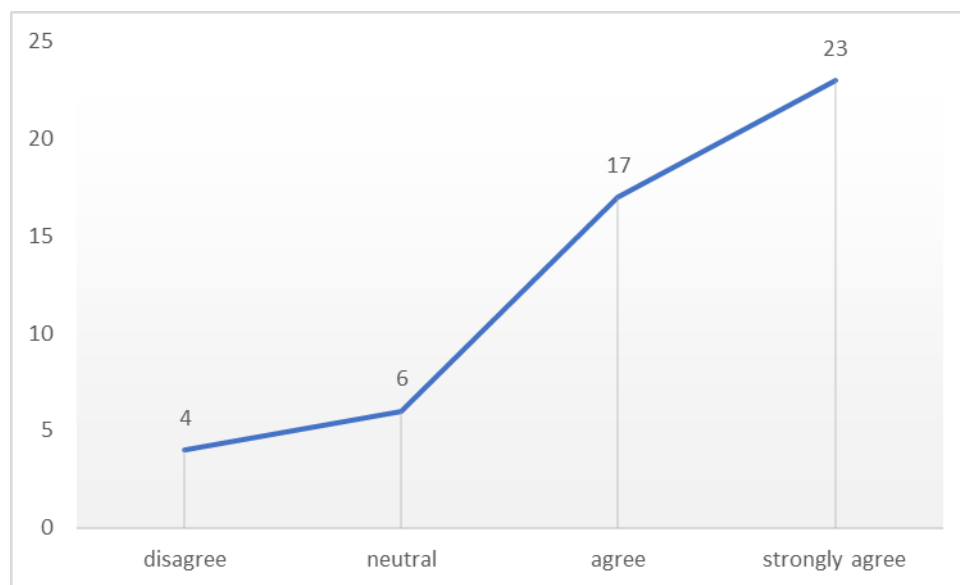


Figure 1.1 Access to variety of commodities

From the figure 1.1, out of the 50 employees, 23 of them strongly agreed that e-commerce adoption will enable consumers have access to different kinds of goods and services to choose from. 17 of the respondents who represent 34% also supported this statement. 4 of the respondents forming 8% disagreed whilst 6 of the respondents were neutral.

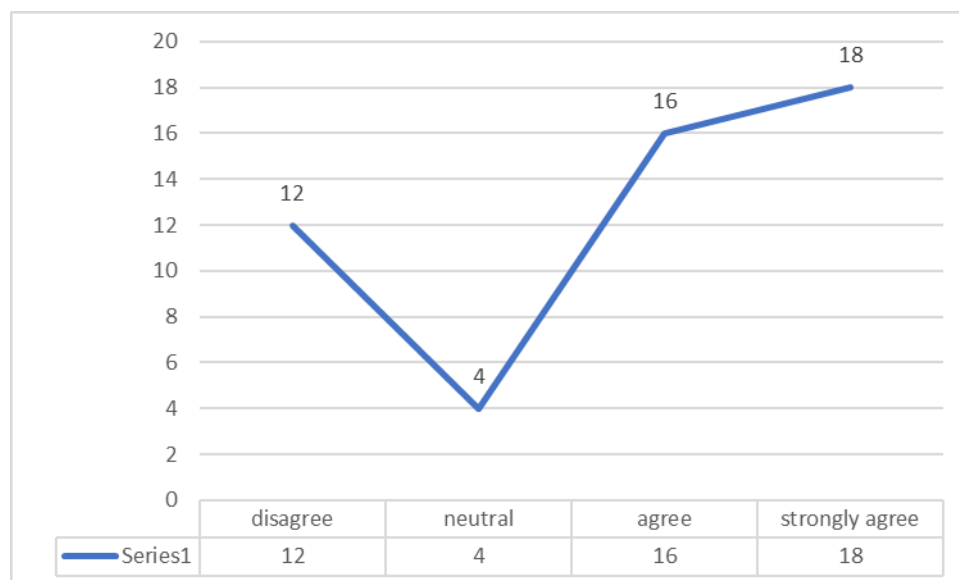


Figure 1.2 increase in sales

Another significant impact of ecommerce adoption on Jumia Ghana Company was sales increment as a result of large market the company was expose to due ecommerce platform. In figure 1.2, out of the 50 employees who responded to the questionnaires, 18 strongly agreed, 16 agreed and 12 of them disagreed. Also none of the respondents totally disagreed and only 4 employees who represents 8% were remained neutral.

