

**E-COMMERCE ADOPTION AND BUSINESS PERFORMANCE OF AUTOMOTIVE
FIRMS IN NAIROBI, KENYA**

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DECLARATION

This project is my original work and has not been presented for a degree in any other University.

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This project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

Dedicated to Kwamboka, Monda and Omari.

ACKNOWLEDGMENT

I express my gratitude to Mr. Joel Lelei for his patience, guidance and dedication throughout this project.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGMENT	iv
LIST OF TABLES	viii
ABSTRACT	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.1.1 E-Commerce	1
1.1.2 Drivers to Adoption of E-Commerce.....	2
1.1.3 Barriers to Adoption of E-Commerce.....	2
1.1.4 Business Performance	3
1.1.5 Automotive Firms in Kenya.....	4
1.2 Research Problem	4
1.3 Research Objectives	6
1.4 Value of the Study	6
CHAPTER TWO: LITERATURE REVIEW	8
2.1 Introduction	8
2.1.1 Expectation-Confirmation Theory	8
2.1.2 Technology Acceptance Model	9
2.1.3 Transactions Cost Innovation Theory.....	9
2.2 Extent of Adoption of E-Commerce.....	10
2.3 Drivers for the Adoption of E-Commerce.....	10
2.4 Barriers to Implementing E-Commerce	13
2.5 Empirical Literature Review	14
2.6 Conceptual Framework	15
2.7 Summary of Literature Review	16
CHAPTER THREE: RESEARCH METHODOLOGY	18
3.1 Introduction	18
3.2 Research Design	18

3.3 Population.....	18
3.4 Sample Size	18
3.5 Data Collection.....	18
3.6 Data Analysis.....	19

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND DISCUSSION.....21

4.1 Introduction	21
4.1.1 Response Rate	21
4.2 Demographic Information	21
4.2.1 Respondents Level of Education.....	21
4.2.2 Duration of Service	22
4.2.3 Level of Management.....	23
4.2.4 Years in Operation.....	23
4.2.5 Ownership of the Firm	24
4.2.6 Automotive Firm’s Branches	24
4.3 Adoption of E-Commerce	24
4.4 Drivers of E-Commerce	25
4.5 Business Performance	27
4.6 Barriers to Adoption of E-Commerce	27
4.7 Relationships between E-Commerce Adoption and Performance	28
4.7.1 Model Summary	29
4.7.2 ANOVA.....	29
4.8 Discussion of the Findings	31

CHAPTER FIVE: SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATIONS33

5.1 Introduction	33
5.2 Summary of Findings	33
5.3 Conclusion.....	34
5.4 Recommendations	35
5.5 Limitations of the Study	35
5.6 Recommendation for Further Research.....	35

REFERENCES	36
APPENDICES.....	42
Appendix I: Questionnaire	42
Appendix II: List of Major Companies in the Automotive Industry in Kenya From 2013 to 2017	46

LIST OF TABLES

Table 4.1: Academic Qualification	22
Table 4.2 Duration of Service	22
Table 4.3 Level of Management	23
Table 4.4 Year when Firm was Established.....	23
Table 4.5 Ownership of the Firm	24
Table 4.6 Automotive Firms Branches	24
Table 4.7 Adoption of E-commerce.....	25
Table 4.8 Drivers of E-Commerce.....	25
Table 4.9 Business Performance.....	26
Table 4.10 Barriers to Adoption of E-Commerce.....	27
Table 4.11 Regression Model Summary.....	28
Table 4.12 ANOVA ^a	29
Table 4.13 Regression Coefficients	30

ABSTRACT

The study investigated the relationship between the adoption of e-commerce and the business performance of automotive firms in Nairobi, Kenya. The study sought to understand the extent of adoption, the related drivers and the barriers. A descriptive research design was done targeting thirty-four (34) automotive dealership firms in Kenya. Primary data was used in this study to achieve the set objectives. A questionnaire was employed to obtain data from Information Communication Technology department heads in each of the automotive firms. The questionnaire was distributed in a “drop and pick later” method. The quantitative data acquired was analysed using SPSS version 23 and results shown in tables. This study applied multiple regression to define the relationship between the adoption of e-commerce by automotive firms in Nairobi and business performance. From the regression findings, the seven independent variables studied explained a substantial 85.8% of business performance of the firms as represented by the Adjusted R squared (0.858). Other factors and random variations not covered in this study were found to contribute 14.2% of business performance of the automotive firms. The study found a great extent of adoption of E-Commerce which was driven by the perceived advantages of the system to the operations of the firm, compatibility of the system with the existing ones, and institutional pressures whereby competing firms adopted the same. Reduction of costs is also another key motivator for the firms to deploy E-Commerce coupled with a perceived ease of use. The size of the organization moderately leads to adoption of the E-Commerce. Further the availability of technical staff to rollout E-commerce and the level of external infrastructure development such as internet and smartphone penetration motivates the firms to adopt E-Commerce. Adoption is also driven by the need to enhance security of customer transactions and the high level of readiness by customers to use the E-commerce platforms. Overall, the study shows that these drivers exert a great extent of influence in the adoption of E-Commerce by the automotive firms. Lastly the study established the main barriers to e-commerce adoption as resistance by employees to adopt to the system, inadequate financial resources to support the system and lack of technical know-how to deploy the system. The Study shows that these barriers have a moderate extent of impact on the adoption of E-Commerce by the automotive firms. The study recommends all automotive firms to allocate adequate resources towards the adoption of E-commerce. Staff members should also undertake training courses on e-commerce and related technologies to enable the firms to leverage the full potential of E-commerce. In conclusion, the study is relevant to automotive firms in Kenya that seek to deploy E-Commerce solutions.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the present day competitive global marketplace, the adoption of Information Technology (IT) to enhance the capacity of an enterprise to endure the prevailing competition has become a key strategy for both the private and public-sector firms. According to Merono-Cerdan (2012), e-business technology is currently extensively spread among firms because of its associated benefits between customers and firms, as well as amongst customer to customer engagements. For firms that sell goods and services, the adoption of e-commerce is becoming critical to their long-term survival.

Tsai and Cheng (2012) articulate that e-commerce gives companies a new and alternative way of transacting business with customers irrespective of the distance between them. E-commerce breaks down geographical boundaries and gives companies equal access to global markets. The adoption of e-commerce by a business is not only expected to generate positive returns, but also to improve the business to customer relationships. Consequently, it is paramount to understand the importance of e-commerce adoption by automotive firms in Kenya and how it affects their business performance. On the same breath, the extent adoption of E-Commerce is influenced by drivers and barriers that shape the path of any E-Commerce implementation. Therefore, the study will also seek to understand the extent of E-Commerce adoption by these firms and the various drivers and barriers involved.

The study is anchored on three theories namely, the Expectation-Confirmation Theory (ECT), Technology Acceptance Model (TAM) and the Transactions Cost Innovation Theory. These theories will be very important in shaping the path of the study especially in linking dependent and independent variables using empirical data. Kawulich (2009) argues that a good knowledge of the various theoretical frameworks is important in any given study.

1.1.1 E-Commerce

The definition of e-commerce is as diverse as the number of scholars and practitioners that have attempted to explain it. Soto (2005) asserts that electronic commerce (e-commerce) is an intricate procedure that accelerates strategy formulation, communication (for instance promotion), delivery/fulfilment, and assessment of the current business transaction between a

firm and its partners. Further, Turban, Lee, King and Chung (2009) articulate that e-commerce involves exchange and trade of information, services or products over the internet.

Zwass (2006) highlights that e-commerce implies the sharing suitable information regarding emergence of new technology in the business, uphold a firm's relationships, and running the business activities using internet. From these definitions, e-commerce is applicable to business activities of other diverse set up and is not restricted to transactions of product only. According to Kalakota and Whinston (2007), e-commerce applications find use in three main transactions; business to customer, customer to another customer and business to another business. Another emerging avenue is between government to customer and government to businesses.

1.1.2 Drivers to Adoption of E-Commerce

Tsai and Cheng (2012) articulate that E-Commerce implementation is driven by the perceived benefits it brings to an organization. They postulate that the adoption of E-Commerce is driven by its expectation to lower the cost of operation of a firm, increase quality and quantity of production, and enhance rapid response to clients' and stakeholders' needs (Jardim-Goncalves *et al.* 2012). Further, businesses that have adopted E-Commerce extensively have been found to increase their value due to the improved performance of the firm.

