EFFECT OF E-COMMERCE ON PERFORMANCE IN AGRICULTURAL SECTOR IN KENYA: A CASE OF TWIGA FOODS LIMITED

BY

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UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SUMMER 2019
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A Research Project Report Submitted to the Chandaria School of Business in Partial Fulfilment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

SUMMER 2019
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: ___________________________ Date: _________________

Mohamed Mire (ID: 653950)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: ___________________________ Date: _________________

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Dean, Chandaria School of Business
ABSTRACT

The purpose of this study was to determine the effect of e-commerce on performance in agricultural sector in Kenya with Twiga Foods as the case study. The study was guided by the following research questions: What is the effect of e-commerce mode of payments on performance of Twiga Foods? What is the effect of e-commerce security factors on performance of Twiga Foods? What is the effect of internet availability on performance of Twiga Foods?

The study used descriptive research design because it enabled both collections of qualitative and quantitative data without influencing the environment of the study and also entailed the descriptions of the attributes the target population exhibited. The target population for this study comprised of 33 managers and supervisors working at Twiga Foods were used as a sample size that has been determined through a census. Simple random sampling was used as a sampling technique and a closed ended questionnaire was used for data collection. Data analysis used both descriptive and inferential statistics whereby descriptive statistics analyzed the means and standard deviation while inferential statistics was used to analyze correlational analysis and regression analysis. A statistical Package for Social Sciences (SPSS) software version 24 was used in analyzing the findings. The results and findings were presented using tables and figures.

The study established that e-commerce mode of payment had a strong and positive relationship with performance, r (0.847); p-value < 0.01. The results of the regression analysis indicated that 71.8% of changes in Twiga Foods performance is explained by e-commerce mode of payment. The results of the study showed that internet availability had a significant relationship with performance, r (0.558); p-value < 0.01. While the results of the regression analysis showed that 31.1% of changes in performance of Twiga Foods is explained by internet availability. Lastly, the findings of the study showed e-commerce security factors had a statistically significant relationship with performance, r (0.493); p-value < 0.01. And the R-square of 24.3% indicated that changes in performance is explained by security factors.

This study concluded that e-commerce mode of payment enhances service delivery to customers since potential clients are able to conveniently make payments on their purchases using the best payment alternative that makes them comfortable. Secondly, internet availability is essential for business performance. Availability of internet services supports
e-commerce operations to run effectively since e-commerce activities require internet for it to run efficiently. The study has also established that e-commerce security factors are crucial for business performance of e-commerce business. E-commerce security factors influence customer trust as well as satisfaction since customers are concerned about their safety when accessing online shopping applications and websites. Lastly, having fraud detection mechanisms enhances customer satisfaction as well gaining a competitive advantage for the organization.

The study recommended that Twiga Foods should implement various mode of payments to enhance their business performance as well as its market share. This attracts more customers into the site as they have various options to choose from on how to make payment for goods. Secondly, the company should partner up with potential partners and support initiatives that are in line with the improvement of internet service supply in the country to enhance e-commerce business. Thirdly, Twiga Foods should develop fraud detection mechanisms that will ensure safety to their customers when accessing the website. Fraud detection mechanisms will enhance customer trust as well as loyalty that is critical for the company’s business success. Lastly, Future studies should be carried on other sectors like pharmaceuticals, hotel industry, retail industry and education to establish the effect of e-commerce on performance.
ACKNOWLEDGEMENT

I am grateful to the almighty God for the good health that was necessary to complete this project. I would also like to express my deep gratitude to my supervisor, Dr. George Achoki for offering guidance throughout the research period. His guidance based on immense knowledge and expertise in Finance helped me a great deal in completing this thesis. Lastly, I would like to thank my family for the material and spiritual support throughout my MBA program.
DEDICATION

This project is dedicated to my family for their love and endless support to ensure that I acquire this quality education.
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Electronic commerce refers to the utilization of the Internet to showcase, purchase and sell products and enterprises, trade data, and keep up electronic connections between member substances (Alharbi & Hodkinson, 2013). In light of its showed effect in modern retail showcases, web-based business is accepted to possibly build and benefit in farming advertisement by expanding deals and exchange costs. The formation of electronic markets that are required to be more straightforward and aggressive than physical markets may pull in more purchasers by expanding request and improving the company's key position with clients looking for explicit specialty items or having geological limitations. Be that as it may, due to the moderately new condition of web based business in horticulture, its effect has not been generally estimated and archived (Ndung'u & Waema, 2012).