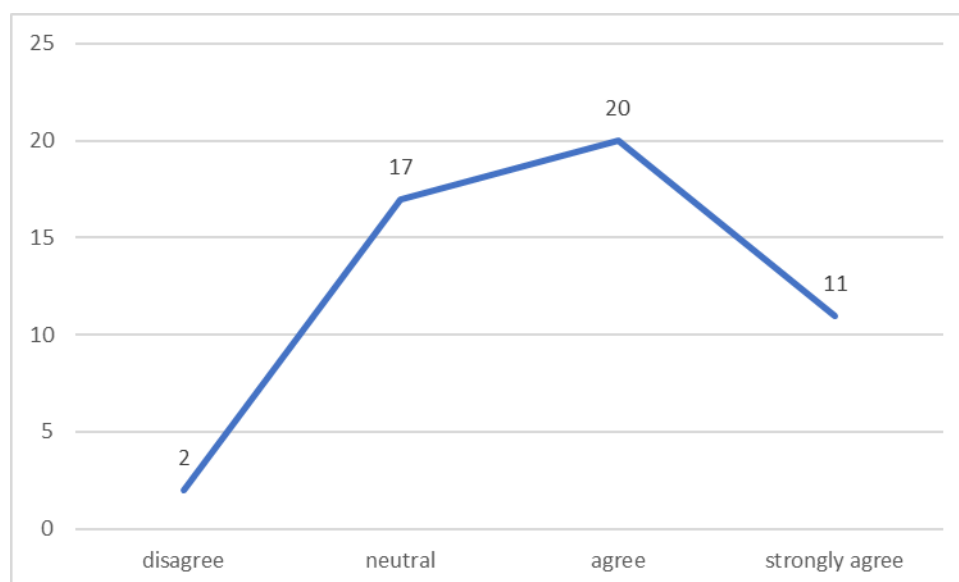


Figure 1.3 online promotions

Figure 1.3 illustrates the extent at which e-commerce adoption has helped growth in Jumial Logistic Company. It was found that online promotions has gone up and 11 and 20 of the respondents representing 22% and 40% respectfully strongly agreed and agreed. However, 2 of the respondents, which represent 4%, disagreed and 34% maintained neutral.