E-Commerce facilitates adoption of collaborative technologies; such as repositories, shared databases, discussion meetings and workflow facilitating the process of technology implementation (Merono-Cerdan *et al.* 2013). Researchers have established a positive relationship between innovation and collaborative technologies in a firm. This association facilitates knowledge sharing such as through web sites and extranets, between customers and suppliers. Thus, Internet technologies helps in sharing and distribution of individual innovation and experience skills in the whole firm as well as enhancing appropriate knowledge application in creating new products (Andreu, Aldas, Bigne & Mattila, 2010).

1.1.3 Barriers to Adoption of E-Commerce

Girard (2014) defines a barrier as a representation of "a physical or immaterial obstacle that an individual or group needs to overcome in order to obtain the information they seek". This study will strive to understand the specific barriers that automotive firms in Nairobi, Kenya

face in their quest to deploy E-commerce systems. It will also be important to understand whether these barriers are specific to the automotive firms or they are shared across different sectors of business.

Lawrence and Tar (2010) posited that E-Commerce has the capability to impact efficiency as well as productivity in several sectors of the economy in developing countries but barriers such as absence of adequate basic infrastructure, lack of government national ICT strategies and poor socio-economics. Other barriers that have been identified include lack of top management's support towards the implementation of E-Commerce, inadequate financial resources and lack of appropriate technical skills to deploy E-Commerce.

1.1.4 Business Performance

According to Van Weele and Van Raaij (2014) a firm's business performance gives an ability to evaluate its success and progress towards the achievement of goals, targets and objectives as well as recognize areas of weakness and strength and determining on how forthcoming initiatives are to be undertaken. Moullin (2017) defines performance as a means through which a firm provides value to its stakeholders and therefore is an indication of how well the managers succeed in utilizing firm resources. Further, Koontz and Donnell (2010) is of the view that a firm's performance is the ability to realize such mundane objectives as high profit, increased market share, new product development, good financial results, and achieving long-term sustainability. Hence it is a measure of actions of the business firm in terms of achieving firm aims and objectives.

Different ways are used to evaluate the degree of success or performance of a firm. In respect with Carton (2004), positive performance can be assessed based on what value creation it has for stockholders. Based on financial performance, it is evaluated on how it has changed the financial state of an organisation. Prior studies have used multiple performance dimensions. Lumpkin and Dess (2001) established four possible scope of performance, namely: market proportion, customer satisfaction, return on asset, and general profitability to evaluate firm performance and learning orientation. Usang, Effiok and Ojong (2012) suggested four dimensions of performance namely; retention of clients, success of new product, return on investment and growth in sales to measure performance of a firm and market orientation. Huang (2010) discovered the indices of life quality, effectiveness, innovation, efficiency, profitability and productivity for measuring the performance of SMEs.

1.1.5 Automotive Firms in Kenya

Kenya's automotive marketplace is dominated by several small second-hand dealerships that collectively control 80 percent of all the cars sold in Kenya. Some of these include Gigi Motors Ltd, Karen Auto Mart Ltd, Lota Automobiles Ltd and A-Plus Motors Ltd. The 20 percent market for brand new cars is controlled by several medium to large companies. These include, CMC Motors Ltd, Isuzu East Africa Ltd, Toyota Kenya Ltd, DT Dobie, Simba Colt and Subaru Kenya Ltd.

The automotive sector is one of the key pillars of the Kenyan Economy. The Kenya National Bureau of Statistics' Economic Survey 2017(KNBS, 2017), shows that the value of motor vehicle imports for the year 2015 stood at Ksh 117.6 billion which represents 13.5% of Kenya's total import bill of Ksh. 1.58 trillion for that year. This clearly underscores the important role that the automotive sector plays in the Kenyan economy.

When looking at global E-commerce trends, the automotive sector has been one of the most disrupted sector by the arrival of the internet which totally changed traditional business models. Before the arrival of the internet, cars were sold through brick and motor shops. Customers had to walk from one shop to another often taking days before they could find the right car. Now with E-commerce customers can browse thousands of cars online and make a purchase without having to step in a dealership shop.

Looking at the Kenyan context, it's clear that dealerships have begun to embrace E-commerce, but its benefit on business performance, extent of adoption, drivers and barriers are not well understood. There are few studies that have been done in this area and there is a clear knowledge gap. This research will go a long way to enhance knowledge in this space and will be of immense value to the automotive firms in Kenya and elsewhere.

1.2 Research Problem

The hyper competitive nature of the modern business environment that has been occasioned by the hastening of technological revolution, competitive intensity and globalization. This has put impetus on the management of both large and small firms in developing and developed countries to adopt to this change (Lopez-Nicolas & Soto-Acosta, 2010). Consequently, business units have had to come up with ways and means to remain competitive, and one of

these strategies is adoption of information technology systems such as E-Commerce. The adoption of information technology in business processes is associated with improved firm outcomes by helping the implementation of requisite entrepreneurial and adaptive actions. Indeed, at present, it is a known fact that majority of the business firms have adopted one form of information technology. Beldona et al., (2012) posit that an e-commerce framework has become an integral part of business systems at present. Morosan et al., (2014) further reinforce by acknowledging that business firms nowadays centre their focus on Internet and its related IT-oriented business procedures, together with the social accomplishments evolving from consumer-to-consumer (C2C) interfaces as well as from the business-to-consumer relationship.

The automotive industry in Kenya is one of the vibrant sectors of the economy with the level of competition ever increasing due to increased number of dealers as well as the importation of second hand cars by owners. As a result, the firms must come up with ways in which they can improve their market performance through enhanced agility. One of the potential areas of investment that might positively affect the performance of the motor vehicle dealers is through the adoption of E-Commerce. A comprehension of the impact of E-Commerce within the Kenyan automotive sector would enable decision-makers to deploy resources more appropriately, which is an important aspect to a company's prosperity and survival in the present market atmosphere. In addition, the automotive firms in Kenya can benefit from the adoption of E-Commerce through sharing of knowledge that allows firms to advance innovation capacity.

Wanjau, Macharia and Ayodo (2012) extensively researched on the factors affecting deployment of E-Commerce among SMEs with focus on tour and travel firms in Nairobi. The premise of the study was that SMEs have been slow to adopt and evaluate E-Commerce. The study found that majority of the sampled firms have adopted E-Commerce to some extent. Given that most car dealerships in Nairobi fall within the category of SMEs, it will be of importance to correlate these findings to the automotive sector in Nairobi, Kenya.

Ngugi (2016) studied E-Commerce security and performance among SMEs in Nairobi, Kenya. The study findings revealed a notable relation between E-Commerce security threats and organizational performance. Wamae (2011) sought to investigate the efficacy of international E-Commerce approach amongst designated listed motor vehicle merchants in

Nairobi, Kenya. The findings were that global E-Commerce had facilitated improved products and services accessibility; enhanced customer and supplier relationship, minimize time consumed and cost incurred in transaction of business information.

Local studies that have attempted to research on E-Commerce have delved only on the factors influencing implementation of E-Commerce as well as security and its effect on the firms' performance. Thus, considering the perceived benefits of E-Commerce on a firm, it is important to establish the relationship between the adoption of E-Commerce and the business performance of automotive firms in Nairobi. Thus, this research seeks to answer the question: what is the impact of the adoption of E-Commerce on the business performance of automotive firms in Nairobi, Kenya?

1.3 Research Objectives

The objectives of the study are;

- i. To determine the relationship between E-Commerce adoption and performance of automotive firms in Nairobi, Kenya
- ii. To establish the extent to which automotive firms in Nairobi, Kenya have implemented E-Commerce
- iii. To establish the drivers to the adoption of E-Commerce by the automotive firms in Nairobi, Kenya
- iv. To establish the barriers to the adoption of E-Commerce by the automotive firms in Nairobi, Kenya.

1.4 Value of the Study

This study will be of immense importance to automotive firms in Kenya and elsewhere in understanding the need for E-Commerce in their businesses. Research has shown that automotive firms that are first to implement E-Commerce solutions such as listing sites often maintain a leadership position in web traffic. This study will therefore be important to automotive firms that seek to improve their business performance by deploying E-Commerce solutions.