Currently, the notion of the agricultural producers’ usage of computers and the Internet has increased dramatically in recent years. In 2012, 60% of US farms had Internet access and 63% had access to a computer, compared to 29% and 47% in 1995, respectively (Warren, 2014). Among these farms, 43% used computers for farm business, 19% purchased agricultural inputs over the Internet, and 16% used the Internet to conduct marketing activities. According to Chau (2013), many aspects of computer and internet use in agriculture may be attributed to e-commerce, which is defined as the use of the Internet to market, buy and sell goods and services, exchange information via Internet, and create web-based relationships between participant entities. Sheikh, Shahzad and Ishaq (2017) based on the data from the 2000 Agricultural Resource Management Survey (ARMS), found that 83% of US farmers used the internet for price tracking, 56% used it to access agricultural information services, and some (unreported percentage) used the Internet to keep records and transmit data to clients.

There has been much proof that web-based business offers a significant open door for cost reduction and demand improvement. In spite of the fact that the qualities of some agri-nourishment items present a couple of difficulties for those wishing to advertise items through web based business, there is still much hopefulness about the potential accomplishment of web based business in horticulture (Ariffin, Mohan, & Goh, 2018). The abnormal state of fracture in the sustenance production network fortifies the desire for Agri-
nourishment E-trade. The arrangement of sustenance expands on a vertical chain ensuing creation, administration and exchanging forms that range from the generation of horticultural contributions to the conveyance of conclusive nourishment items to buyers. AE means bringing e-system into the collaboration and exchanging exercises between members and changing the arrangement and connections at different stages and linkages of the sustenance inventory network (Boateng & Heeks, 2014).

E-commerce business and its different aspects remained heavily examined topic, in any case, the majority of the study references created economy nations and regions that are almost no examinations for feeble economy countries. Jamaluddin (2013) revealed that E-Commerce practices of ranchers in the investigation territory of Trichy region are still at infant arrange. The snags and compels are poor internet network, overwhelming charges by private internet players, absence of program kept running by ITC's agri-business division in North India. With regards to Mumbai, Singh (2012) uncovered that around 37% of respondents were willing to purchase staple on the web if the alternative is given. The remaining level of the respondent may or may not purchase basic food item online due the components like physical examination and security issues. It likewise discovered that most of the respondent believe that purchasing basic food item is beneficial. They discovered it efficient and keep away from long line (Kumar & Timalsina, 2016).

In the US another study conducted involving 200 farmers in the Great Plains states of Kansas, Iowa, Nebraska, and Oklahoma found that 50% of surveyed farmers used the internet to obtain information on commodity markets. Additionally, 45% used it to gather technical information on inputs, 20% to retrieve financial information, 70% to collect weather information, and 25% to obtain information on agricultural policy (Li & Xie, A strategic framework for determining e-commerce adoption, 2012). E-commerce is believed to have the potential to increase profitability in agricultural markets by increasing sales, as well as decreasing costs through greater efficiency of operations and lower search costs. Gains in efficiency could result from the reduction of inventory levels, transportation costs, information costs, and order and delivery times (Chambers, Hopkins, & Nelson, 2011). Moreover, the creation of electronic markets that are expected to be more transparent and competitive than physical markets, may attract more consumers and thus increase demand and improve the firm’s strategic position with customers seeking specific niche products or having geographical restrictions. However, due to a relatively new and infant state of e-
commerce in agriculture, its impact has not been widely measured and documented (Warren, 2014).