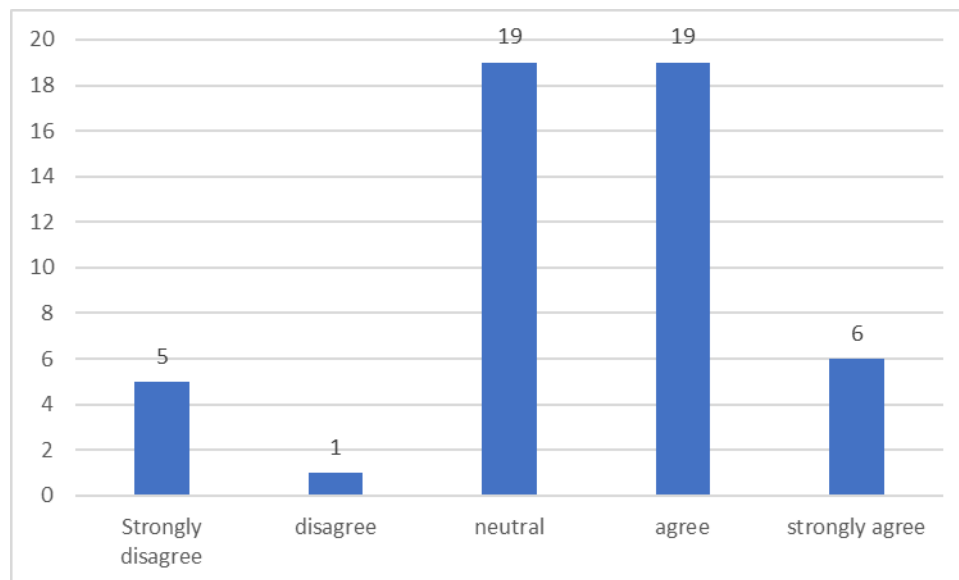


Figure 1.4 Convenience

From the graph, 6 of the respondents totally agreed that e-commerce will be a convenient form of marketing. 19 of the respondents also agreed whilst 19 remained neutral. 10% and 2% of the respondents totally disagreed and disagreed accordingly. The adoption of e-commerce makes it more convenient for consumers to be at home and buy or order products or service from Jumia Ghana store. This reduces the time spent on shopping and other carriage duties associated with it.

### 1.3 Correlation matrix for e-commerce and logistic relationship

The study observed the correlation relationship between e-commerce variables and logistics variables. The overall mean and standard deviation of the results is reported in table 4.7. E-commerce variables were website for corporation, product or services, customer support and order process service whilst the logistics items were business operations, market factors and competitive advantage. A Pearson Product Moment Correlation was significant at ( $p > 0.05$ , 1-tailed and  $p > 0.01$ , 2-tailed). The table shows a positive correlation between e-commerce and logistics.

Table 1.7 correlation matrix

Items	Mean	SD	1	2	3	4	5	6
<b>Product</b>	15.50	1.74087						
<b>Customer</b>	20.26	7.95603	.850**					
<b>Processing</b>	15.38	1.94716	.750**	.672**				
<b>Website</b>	13.92	2.10771	.790*	-.008	.360**			
<b>Business operations</b>	19.12	2.02676	.826*	-.225	.293*	-.084		
<b>Market factors</b>	14.26	1.90392	.776**	.035*	.022	.812*	.039	
<b>Competitive</b>	14.56	3.59796	.650**	.653*	.019*	.950**	.371**	.550**

\*. Correlation is significant at the 0.05 level (2-tailed).

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

#### 1.4 Factors that hinder e-commerce adoption by Jumia Ghana Logistics

The study aimed to find out the factors that hinder Jumia Ghana Logistic Limited in adopting e-commerce. The researcher based on the reviewed literature and grouped these variables into three categories. The factors were grouped into business related factors, management level factors and environmental or external factors. The results of the findings are presented in the chart below

##### Managerial factors

The managerial related factors that affect Jumia Ghana Logistics are described in the figures 1.8 to 1.10. The averages mean of the management factors were 4.24 meaning the respondents agreed to the existence of management characteristics obstacles. Ecommerce adoption. 18 of the respondents strongly agreed, 26 of the respondents agreed and 6 of the respondents were uncertain on the statement.