The industry stakeholders such as the Kenya Car Dealers Association and the Kenya Manufacturers Association will gain value from this study's findings and will help them to formulate relevant strategies. Other stakeholders can also benefit from this study by

understanding intricate details about E-Commerce and how it relates to the automotive sector in Kenya.

The various government bodies that are mandated to establish ICT policy and the various legal frameworks that govern E-Commerce can also benefit from this study. It will be of great interest to them to understand the extent to which the automotive firms have adopted E-Commerce. The government will also benefit from this study by understanding the various barriers some of which are policy related, that the automotive firms encounter in their quest to implement E-Commerce solutions. One of the key barriers to the adoption, is negative government policies and regulations. This study will therefore serve the government in understanding the barriers that the automotive firms face and how these can be removed.

This study is beneficial to future scholars and researchers because it contributes to the prevailing knowledge framework on the importance of e-commerce on the business performance of a firm. It is an exceptional reference material to individual(s) who wish to conduct further study associated to this topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this section, theories that anchor the study are discussed as well as the factors influencing the adoption of e-commerce. In addition, empirical studies about e-commerce services and conceptual framework that relates to the variables are discussed. The extent of adoption of E-Commerce by the automotive firms as well as the drivers and barriers will also be discussed. Finally, the chapter will summarize the literature review and coherently put together the relationships of these theories to the objectives of the study.

2.1.1 Expectation-Confirmation Theory

This study is anchored on the expectation-confirmation theory (ECT). The expectation–confirmation theory (ECT) was advanced by Bhattacharjee (2001) as a way of understanding and predicting the users’ continuance intention toward new technologies. ECT argues that a consumer’s intention to use a service more than once is determined by the person’s level of satisfaction, which in turn is influenced by the consumer initial expectations (pre-purchase expectations) and the resultant feelings after consumption of the service. The discrepancy between initial expectations and perceived product/service performance (confirmation) influences the consumers’ decision to repurchase the product or not. Halilovic and Cicic (2013) argue that according to ECM theory, the similarity between initial expectations and actual performance (confirmation) affects both perceived utility function and consumer satisfaction. Hence, the perceived usefulness of a service/product impacts on the satisfaction of a user which in turn determines continuance intention.

Lin and Hsieh (2007) further argue that expectation-confirmation theory suggest that consumer’s decision to continually use a technology, for example the e-commerce platform for a company, follows a procedural sequence to arrive at repurchase intention. The method of using e-commerce by a buyer starts before the actual purchase where consumers develop some expectation of the e-commerce platform or service. Afterwards, the user of the e-commerce form opinion concerning service or product performance compare it with their initial anticipation. Coursar, Hassanein, Head and Bontis (2012) note that the point where consumer expectation align with performance, influences the degree of satisfaction. Consequently, consumers whose needs were satisfied established a repurchase intention whereas dissatisfied customers cease their intention to repurchase the product in the

subsequent periods. Klein et al. (2009) highlight that for e-commerce; the constructs that defines a consumer expectation include service assurance, reliability, empathy, and responsiveness. The decision by customers to use e-commerce platforms services is dependent upon the expectation that they have on the system that can be peroxide by reliability, security features, convenience, affordability and ease of use. Therefore, consumer happiness with the use of an E-Commerce system is influenced by the perceived utility and the service to be offered.

2.1.2 Technology Acceptance Model

Technology Acceptance Model (TAM) pioneered by Davis (1989) reasons that a person is motivated to use a given technology by his/her willingness to accept and have trust in its benefits, satisfaction and utility function. According to TAM, the behavioural intention of a user to incorporate an information technology system reflects the user acceptance of the system. A user intention, consequently, is conjointly determined by the attitude and perceived usefulness of the user on the system and reflects the perceived usefulness that was derived from using the system (Niederhauser and Perkmen, 2010). Further, a customer's attitude to use an ecommerce application is jointly affected by its simplicity and convenience. Davis (1989) defined simplicity as confidence in using a specific system with little effort. In TAM context, the perceived convenience influences behaviour indirectly.

The technology acceptance theory gives its weight in forecasting customer behaviour when interacting with an e-commerce application (Wang & Butler, 2011). Acceptance by customers to use a solution is guided by the quality of the solution together with the efficiency that it brings. Consequently, a successful application of e-commerce by an automotive company has a direct influence its success.

2.1.3 Transactions Cost Innovation Theory

The transaction cost innovation (TCI) theory was advanced by Niehans (2006) and suggest that the leading driving innovation factor is reducing the cost of transaction. The potential to reduce the cost of transactions of a company can have a positive impact on performance and ecommerce has the capacity to reduce the cost of transaction. Cao et al. (2010) highlight that the Internet-oriented IT can reduce the cost of transactions because it gives customers off-site accessibility to a company's products. This removes the costs that are associated with traditional forms of selling products to customers. However, for the benefits to be realised,

the quality of service offered by the e-commerce platform should be better than the traditional forms of selling.

2.2 Extent of Adoption of E-Commerce

The E-Commerce landscape in Kenya is evolving rapidly and it's becoming more and more a critical component of the economy. A 2018 whitepaper by the Communications Authority of Kenya (CAK) titled Facilitation and Adoption of E-Commerce Via the Postal/Courier Networks notes that by 2020, over half of the Kenyan population will have access to the internet. The same paper also puts the number of people with access to mobile payment services to be a quarter of the population. Irrespective of this modest success, the paper notes that the extent of E-Commerce adoption by all sectors of the Kenyan economy is relatively low by international standards.

Kinuthia and Akinnusi (2013) posit that E-Commerce in Kenya is developing at a slow pace resulting in e-businesses that are not fully exploiting the benefits of the internet. This slow pace of adoption is attributed to a myriad of barriers that span the whole spectrum from the government to organizational business practices. Other factors that have hindered the adoption of E-Commerce include individual based barriers such as the level of education and the appetite for innovation.

A more recent study by Omolo (2016) identifies innovations in electronic payment such as MPESA and access to internet as the key factors that are driving the adoption of E-Commerce in Kenya. The affordability of smartphones is another factor that is greatly driving the adoption of E-Commerce. These devices give people access to instant information which is a key ingredient in E-Commerce. With access to information, people can quickly undertake E-Commerce related activities such as price comparison, finding related products and making orders.

2.3 Drivers for the Adoption of E-Commerce

Different scholars have enumerated varied elements that influence e-commerce implementation in different context and organizations. As a result, different theories have been advanced to try and explain the elements that affect adoption of e-commerce by companies; namely, theory of communicative action and innovation diffusion theory. Innovation Diffusion theory (Davis, 1989) identifies different factors that influence

information technology adoption in firms. These factors include the relative advantage of the system, complexity and compatibility which may inhibit or encourage the adoption of an innovation. Chwelos et al. (2011) suggest, however, that the theory of diffusion only deals with factors concerning technology that describe the system, most of the factors identified that affect adoption of the business to business e-commerce framework assumed an organizational dimension, by concentrating on inter-organizational and organizational features on top of technological aspects.

Teo, Wei and Benbasat (2013) argue that institutional pressures influence implementation of e-commerce in the supply chain. By drawing from institutional theory, they find that firms encounter challenges of conforming to policies and practices that are well-thought-out to be appropriate in their institutional environments. If a firm fails to conform to what is an industry norm, then it is likely to face sanctions through denial of capitals and social sustenance necessary for gaining competitiveness (Rahim, Shanks and Johnstonn, 2011). Three types of isomorphic pressures have been identified that come out of interaction with industry players. Ke and Wei (2014) identify coercive, mimetic, and normative factors as the dominant institutional factors. Mimetic pressures arise out of an organization imitating innovations or functional practices of other companies in their operating business environments, whether they conduct any practical value, to advance its social legality. On the other hand, coercive forces are both informal or formal that companies encounter from governmental governing agencies, parent organizations, and other policy regulatory institutions, which are leading in respect to the quantity and quality of resource ownership (Teo, et al., 2013).

Barua, Konana and Whinston (2014) divided the factors that influence e-commerce implementation in businesses to customer and supplier related aspects as the determining factors of B2B strategy implementation. The factors related to suppliers that influence e-commerce adoption include supplier readiness, supplier online information, process alignment of a customer, supplier process alignment, system integration, customer readiness and customer-side online information.