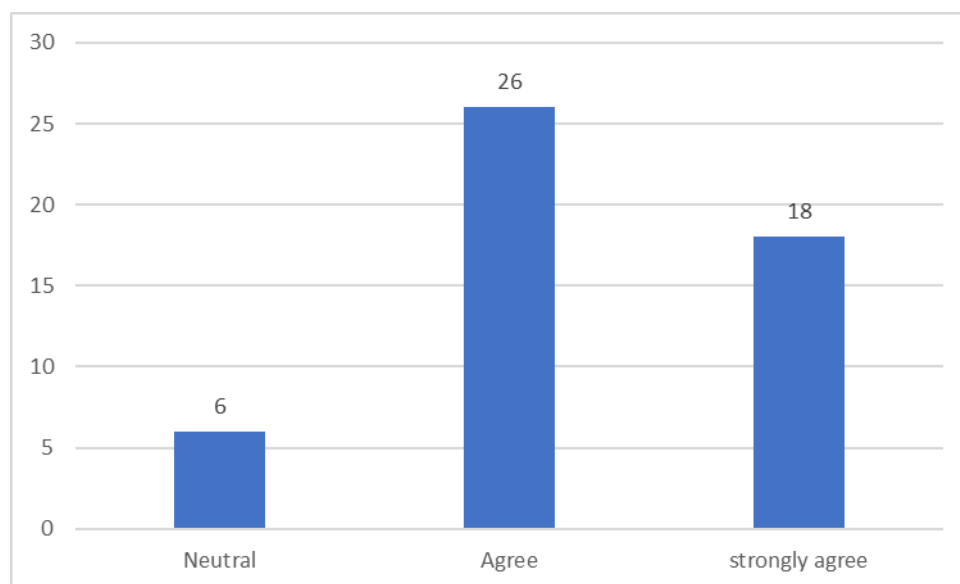


Figure 1.8 level of management education

The figure 1.9 describes the literacy rate of technology acceptance by management. 9 of the respondents disagreed that level of management technology acceptance is a hindrance to logistics companies. 17 of the respondents were remained neutral whilst 7 agreed. Moreover, 17 of the respondents strongly affirmed that technological acceptance by management is a challenge for logistics forms to successfully adapt e-commerce.

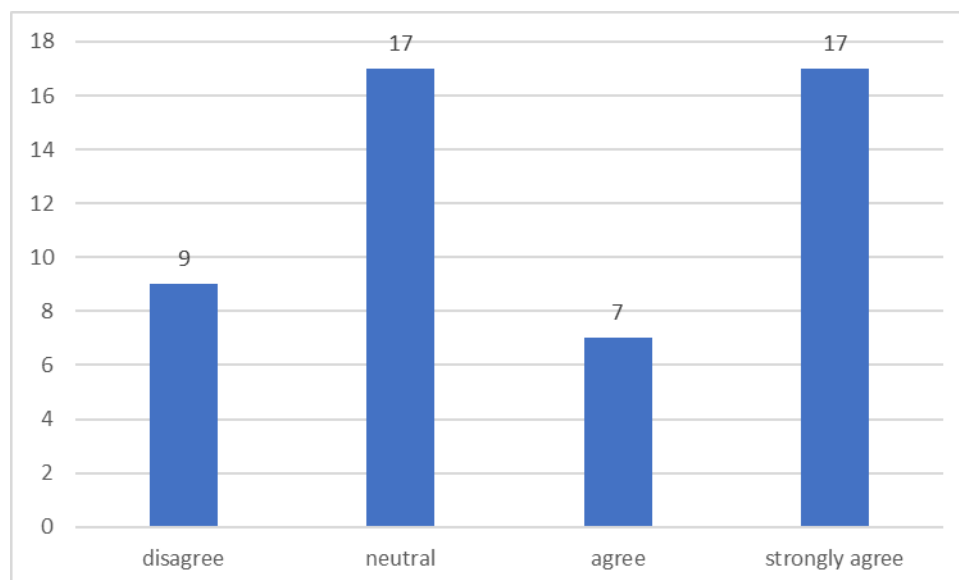


Figure 1.9 technology acceptance

The figure 1.10 shows how the respondents reacted on whether e-commerce knowledge is a factor in adopting online business. From the table, 48% strongly agreed, 44% agreed, 4% were neutral whilst and 2% disagreed.