Zhu, Dong, Xu and Kraemer (2014) opine that the factors that affects e-commerce adoption in a business can be categorized into innovation and contextual factors. The innovation factors are those characteristic that define the operations of the system that include its

comparative advantage, security concern, compatibility and costs. On the other hand, the relative factors include organization size, technology competence, partner readiness and competitive pressure that drives application of e-business. In their study, they find out that organization size, security concern and costs had a negative impact on application of e-business, while the other factors were found to be positively correlated with e-business application. Application of E-business influences the performance of e-business. Zhang and Dhaliwal (2009) suggest that when a firm is adopting e-commerce, it needs to consider both the firm's contextual factors as well as the governing factors in forecasting e-business application.

Cho (2015) conducted a study with the aim of establishing the crucial factors that influences incorporation of third-party B2B portals among the garment industry in Hong Kong. The study findings revealed that perceived external pressure, perceived benefits, firm size, and perceived challenges influenced the e-commerce implementation process among the companies. Chong and Pervan (2010) highlight that both external and internal environmental aspects influenced significantly the degree at which implementation process of B2B were achieved. These internal elements comprised of trial ability, perceived comparative advantage, observability, amount of communication with other firms, non-trading institutional impacts, diversity of information sources and competitive pressure.

The drivers of E-Commerce are tightly interlinked sometimes to a high level of mutual dependency. For example, internet availability and smart devices to access the internet, are mutually inclusive. The CAK Whitepaper on E-Commerce Adoption in Kenya (2015), argues that a growth in E-Commerce is closely interlinked to a growth in the disposable income amongst the middle class. Omollo (2013) also notes a strong positive correlation between a conducive legal framework within a country and the growth in E-Commerce. He notes the example of Kenya where the adoption of mobile payment services has greatly benefitted from the conducive legal framework put in place by the Kenyan government. A comparison with neighbouring countries who share a similar socio-economic profile but different or non-existent policy frameworks, shows them lagging in mobile payment services. Consequently, it is evident that there exists a strong relationship between the drivers sometimes to a mutually inclusive extent.

2.4 Barriers to Implementing E-Commerce

The success of an organization in implementing an E-commerce portal depends not only on the firm's internal factors but also factors outside its control. Roger (1995) highlighted four different factors that affect the success of adopting an innovation. These variables include the level of top management support, financial constraints, lack of technical expertise in the firm and external factors.

For effective adoption of E-commerce, there is need for an organizational support, especially from the top management since introduction of an E-commerce portal requires a change in organizational culture and also operations which needs the top management reassurance for its effective execution. Cavaness and Manoochehri (2013) outlines that the top management not only refers to the company's CEO and Chairman, but also all managers who are mandated to establish and impose policies and guidelines. Top management support is necessary during the execution because the project managers must be approved by the top management with strategic business goals (Sumner, 2012).

Okiy (2005) notes that "The critical role of finance in provision of exceptional services cannot be overrated because it is the glue that binds the building, collections and staff together and allows attaining goals". Lack of sufficient funds can be disincentive during adoption of innovations. This means that there is need for individuals to go through a curve of learning to take up new responsibilities due to expertise development

An important factor that makes changes in the Information System (IS) issues is IT infrastructure. E-commerce adoption can be enhanced by Information Technology (IT), since it utilizes technology and saves time and effort through collaboration, cooperation and contribution to government agencies. Data transformation, performance and storage are essential in the services of E-commerce and infrastructure upholds this. Therefore, the preparation of infrastructure should be done before consistent and effective introduction of E-commerce services.

External pressures can affect decision making by the management of a firm. They are considered outdoor factors or limitations that persuade objectives of the business. They can be policies of the government, legislation, agreements of trade, industry associations, competition, local communities and media.

2.5 Empirical Literature Review

Huang, Zmud, and Price (2010) argue that implementation of IT governance mechanisms, such as e-commerce facilitates configuration between business strategies and a firm's IT strategy, which eventually result in improved business performance. The authors opine that the unavailability of alignment between IT and business strategies reduces the probability of recognizing appropriate value because of IT investments. This is because when a firm employs e-commerce, it has the capacity to support its business strategy and, in this way, the firm can achieve its objectives, therefore resulting in enhanced business performance. Melville, Kraemer and Gurbaxani (2014) argue that, incorporation of e-commerce in a firm, facilitates communication within it and with its partners on how to improve business performance. Proper communication enables IT executive management to coordinate activities and guarantee that their responsibilities and roles are understood clearly by each stakeholder.

Karimi et al. (2010) suggest that e-commerce mechanisms bridge a firm's information technology and business units to enhance information distribution and to improve the strategic fit between the two organizational aspects for mutual organizational goal achievements. Increased organizational performance and competitiveness can be facilitated through proper arrangements and coordination of policies and strategies of IT related activities between the firm and the business (Bowen et al. 2007). Consequently, the definitive objective of amplified business value can be attained by creation of suitable e-commerce with well-deliberate execution framework that is predictable to cause enhanced profitability, operational excellence and customer satisfaction.

Klein, Rai and Straub (2010) argue that IT-based communication tools that are availed by e-commerce can organize external information exchanges to support coordinated actions in the face of opportunities and challenges. This is achieved by enabling real-time feedback from customers, IT-based social media tools that help in filtering information capabilities and consequently organize customer opinions, leading to better anticipation of changes in market

needs. Similarly, Wixom and Watson (2011) emphasize that e-commerce IT-based decision support systems and data warehouses help firms monitor data in real time, recognize patterns, and simulate strategic scenarios. This generally enable firms to sense and interpret business opportunities and challenges.

Yet IT competencies also enable firms to respond to opportunities and challenges, whether those responses are proactive or reactive in nature. Proactive responses, which lead to entrepreneurial agility, involve the ability to organize business processes to seize potential opportunities. Several aspects of IT infrastructure (e.g., IT planning capabilities) and IT skills (e.g., IT human resources) help firms foresee a wide range of IT-enabled scenarios and rapidly respond to opportunities, both of which are aspects of entrepreneurial agility. With the IT-based communication and coordination system, firms can increase knowledge reach and quality such that they and their stakeholders can participate in improvement to transactional processes.

Sambamurthy et al. (2003) reinforce this position by suggesting that a firm IT-system enhances a firm's dynamic capability which establishes a platform for launching competitive actions with speed, surprise, and disruption. However, the mere possession of these capabilities is not enough; they must be continually activated and exercised so that firms sense opportunities for entrepreneurship or threats that require their adaptive actions, then marshal the necessary resources and endowments to launch appropriate competitive actions. Piccoli and Ives (2005) argue that when firms operate in information-intense environments, their competitive performance depends on the interactions between IT competencies and other organizational capabilities. E-commerce enables business units to build agile capabilities by creating and maintaining resources related to multiple functional competencies, including IT competencies. Similarly, core marketing competencies, such as customer and competitor sensitivities, should enable firms to adjust to different market scenarios.

2.6 Conceptual Framework

A familiar, simplified structure formed by the conceptual framework helps in gaining of insight into phenomena that needs explanation. A conceptual research has a relationship with some idea or theory that is abstract. It is, in general, used in development of new concepts or reinterpretation of existing ones, the conceptual literature regarding the concepts and theories

explain the relationship of the variables, by philosophers and thinkers. Figure 2.1 is a conceptual model that shows dependent and independent variables used in the study. The dependent variable was adoption of ecommerce, while the independent variable was business performance.

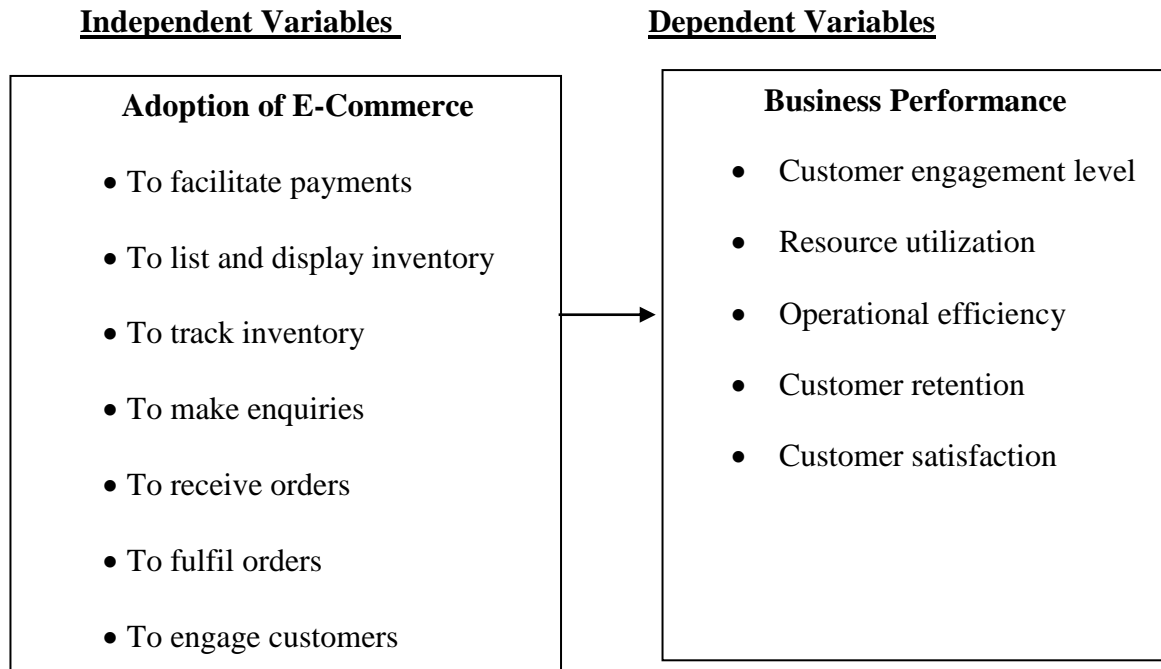


Figure 2.1: Conceptual Framework

2.7 Summary of Literature Review

The various studies conducted in Kenya on E-Commerce have been extensive and far reaching. The extent of adoption in many areas, for example the Tours and Travel field as studied by Wanjau, Macharia and Ayodo (2012) is well researched. Studies by government bodies such as the Communications Authority of Kenya (CAK) have also focused on E-Commerce specifically to understand the extent of adoption and the barriers within it. Much as these studies have been extensive, they have not focused on the automotive sector which leaves a knowledge gap.

When looking at E-Commerce adoption and business performance by firms in Nairobi, Omollo (2016) elucidates that there are several drivers that have contributed to the success stories in the Kenyan context. He identifies several drivers such as an expanding middle

class, internet penetration and growth in mobile phones. Even within this study, the focus is to the general market and not specific to the automotive sector.

Kinuthia and Akinnusi (2013) have extensively studied the barriers that face E-Commerce businesses in Kenya. When compared to other studies elsewhere, the barriers faced in the Kenyan market are similar. Cavanis and Manoochehri (2013) outlines the organizational barriers that affect the deployment of E-Commerce such as lack of management support that are corroborated by a similar study by Okiy (2005).

When looking at the above examples from the various studies done in Kenya, there is a clear consensus that a relationship between the adoption of E-Commerce and business performance exists. To some extent this relationship can be seen to be directly proportional whereby the more E-Commerce is adopted by a firm, the more the increase in business performance. However, there are still knowledge gaps in drawing similar conclusions in the automotive sector and this study will contribute towards addressing these.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter demonstrates the research methodology employed by this study. The chapter describes the proposed design, targeted population, data collection method and the data analysis.

3.2 Research Design

The design employed a descriptive research design. The process not only involves collecting and tabulation of data but also an attempt to obtain facts about the current state of affairs, (IOSR Journal of Research & Method in Education). In addition, descriptive design facilitates the process of acquiring individual's behaviour, real perceptions, attitudes and or standards in determining and reporting the nature of a condition about the target population. The research design was appropriate in this case because it intends to establish the individual's real perceptions to describe the way the situation is in relation to associated target population and more specifically being a social science research.

3.3 Population

The population was all automotive dealership firms in Nairobi, Kenya. The 2016 Economic Survey by the Kenya Bureau of Statistics put the number of Automotive dealerships in Nairobi at 100.

3.4 Sample Size

The sample population targeted by this study is thirty-four (34) automotive dealerships in Nairobi, Kenya. This size was targeted because it represents a fair sample size of the total population and is also due to financial constraints of targeting all the dealerships in Nairobi.

3.5 Data Collection

The study used primary data. The primary data was appropriate in picking of peoples' attitudes and perception as well as having subjective answers. A questionnaire was employed as the data collection instrument of choice as it is easy to develop and understood by the respondents. It adopted a Likert scale format whereby 5 represented a strong positive response and 1, the weak response. The questionnaire contained five sections. Section A collected the general demography of the respondents and the firm. Section B collected data

on the extent of adoption of E-Commerce by the automotive firms. Section C collected data on the drivers for the adoption of e-commerce by the automotive firms. Section D collected data on the performance of the firms. Section E collected data on the barriers to the adoption of E-Commerce by the automotive firms.

The questionnaire was given out using “drop and pick later” method on the targeted firms. The target respondents were Information Communication Technology Departments heads in each of the automotive firms.

3.6 Data Analysis

The questionnaires were collected from the firms and checked for completeness. After this, the variables were entered and coded in SPSS then analysis was done. The output was then represented in tables. General information was analysed using frequencies and percentages. To establish the extent of adoption as well as the drivers and barriers to adoption, the study employed Mean and Standard Deviation for each of these. To establish the relationship between adoption of E-Commerce and business performance, the study used a regression model.

The regression equation took the following form;

$$Y = \alpha + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 + \epsilon, \text{ where;}$$

Y = Firms Performance

α = Constant (Co-efficient of intercept),

X₁ = To facilitate payments

X₂ = To list and display available inventory to customers

X₃ = To track inventory from purchase to sale

X₄ = To make enquiries

X₅ = To receive orders

X₆ = To fulfil orders

X₇ = To engage customers

ϵ = Error Term

B₁ ... B₇ = Regression co-efficient of seven variables.

Analysis of Variance (ANOVA) was done to test the advantages of the model used and to find out how the adoption E-commerce affects the performance of automotive firms in Nairobi, Kenya. The researcher extracted the Analysis of Variance (ANOVA) statistics which helped understand the significance value. The researcher tested the study at 5% significance and 95% confidence level. If the results showed that the value lies in the acceptance zone, then the test was declared as true.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

The aim of this chapter is to discuss, to present and to help to interpret the findings of this research. The overarching objective of this study was to find out how the adoption of E-Commerce affects the performance of automotive firms in Nairobi Kenya. The data was collected using questionnaires that were administered to thirty-four (34) automotive firms.

4.1.1 Response Rate

The researcher administered 34 questionnaires to the targeted population. From this, 29 firms responded which represented 85.29% response rate. Therefore, the instruments were regarded as responsive and formed the basis for data analysis. Zhang (2009), posits that a response of 50% is sufficient to enable for the data to be analysed and presented.

4.2 Demographic Information

Demographic data is important in helping to understand the profile of the involved respondents and to tease out their background information such as their level of education. This is particularly key because it determines the quality of the information provided. The background of the firm is also sought, which is key in understanding its size in relation to the other targeted firms.

4.2.1 Respondents Level of Education

Individual level of education is highly associated with management ability and approach to solving challenges. The study requested the respondent to indicate their level of academic qualification. The output is analyzed in Table 4.1.

Table 4.1: Academic Qualification

Education level	Frequency	Percentage
Primary	0	0.00
Secondary	0	0.00
College	7	24.14
University	14	48.28
Postgraduate	8	27.59
Total	29	100.0

None of the ICT Department heads in all the automotive firms was found to have highest level of education as primary or secondary. This implied that majority of the directors and Information Communication Technology Departments heads held a high level of education as they had attained diplomas, bachelor's degree and post graduate level of education. Almost half of the respondents that is 48.28% held a bachelor's degree education. Respondents' high level of education enabled the study to collect accurate and quality data.

4.2.2 Duration of Service

Here, the researcher sought to find out how long the respondents had worked for the firm. The findings were analyzed, and summaries are given in Table 4.2.

Table 4.2 Duration of Service

Duration of Service	Frequency	Percentage
Less than 5 years	5	17.24
5 – 10 years	15	51.72
10 – 15 years	7	24.14
Over 15 years	2	6.90
Total	29	100.00

The data showed that over 82.76% of the ICT Department heads had served in their current firm for over five years and only 17.24% serving for less than five years. Most of the ICT Department heads had served their respective firms for a considerable period which puts them at a good position to provide the information required by this study.