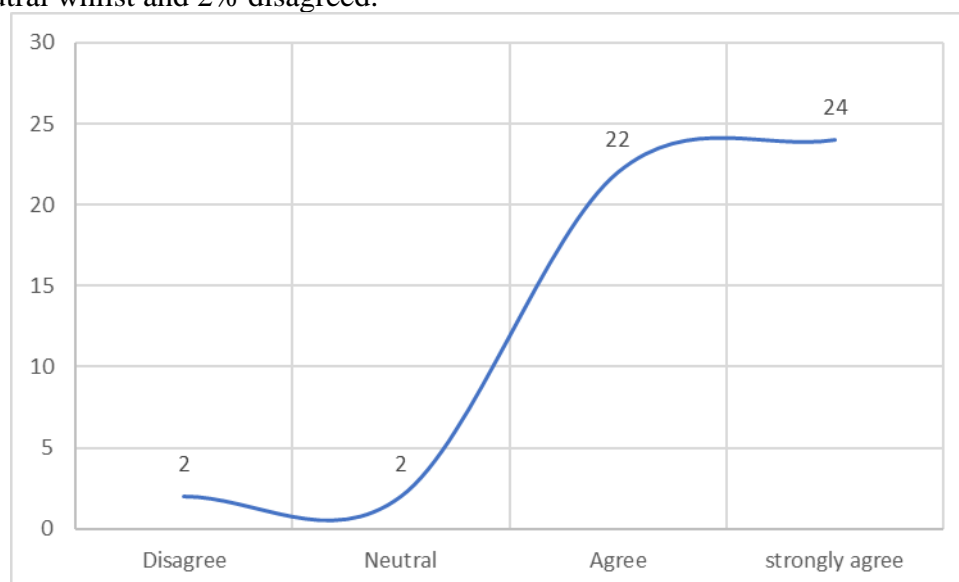


Figure 1.10 e-commerce knowledge

### Business factors

Business related challenges that hinder logistics companies to fully adopt e-commerce services were identified and described. The descriptive statistics of the business items are shown in table 1.8.

Table 1.8 Descriptive Statistics

	Technological equipment available	Privacy and trust of data	Business partners readiness	Type of business commodity	Operation cost implication
N	50	50	50	50	50
Valid					
Mean	3.9800	3.4400	3.6000	3.4800	4.0000

The table 1.9 indicates the business readiness to operate e-commerce market. From the table, 32% strongly agreed that technological factor account for business readiness to do e-commerce business. 34% agreed, and 34% were uncertain. None of the respondents disagreed to this statement.

**Table 1.9 technological equipment available**

Items	Frequency	Percent
Neutral	17	34.0
Agree	17	34.0
Strongly agree	16	32.0
Total	50	100.0

Among the business factors that Jumia Ghana Logistic faces, as a challenge is privacy and trust of data. According to the table 1.10, 46% agreed whilst 8% of the respondents also strongly agreed. 28% of the respondents were uncertain and 18% of the respondents disagree. None of the respondents strongly agreed.

**Table 1.10 Privacy and trust of data**

Items	Frequency	Percent
Disagree	9	18.0
Neutral	14	28.0
Agree	23	46.0
Strongly agree	4	8.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

From the table 4.11, 40% of the respondents were uncertain whether the type of business commodity is a factor to consider. With this, 18% of the respondents disagreed to this statement. 0% and 18% totally disagreed and agreed accordingly that the type of products and services the business deal with should be considered when adopting e-commerce.

**Table 1.11 type of business commodity**

Items	Frequency	Percent
Disagree	9	18.0
Neutral	20	40.0
Agree	9	18.0
strongly agree	12	24.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

The respondents rated operational cost of engaging in e-commerce business. From the table 4.12, 46% of the respondents strongly agreed, 20% agreed, whilst 22% of the respondents were uncertain. Over the years, most businesses fear to do e-commerce business due to the start-up cost and other tax implications cost their business might incur.

**Table 1.12 operation cost implication**

Items	Frequency	Percent
Disagree	6	12.0
Neutral	11	22.0
Agree	10	20.0
Strongly agree	23	46.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

**External factors**

The researcher found out the external factors that contribute to e-commerce adoption challenges of Jumia Logistics Ghana Limited. The study based the external variables like reliable power supply, payment facilities, accurate addressing system, access to Internet facilities and others. The descriptive statistics of the external or environmental variables are given in table 1.13.