4.2.3 Level of Management

Table 4.3 shows that 51.72% of the respondents are in the top management level, 27.59% of the respondents were in middle level while 20.69% of the respondents are in lower level of management. Therefore, this means that the respondents were able to give the required information with ease.

Table 4.3 Level of Management

Level of Management	Frequency	Percentage
Top Level	15	51.72
Mid-Level	8	27.59
Lower Level	6	20.69
Total	29	100.00

4.2.4 Years in Operation

The questionnaire sought to find out the year when the Firm was established. The number of years in operation was computed and output is shown in Table 4.4.

Table 4.4 Year when Firm was Established

Years in Operation	Frequency	Percentage
1-10 years	6	20.69
11-20 years	16	55.17
21-30 years	5	17.24
Over 30 years	2	6.90
Total	29	100.0

The study sought to establish the duration that different Automotive Firms were in operation. The study shows that over 79.31% of the Automotive Firms had operated for more than ten years while 20.69% of the Automotive Firm had operated for less than ten years. Therefore, the Automotive Firms were able to give credible information relating to this research.

4.2.5 Ownership of the firm

The study established that most (72.41%) of the automotive firms are locally owned, only 27.59% of the automotive firms are foreign owned. The findings were analysed, and summaries are given in Table 4.5.

Table 4.5 Ownership of the firm

Ownership of the firm	Frequency	Percentage
Local	21	72.41
Foreign	8	27.59
Total	29	100.0

4.2.6 Automotive Firm's Branches

From the research findings, the study revealed that most (44.8%) automotive firms had 21 to 40 branches across Kenya. 37.9% of the automotive firms had less than 20 branches across Kenya while 6.9% of the automotive firms had more than 60 branches. Summary of these result are shown in Table 4.6.

Table 4.6 Automotive Firms Branches

Number of Branches	Frequency	Percentage
0-20	11	37.9
21-40	13	44.8
41-60	3	10.3
More than 60	2	6.9
Total	29	100.0

Table 4.6 findings imply that most automotive firms' have good coverage and people can access their services across the country.

4.3 Adoption of E-Commerce

The questionnaire probed the extent to which the automotive firms adopted E-commerce for each of the applications in Table 4.7, using a scale of 1-5 where, 1=Not at all, 2=Small extent, 3=Moderate extent, 4=Great extent, 5=Very great extent. The mean and standard deviation of the scale were calculated and summarized.

Table 4.7 Adoption of E-commerce

Extent of Adoption	Mean	Std. deviation
To track inventory from purchase to sale	4.294	0.840
To receive orders	4.204	0.495
To make enquiries	3.760	0.559
To list and display available inventory to customers	3.785	0.229
To fulfil orders	3.665	0.393
To facilitate Payments	3.947	0.486
To engage customers	3.670	0.781

4.294 was the highest Mean which indicates a great extent of adoption whilst 3.670 was the lowest Mean which indicates a moderate extent of adoption. The result indicated that most automotive firms had adopted E-commerce for the following applications in a great extent; to facilitate Payments (M=3.947, SD=0.486), track inventory from purchase to sale (M=4.294, SD=0.840) and to list and display available inventory to customers (M=3.785, SD=0.229). Automotive firms had also adopted E-commerce in engaging customers (M=3.670, SD=0.781), make enquiries (M=3.760, SD=0.559) as well as receiving and fulfilling the orders. This study correlates to Chwelos *et al.*, (2011) who noted that many firms were in rush to adopt new technologies in their businesses.

4.4 Drivers of E-Commerce

The questionnaire sought to find out the drivers of E-Commerce in table 4.8 using a scale of 1-5 where, 1=Not at all, 2=Small extent, 3=Moderate extent, 4=Great extent, 5=Very great extent. The information was analysed in the Table 4.8.

Table 4.8 Drivers of E-Commerce

Drivers	Mean	Std. deviation
Availability of suppliers to support the system	4.347	0.695
Availability of technical staff to rollout the E-commerce platform	4.316	0.630
The level of external infrastructure development such as internet and smartphone penetration	4.212	0.252
The level of readiness by customers to use the E-commerce platform	4.154	0.223

Reduction of costs	4.001	0.215
Ease of use of E-commerce platform	3.856	0.848
Compatibility of the system with the existing ones in the organization	3.816	0.513
The support of top management in the implementation of E-commerce platform	3.806	0.360
Need to enhance security of customer transactions	3.754	0.529
The advantages of the system to the operations of the organization	3.730	0.595
Institutional pressures whereby competing firms have adopted the same	3.715	0.256
The size of the organization	3.045	0.684

4.347 was the highest Mean which indicates a great extent of the drivers whilst 3.045 was the lowest Mean which indicates a moderate extent of the drivers. The results established that most of the respondents to a great extent agreed that the adoption of E-commerce was motivated by; the advantages of the system to the operations of the organization (M=3.730, SD=0.595), Compatibility of the system with the existing ones in the organization (M=3.816, SD=0.513) and institutional pressures whereby competing firms have adopted the same (M=3.715, SD=0.256). Reduction of costs was also established to have led the firms to adopt the E-commerce as well as ease of use of E-commerce platform (M=3.856, SD=3.856). The size of the organization moderately led to adoption of the E-Commerce (M=3.045, SD=0.684). Further the availability of technical staff to rollout the E-commerce and the level of external infrastructure development such as internet and smartphone penetration motivated the adoption of E-Commerce by most of the automotive firms. E-Commerce adoption was also driven by the need to enhance security of customer transactions (M=3.754, SD=0.529) and the high level of readiness by customers to use the ecommerce platform. This was in line with Chwelos *et al.* (2011) who established that the relative advantage of the system, complexity and compatibility are the main factors which inhibit or encourage the adoption of an innovation.

4.5 Business Performance

The questionnaire probed for the firms to show the extent to which E-commerce adoption impacted the following business performance indicators. Using a scale of 1-5 where, 1=Not at all, 2=Small extent, 3=Moderate extent, 4=Great extent, 5=Very great extent. The mean and standard deviation were calculated as displayed in Table 4.9

Table 4.9 Business Performance

Business Performance Indicators	Mean	Std. deviation
Customer Retention	4.367	0.352
Customer Engagement Level	4.018	0.248
Operational Efficiency	3.952	0.382
Customer Satisfaction	3.913	0.698
Resource Utilization	3.835	0.749

As shown, 4.367 was the highest Mean which indicates a great extent impact on business performance whilst 2.333 was the lowest Mean which indicates a small extent impact on business performance. Finding in table 4.10 above indicate that the deployment of E-commerce solutions by the automotive firms impacted business performance as follows; customer engagement level (M=4.018, SD=0.248), resource utilization and operational efficiency (M=3.952, SD=0.382), customer retention and customer satisfaction (M=4.367, SD=0.352).

4.6 Barriers to Adoption of E-Commerce

The study wanted to find out the barriers to the adoption of E-Commerce using a scale of 1-5 where, 1=Not at all, 2=Small extent, 3=Moderate extent, 4=Great extent, 5=Very great extent. Mean and standard deviation of the scale were computed and shown in Table 4.10.

Table 4.10 Barriers to Adoption of E-Commerce

Barriers	Mean	Std. deviation
Inadequate financial allocation	4.463	0.535
Resistance by employees to adopt to the system	4.341	0.712
Inadequate staff to support the system	4.200	0.284
Lack of technical know-how to deploy the system	4.001	0.827
Lack of a clear ICT Policy to govern the system	3.058	0.852
Lack of proper infrastructure to support the system	3.026	0.829
Lack of top management support	2.427	0.846
Lack of management's approval	2.382	0.242
Lack of ownership by management	2.333	0.583

4.463 was the highest Mean which indicates a great extent of the barriers whilst 2.333 was the lowest Mean which indicates a small extent of the barriers. The respondents indicated that the main barriers to E-Commerce adoption were; resistance by employees to adopt to the system (M=4.341, SD=0.712), Inadequate financial allocation and staff to support the system (M=4.200, SD=0.284) and Lack of technical know-how to deploy the system (M=4.001, SD=0.827). Further, a few firms did not have a clear ICT Policy to govern the system and proper infrastructure to support the system (M=3.026, SD=0.829). Findings concur to Okiy (2005) who noted that the critical role of finance in provision of exceptional services cannot be overrated because it is the glue that binds the building, collections and staff together and allows attaining goals. In addition, lack of sufficient funds can be disincentive during adoption of innovations. Lastly the respondents agree that lack of top management support (M=2.427, SD=0.846), management approval and ownership by management was not a problem to the adoption of E-commerce by their firms.