**Table 1.13 Descriptive Statistics of external factors**

Variables	N	Mean	Std. Deviation	Variance
Quality transport and delivery system	50	4.0200	1.03982	1.081
Payment facilities available	50	3.8400	1.09470	1.198
Accurate address system	50	3.9800	.91451	.836
Reliable power supply	50	3.7200	1.10730	1.226
Internet facilities and its price	50	3.8800	1.04276	1.087
Government support and policies	50	3.7000	.88641	.786
Valid N (list wise)	50			

Using Varimax with Kaiser Normalization rotation method, SPSS was used to rotate the most significant factors that the respondents arguably rated have high impact and therefore do not facilitate e-commerce growth. From the table 1.14, quality transport and delivery system was the highest external challenge Jumia Ghana is facing which is followed by payment facilities system.

**Table 1.14 Rotated Component Matrix<sup>a</sup>**

	Component	
	1	2
Quality transport and delivery system	.833	.188
Payment facilities available	.864	-.029
Accurate address system	.675	.528
Reliable power supply	.379	.830
Internet facilities and its price	.813	-.077
Government support and policies	-.278	.809

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
Rotation converged in 3 iterations.

## DISCUSSION OF FINDINGS

Reliability as well as validity tests were conducted to reveal the reliability, objectiveness and consistency within the data. Cronbach's alpha Coefficient on indicators of knowledge, attitudes and behaviors is 0.708, and the average is  $>0.7$ , indicating a high reliability of the questionnaire. In term of validity, KMO and Bartlett Tests were conducted. The value of factor analysis was 0.785, and also the Bartlett's test of sphericity was significant ( $P < 0.001$ ). This helped to indicate the structural validity of the questionnaire. Hence, the questionnaire was both reliable and valid for our research purposes. The study revealed that 62.7% of the respondents are males and the females were 37.8%. It was found that the total mean of the gender statistics was 1.37 indicating more males (male=1, female=0). The mean of the highest educational qualification of the respondents was 2.2818, which are (University=2, 49.1%). Moreover, the postgraduates were 21 which represent 19.1% and least were high school graduates constituting 18.2% of the total respondents. The highest income among the respondents were \$201-\$300 which represents 44%. The information revealed that least group of employees receive income of \$300 and above. Majority of the respondents were from the IT section constituting 34%. Most of the employees of Jumia were within 6-10 years' work of experience.

### Impact of e-commerce adoption on Jumia Logistics Company

The study identified the impact of e-commerce adoption on Jumia Logistics Company in Ghana. The results revealed that e-commerce has a significant impact on Logistics Company such that customers have easy access to variety of commodities, increases sales volume the company involved, online promotions and convenience. The revelation of this study confirmed many researchers finding. The importance of e-commerce is huge on developing countries. Similarly, Ohidujjaman, et al (2013), emphasized e-commerce can achieve tremendous benefits to developing countries if it is applicable as an ideal business purpose. Ecommerce is a revolution in business practices. E-commerce adoption allows consumers to select from a lot, compare prices, quality, quantity, colors, brand, preference and lifestyle. 23 of the respondent strongly agreed that e-commerce adoption will enable consumers have access to different kinds of goods and services to choose from. 17 of the respondents who represent 34% also supported this statement. 4 of the respondents forming 8% disagreed whilst 6 of the respondents were neutral. E-commerce could deliver a significant benefit to businesses in developing countries by increasing their control over its place in the supply chain, thus improving its market efficiency (Molla & Heeks, 2017). Convenience is one of the benefits that customer gets from the e-commerce and thus increasing customer satisfaction. The findings of this present study support that of Abdul that the adoption of e-commerce makes it more convenient for consumers to sit home and buy whatever. This reduces the time spent on shopping and other carriage duties associated with it.

### Factors that hinder e-commerce adoption of Jumia Logistic Ghana

The factors were grouped into business related factors, management and environmental or external factors that militate against enterprises;

**Managerial factors**

The study identified the managerial factors that affect e-commerce adoption of Jumia Ghana Logistics. One of the factors under the managerial issues is level of management education towards e-commerce. Since the ultimate authority is bestowed in managers of organization, their level of knowledge in e-commerce is very crucial in adopting online business. 18 of the respondents strongly agreed, 26 of the respondents agreed and 6 of the respondents were uncertain on the. According to literature, the level to which an owner or manager is educated is considered to be an important criteria for the successful implementation of E-Marketing. The level of education usually considered acceptable is a high school certification even though a business certificate could go a long way (Shemi, 2013). Literacy rate of technology acceptance by management is a significant factor to consider. Some management thinks technological business is too risky and technical to operate. Few managers have the technological skills to impact on their business. Some concerns about how data is managed between the old and the new ICT applications for instance have caused some organizations to be unconvinced about E-Marketing adoption.

**Business Factors**

To migrate to e-commerce business, the researcher identified some business related factors. Several factors are cited as either motivating or hindering the adoption and implementation. A healthy appreciation for e-commerce by the manager and other key personnel can influence the adoption process in the business. Due to the availability of resources and ease of entry into the business sector, SMEs in developed countries have a better knowledge of ICT than those in developing countries (Eriksson, Hultman & Naldi 2008). Privacy concerns have some power in informing individuals' decisions to transact online, but can be overcome by the more salient positive factors. Among the most critical determinants of e-commerce adoption for businesses and online consumers are the issues of trust, online security and privacy (Bharat & Abhijit, 2010). According to Choudhury and Choudhury (2010), security is categorized into two: providing security for all transactional data and information of the users and privacy for the private details of the customers. Some researchers have narrowed the security concerns down to "Trust", which is considered by the researchers as a significant element to be integrated into E-Marketing adoption (S.Dick, & J.Miller et al, 2011). The issue of trust is everyone's responsibility in this setting and even more so for the Internet stores. In deciding to adopt e-commerce, most organization considers their commodity and the targeted consumers. Finance relates to resources firms can employ in acquiring and implementing technological innovations, consultation fees, the hiring and training of key personnel in the handling of their ICT set-up including the maintenance and servicing of ICT infrastructures and websites (Mutula, S & Van Brakel, 2007). The respondents rated operational cost of engaging in e-commerce business. From the table 4.12, 46% of the respondents strongly agreed, 20% agreed, whilst 22% of the respondents were uncertain. Over the years, most businesses fear to do e-commerce business due to the start-up cost and other tax implications cost their business might incur.

**External or environmental factors**

The external environment of the organization also impacts some challenges to e-commerce adoption. It describes the realm of business engagement of the firm (Scupola, 2009). This describes factors such as government role; business partner affiliation and preferences; nature and characteristic of value chain; logistics and telecommunications infrastructure; economic and political instability; human-rights issues; business culture. The lack of payment facilities such as credit cards has prevented the completion of e-commerce transactions as reported by Mercer (2015). Chibelushi and Costello (2009) asserts that internet space is fast running out



mainly as a result of the ever growing subscribers of mobile phones, the upsurge of internet users around the globe, the increasing use of radio frequency identification (RFID) tags.

Varimax with Kaiser Normalization were converged in 3 iteration as shown in table 1.14. Quality of transport and delivery system (.833) is most crucial factor to Jumia Logistics due to deplorable roads in Ghana. Payment system was a second big external challenge due Internet fraud and unreliable system. External or environmental factors have great influence e-commerce and logistics implementation. Researchers (Dunt and Harper, 2002; Chan and Al-Hawamdeh, 2002, Martinsons, 2008) noted that developed countries' ability to adopt and use e-commerce and e-business at advanced levels has been greatly enhanced by their government's proactive role in providing the enabling infrastructure for e-commerce to thrive. This is often lacking in developing countries because their governments are usually concerned with issues of poverty and hunger eradication (OECD, 2004). Molla, Taylor, & Licker (2006) found that during the early stages of e-commerce penetration, public and external institutions play 'key roles in creating conducive conditions and in providing the impetus necessary for e-commerce to spread.' In less developed economies, other forms of regulatory policies may have to be pursued to enable e-commerce adoption using various types of technologies to complement efforts made by their governments.