4.7 Relationships between E-Commerce Adoption and Performance

The study conducted regression analysis to examine whether a relationship can be established between e-commerce adoption and performance of automotive firms in Nairobi, Kenya. The results are in Table 4.11

4.7.1 Model Summary

The model summary in Table 4.11 was used to test whether there existed substantial differences between the given independent variables and dependent variables. It was also used to find out the level of variation amongst these variables.

Table 4.11 Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.93	0.864	0.858	0.239

- a. **Predictors:** To facilitate Payments, To list and display inventory, To track inventory, To make enquiries, To receive orders, To fulfil orders, To engage customers.
- b. **Dependent variable:** Automotive Firm's Performance

The adjusted R squared was established to be 0.858 which means that the seven independent variables (To facilitate Payments, To list and display inventory, To track inventory, To make enquiries, To receive orders, To fulfil orders, To engage customers) studied contribute 85.8% of the automotive firms' performance while other factors not studied in this research contribute 14.2% of the performance.

4.7.2 ANOVA

Table 4.12 ANOVA^a

	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.543	7	2.649	46.474	0.023
Residual	1.197	21	0.057		
Total	19.74	28			

- a. **Predictors:** To facilitate Payments, To list and display inventory, To track inventory, To make enquiries, To receive orders, To fulfil orders, To engage customers.
- b. **Dependent variable:** Automotive Firm's Performance

The ANOVA results in Table 4.12 show F value of 46.47, which is significant at $0.000 < 0.05$. This signifies a model fit and implies a match between the regression model and the data which means that the use of regression analysis in this study was justified.

Table 4.13 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.77	0.451		8.359	0.000
To facilitate payments	0.181	0.121	0.146	1.496	0.143
To list and display inventory	0.469	0.079	0.126	5.937	0.000
To track inventory	0.140	0.023	0.145	6.087	0.000
To make enquiries	0.309	0.073	0.142	4.233	0.000
To receive orders	0.0241	0.079	0.126	3.051	0.004
To fulfil orders	0.463	0.079	0.126	5.861	0.000
To engage customers	0.473	0.073	0.045	6.479	0.000

- a. **Predictors:** To facilitate Payments, To list and display inventory, To track inventory, To make enquiries, To receive orders, To fulfil orders, To engage customers.
- b. **Dependent variable:** Automotive Firm’s Performance

The optimal regression model is therefore:

$$Y = 3.77 + 0.181 X_1 + 0.469 X_2 + 0.140 X_3 + 0.309 X_4 + 0.241 X_5 + 0.463 X_6 + 0.473 X_7$$

Where the p values of a regression are less than 0.05 then the regression constant is labelled as a good predictor and can be used in the model. All the regression constants in the model are important since their p values are less than 0.05.

Based on the study findings, if the independent variables (To facilitate payments, to list and display available inventory to customers, to track inventory from purchase to sale, to make enquiries, to receive orders, to fulfil orders, to engage customers) are held constant, performance of automotive firms in Kenya will be 3.77. A unit increase in the independent variable (to facilitate payments) will lead to an increase in performance of automotive firms by 0.181. A unit increase in the independent variable (To list and display available inventory to customers) will lead to an increase in performance of automotive firms by 0.469. A unit increase in the independent variable (To track inventory from purchase to sale) will lead to an increase in performance of automotive firms by 0.140. A unit increase in the independent variable (To make enquiries) will lead to an increase in performance of automotive firms by 0.309. A unit increase in the independent variable (To receive orders) will lead to an increase in performance of automotive firms by 0.241. A unit increase in the independent variable (to

fulfil orders) will lead to an increase in performance of automotive firms by 0.463. A unit increase in the independent variable (To engage customers) will lead to an increase in performance of automotive firms by 0.473.

4.8 Discussion of the Findings

The first objective of the study was to determine the relationship between E-Commerce adoption and the performance of the automotive firms in Nairobi, Kenya. For this the study used a regression model. The identified performance indicators which are; to facilitate payments, to list and display available inventory to customers, to track inventory from purchase to sale, to make enquiries, to receive orders, to fulfil orders, to engage customers, all had an influence in the performance of automotive firms in Nairobi, Kenya. They accounted for 85.8% of the performance of automotive firms in Nairobi, Kenya as represented by the Adjusted R squared (0.858). Other factors and random variations not studied in this research were found to contribute 14.2% of the performance of automotive firms in Kenya. This study concurs with Omolo(2016) who found out that organizations that have adopted E-Commerce perform better than those that have not.

For the second objective of the study which was to establish the extent to which the automotive firms have implemented E-Commerce, the study found out that most of the firms have adopted E-Commerce to a large extent. The firms use E-Commerce most to track inventory which had the highest mean of 4.294 which indicates a great extent of adoption. This was followed by using E-Commerce to receive orders at a mean of 4.204 which also indicate a great extent of adoption. The rest of the indicators of adoption (To make enquiries, to list and display inventory, to fulfil orders, to facilitate payments, to engage customers) had means that ranged from 3.670 to 3.947, which all indicate a moderate extent of adoption. A similar study conducted by Kinuthia and Akinnusi(2013) arrives at similar conclusions in regards to the extent to which firms have adopted E-Commerce.

The third objective of the study was to establish the drivers for adoption of E-Commerce by the automotive firms. The study found out that the highest drivers to adoption are availability of suppliers to support the E-Commerce system, availability of technical staff to rollout the system, the level of external infrastructure development, the level of readiness by customers to use the system and reduction of costs. All these drivers had a mean of between 4.001 and 4.347, which indicate a great extent of influence in the adoption of E-Commerce by the firms.

The other drivers which are; the ease of use of E-Commerce system, compatibility of the system to existing ones in the firm, support by top management and the need to enhance security of transactions had a moderate extent of influence towards the adoption of E-Commerce.

The fourth objective of the study was to establish the barriers to the adoption of E-Commerce by automotive firms in Nairobi, Kenya. The study found out that inadequate financial allocation, resistance by employees, inadequate technical staff to support the system and lack of the technical know-how to deploy the system are the greatest barriers to adoption. These had a mean of between 4.001 and 4.463 which indicates a great extent of influence as barriers. The rest of the barriers such as lack of a clear ICT policy, lack of proper infrastructure, lack of top management support, approval and ownership were found to exert a small to moderate extent of influence as barriers. This findings agree with those of Cavaness and Manoochehri(2013), who identified the lack of top management support as the key barrier to the adoption of E-Commerce solutions.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter puts forward the findings of the research and seeks to give pertinent conclusions and recommendations that can be of help to various interested entities such as scholars, government bodies and the automotive firms.

5.2 Summary of findings

The study clearly finds that respondents had a high level of education starting from Diploma and higher. The study also finds that most of the targeted automotive firms have been in operation for a long period of time, above five years. The Head of ICT departments that were targeted by the questionnaire have worked for the firms for more than five years which gives them the required history to be able to provide credible answers. The study has established that most automotive firms have adopted E-commerce and they use it to; track inventory from purchase to sale, receive orders, make enquiries, list and display inventory, fulfil orders, facilitate payments and engage customers. Using a scale of 1 to 5 where 1 was 'not at all' and 5 was a 'great extent' of adoption, the study found out that the extent of adoption of E-Commerce in these firms ranged from 'moderate extent to a 'great extent'.

The study revealed that the deployment of ecommerce is driven by the advantages it brings to the operations of the firm, compatibility of the system with the existing ones in the firm and external pressures whereby competing firms have adopted the same. Reduction of costs is also established to have led the firms to adopt E-commerce as well as the ease of use of the E-commerce platform. The size of the organization moderately leads to adoption of E-Commerce. Further the availability of technical staff to rollout E-commerce and the level of external infrastructure development such as internet and smartphone penetration motivates the adoption of E-Commerce. Adoption is also driven by the need to enhance security of customer transactions and the high level of readiness by customers to use the ecommerce platform.

This study has established the barriers to the deployment of E-Commerce by the automotive firms are; Resistance by employees to adopt to the system, inadequate financial allocation and staff to support the system and lack of technical know-how to deploy the system. Lack of proper infrastructure to support the system and lack of clear ICT Policy to govern the system

are also barriers to adoption. Lack of top management support, management approval and ownership by management were not barriers to e-commerce adoption.