### **Correlation between e-commerce and logistics**

Strong management and correlation relationship between e-commerce and logistics is needed to improve customer satisfaction and e-commerce trade. The results support other studies findings. The success of an e-commerce company correlates strongly with its logistical performance (Cullen and Taylor, 2009; Hsiao et al., 2017) and distribution systems (Lu and Liu, 2015). Superior e-commerce logistics management can raise a company's performance (Bhattacharjya et al., 2016; Cho et al., 2008). The characteristics of various worldwide environments, such as the logistical capacities of different countries, are more likely to induce different logistical operations. Nevertheless, few studies have comprehensively scrutinized e-commerce logistical business models from a global perspective. The study indicated that the level of Internet safety perceptions, ecommerce acceptance, privacy concerns and personal interest are salient factors in informing individuals' intention to transact online. The study found that there is strongly correlation between ecommerce and logistic in table 1.7. Website for corporation positively correlates with business operation (84\*), market factors (.812\*\*) and all the variables positively correlates with logistics items. This show the necessity to integrate e-commerce in logistics operations. E-commerce variables were website for corporation, product or services, customer support and order process service whilst the logistics items were business operations, market factors and competitive advantage. E-commerce management requires superior delivery services (Iyer et al., 2004), perfect logistics information systems (Auramo et al., 2005), secure e-procurement processes (Vaidyanathan et al., 2012), inter-organizational collaboration (Gimenez and Ventura, 2005), convenient mobile banking (Shaikh and Karjaluto, 2015), efficient mobile channel and suitable collaboration tools (Chong et al., 2009), etc. Improved e-commerce logistics management can also enhance a company's financial performance. E-commerce investments need to consider sources for many different possible configurations such as insourcing and outsourcing. Moreover, e-commerce applications influence the supply chain network design over time. Additionally, firms need to consider the related logistics activities to obtain the benefit from investing in e-commerce (Mangiaracina et al., 2015; Yu et al., 2015). Hence, how to effectively manage e-commerce logistics is a topic warranting immediate attention.

## CONCLUSION

Based on the findings of this study, it could be concluded that the factors that hinder e-commerce adoption of Jumia Ghana Logistic Company is a multi-dimensional factors which comprise of environmental factors, managerial factors and business related factors. Some of the environmental factors were; accurate address system, access to internet facilities, government support and policies, available payment corporations, quality transport system etc. the business related factors were; cost of implications, technological equipment, size of business, business ability to provide trust and privacy on transactions, business partner readiness etc. the study also revealed that management level of education, owners or shareholders' commitment, e-commerce literacy rate were the most managerial factors. The study moreover revealed e-commerce adoption has impact on the Company. E-commerce will increase sales and promote economic growth, it will reduce physical traffic in shops whilst encourage technology acceptance and development.

Many firms have little knowledge of effective management of e-commerce logistics. This investigation gives academics and managers a holistic view of e-commerce logistics through Jumia data analytics. Furthermore, e-commerce logistics companies can employ the proposed correlation variables and analytics to identify e-commerce logistics issues, and thereby develop vital ecommerce logistics strategies.

The analytical results of this study on e-commerce logistics discover essential implications for practice and research. First, the empirical results of the research reveals critical themes of e-commerce logistics including "website process, ordering and payment systems", "E-commerce order management", "E-commerce logistics services", "E-commerce logistics package management" and "E-commerce logistics networks". Moreover, an essential rule is generated from the correlation table which is helpful in forming a mathematical model. This will imply that Jumia Ghana management could easily identify external e-commerce challenges as obtained by the Varimax Rotation Method in table 1.14. More importantly, the proposed framework can be applied and extended for academia and industry to explore e-commerce logistics issues.

This work differs from existing investigations by discussing e-commerce logistics in various ways. First, this study systematically absorbs the valuable insights of e-commerce logistics through case, which is Jumia Ghana Logistic Limited. Secondly, the study identified the e-commerce adoption challenges in order of categorical sections ranging from management level, business level and environmental issues. This results may stimulate future studies in e-commerce logistics management as well as help to address issues regarding the applications of big data analytics to e-commerce logistics.

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