The study has established that there's a strong relationship between the adoption of E-Commerce and the performance of the automotive firms in Nairobi, Kenya. It was established that the adoption of E-Commerce to facilitate payments, to list and display available inventory to customers, to track inventory from purchase to sale, to make enquiries, to receive orders, to fulfil orders, to engage customers, accounted for 85.8% of the performance.

5.3 Conclusion

The study concludes that the adoption of E-commerce by automotive firms, leads to an improvement in performance. It is evident that there's a strong relationship between performance and adoption of E-Commerce to; facilitate payments, track inventory from purchase to sale, list and display available inventory to customers, to engage customers, make enquiries as well as receive and fulfil orders. This relationship accounted for 85.8% of the performance of the automotive firms in Nairobi, Kenya.

The decision to adopt E-commerce is driven by; the perceived advantages it brings to the operations of the firm, the compatibility of the system with the existing ones in the organization and institutional pressures whereby competing firms have adopted the same. Reduction of costs also motivates the firms to adopt E-commerce. The size of the organization moderately leads to the adoption of E-commerce. Further the availability of technical staff to rollout E-commerce and the level of external infrastructure development such as internet and smartphone penetration drives the adoption of the E-Commerce in most automotive firms. The need to enhance security of customer transactions and the high level of readiness by customers to use Ecommerce platforms, are other key driving factors.

Lastly the study concludes that the main barriers are; resistance by employees to adopt to E-commerce, inadequate financial allocation and staff to support the system and Lack of technical know-how to deploy the system. Lack of proper infrastructure to support the system and lack of clear ICT Policy to govern the system is also a barrier to some firms. Lack of top management support, management approval and ownership by management were not barriers to adoption of E-commerce.

5.4 Recommendations

The researcher recommends that automotive firms need to incorporate all the aspects of E-commerce into their overall adoption strategy. The automotive firms need to find out ways of encouraging employees to make use of E-commerce. If employees are encouraged and motivated by the top management to use E-commerce, the adoption becomes much easier. It is therefore recommended that the management of automotive firms need to incorporate motivation and incentive into the overall E-commerce strategy. It is also incumbent on the employees of these firms to enhance their skills by taking lessons on E-commerce and to keep abreast with emerging technologies to remain relevant in the ever-changing modern workplace.

Since E-commerce is increasingly becoming an important and indispensable tool for conducting business, the government should come up with relevant policies that support its adoption by eliminating the known barriers to adoption that are related to policy and regulation. In addition, owners and employees of automotive firms should be encouraged to regularly attend workshops and courses to constantly improve on their technical skills and knowledge of E-commerce.

5.5 Limitations of the Study

The scope of this study was limited to automotive firms in Nairobi, Kenya which consequently, excludes firms in other towns. The study is also limited to business performance as an indicator of E-Commerce adoption while there could be other indicators. Another key limitation of the study is the focus on Automotive dealerships as a sub-segment of the wide automotive sector. The automotive sector is wide, encompassing sub-segments such as spare parts, garages, motor oil, and motor tracking.

5.6 Recommendation for Further Research

The adoption of E-commerce by a firm is highly dependent on the existing government policies and regulations. A follow up study should be done to find out how government policies and regulations affect the adoption of E-commerce. A study should be conducted on automotive firms outside Nairobi to understand the extent of E-Commerce adoption and whether similar conclusion can be drawn in comparison to this study. It will also be important to study the other automotive sectors such as spare parts retail, motor vehicle garages, motor oils and car tracking, to know the extent of E-Commerce usage.

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APPENDICES

Appendix I: Questionnaire

This research is on E- Commerce and organization performance of automotive companies in Kenya. Please provide the required responses to the best of your ability. Your honest responses to the questions are of great importance to the study.

SECTION A: GENERAL INFORMATION AND BIO DATA

FIRM

1. In what year was the firm established? _____

2. Ownership of the firm

Local []

Foreign []

3. How many branches does the firm have? _____

(more demographics from internet)

RESPONDENT

4. Which is the highest level of Education you have attained. Please tick

A	Primary	
B	Secondary	
C	College	
D	University	
E	Postgraduate	

Others, please specify _____

5. How long have you worked here?

A	Less than 5 years	
B	5 – 10 years	
C	10 – 15 years	
D	Over 15 years	

6. At what level of management are you?

A	Top Level	
B	Mid-Level	

C	Lower Level	
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SECTION B: EXTENT OF ADOPTION OF E-COMMERCE

7. Using the scale below, indicate how your firm has deployed E-commerce for each of the applications in the table below.

**1 = Not at all 2 = Small extent 3 = Moderate extent 4 = Great extent
5 = Very great extent**

	Extent of Adoption	Not at All	Small extent	Moderate extent	Great extent	Very great extent
A	To facilitate Payments					
B	To list and display available inventory to customers					
C	To track inventory from purchase to sale					
D	To make enquiries					
E	To receive orders					
F	To fulfil orders					
G	To engage customers					

SECTION C: DRIVERS OF E-COMMERCE

8. Using the scale below, indicate how the following drivers led to the adoption of E-Commerce in the firm

**1 = Not at all 2 = Small extent 3 = Moderate extent 4 = Great extent
5 = Very great extent**

	Drivers	Not at All	Small extent	Moderate extent	Great extent	Very great extent
A	The advantages of the system to the operations of the organization					
	Compatibility of the system with the existing one in the organization					
C	Reduction of costs					
D	Institutional pressures whereby					

	competing firms had adopted the same					
E	Ease of use of E-commerce platform					
F	Availability of suppliers to support the system					
G	The support of top management in the implementation of E-commerce					
H	The size of the organization					
I	Availability of technical staff to rollout the E-commerce					
K	The level of readiness by customers to use the ecommerce platform					
L	The level of external infrastructure development such as internet and smartphone penetration					
M	Need to enhance security of customer transactions					

SECTION D: PERFORMANCE OF THE FIRM

9. Using the scale below, indicate how the firm has performed for each of the following business performance indicators.

1 = Not at all 2 = Small extent 3 = Moderate extent 4 = Great extent

5 = Very great extent

	Business Performance	Not at All	Small extent	Moderate extent	Great extent	Very great extent
a	Customer Engagement Level					
b	Resource Utilization					
c	Operational Efficiency					
d	Customer Retention					
e	Customer Satisfaction					

SECTION E: BARRIERS ENCOUNTERED IN THE ADOPTION OF E-COMMERCE

10. Using the scale below, indicate how the factors below were barriers to the deployment of E-Commerce in your firm.

**1 = Not at all 2 = Small extent 3 = Moderate extent 4 = Great extent
5 = Very great extent**

	Barriers to Adoption	Not at All	Small extent	Moderate extent	Great extent	Very great extent
a	Lack of top management support					
b	Lack of management approval					
c	Lack of ownership by management					
d	Inadequate financial allocation					
e	Inadequate staff to support the system					
f	Lack of technical know-how to deploy the system					
g	Lack of a clear ICT Policy to govern the system					
h	Resistance by employees to adopt to the system					
i	Lack of proper infrastructure to support the system					

THANK YOU SO MUCH FOR YOUR TIME

**Appendix II: List of major companies in the Automotive industry in Kenya between
2013 to 2017**

1	Toyota Kenya	18	Pewin Motors Limited
2	Isuzu East Africa	19	Subaru Kenya
3	NISSAN Kenya	20	Car and General Limited
4	Rift Motors Company Ltd	21	RMA Motors Kenya Limited
5	CMC Motors Ltd	22	DT Dobie
6	Simba Corporation	23	Amazon Motors
7	Marshalls East Africa	24	Urysia Ltd
8	Mobius Motors	25	Associated Motors Ltd
9	Minerva Special Purpose Vehicles	26	Multiple Houliers Group
10	Transafrica Motors	27	Bavaria Auto Ltd (BMW)
11	Ashok Leyland Ltd	28	Foton Motor Kenya Ltd
12	TATA motors	29	Sameer Africa Limited
13	NECST Motors - Volvo	30	Scania East Africa Ltd
14	Armomax Kenya	31	Lota Automobiles Ltd
15	Chery Automobile Stantech Motors	32	A-Plus Motors
16	Gigi Motors Ltd	33	Sean Garstin Motors
17	Karen Auto Mart Ltd	34	Clyde Motors Company Ltd