E-commerce in Australia has revolutionized the way business is carried out impacting every aspect of a business from record and account keeping to the new marketing and promotion aspects, communication, banking and products or service search while at the same time offering small and medium enterprises an opportunity to reach potential customers from further away than ever before (Leong, Ewing, & Pitt, 2013). The use of internet and its related technologies have made a substantial impact on the way companies conduct businesses in Australia and around the world. Australian companies just like their international counterparts have heavily invested with the purpose of leveraging the internet and transform their traditional businesses into electronic businesses in the last seven years. Electronic businesses claim a sizeable share of the overall IT budgets in most companies whether they are small, medium or large, however, business managers are under pressure to justify the costs of electronic business to ensure that the investments will yield the intended returns (Singh & Byrne, 2015).

In the developing world, smallholders in agribusiness are viewed as distraught in the agri-nourishment store network and pay development expenses that represents a typical and basic issue for policymakers (Zeng, Jia, & Wan, 2017). It is significant for smallholders to effectively access the market notwithstanding, they face numerous challenges here. Because of their little scale, unit exchange expenses are high practically in all exchanges. The inescapable defects of business sectors in creating nations, for example, absence of data on costs and advances, absence of associations with set up market on-screen characters, bends or nonattendance of information and yield markets, and credit limitations, regularly make it hard for smallholders to exploit advertise openings (Boateng & Heeks, 2014). To enable smallholders to address the wasteful aspects and obstructions to the market, two fundamental methodologies have been advanced. The main concerns making aggregate move by setting up rancher associations, for example, farming cooperatives. Acting by and large, smallholders might be in a superior position to deal with purchasers and middle people, lessen the acquisition cost of data sources, and acquire more market data and approach support. The subsequent methodology is to advance contract game plans among smallholders and agribusiness firms (Ayuma, 2011). In contract, cultivating smallholders organize their creation and offer the essential items to preparing or appropriation firms at an earlier concurred value as indicated by the marked contract.
Indeed, even in nations with poor foundation and access to information innovation, proof exists that dynamic enterprises and governments have taken focal points of the potential outcomes offered by E-Commerce with facing many obstructions, for example, monetary, sociopolitical and cognitive factor, phonetic, framework market size and E-Business costs. In contrast to gadgets, books, sporting products, pharmaceuticals, and even garments, there are inalienable downsides to setting off to the web to get groceries delivered. 4% of shoppers in Los Angeles were purchasing food supplies on the web, and only 8% in Seattle (Alam, 2014).

In the African context, Nigeria is one of the most well-known country that agriculture has taken roots. The history of agricultural marketing in Nigeria shows that the British government created a national marketing board in 1946, immediately after the Second World War (Frempong, 2013). Nigeria has the Abuja electronic agriculture initiative that focuses on enhancing sustainable agricultural development and food security through improvements in the use of information, communication and its associated technologies in the sector. Electronic agriculture can be very complex process that requires an extensive contributions and consultations that involves the widest possible range of stakeholders, this is because it goes beyond technology, to promote an integration of technology with multimedia, culture, knowledge with the main purpose being to improve communication and learning processes between different actors in agriculture locally, regionally and worldwide (Dogo, 2014). Support of standards, facilitation, technical assistance, capacity building and education are all major components that are required for Nigerian E-Agriculture initiative.

The advent of e-commerce, farming produce has remained solely marketed and exported traditionally from the market niches and through the Agricultural Marketing Board of Nigeria (Dogo, 2014). Although this marketing board helped to develop Nigerian agricultural commodities for local and export markets, the Board suffered setbacks and the agricultural commodity markets experienced failures which ultimately led to the scrapping of the Board. After the farmers had experienced a lot of problem, they articulated for new methods of increasing their production. The launch of a mobile Internet unit (MIU) was one of the remarkable strategies that helped the farmers in Nigeria to advance in the usage of the internet and e-commerce in agricultural production. This policy and the implementation of the project are to enable the nomadic farmers, whose settlement is
always outside the urban cities, the opportunity to access market information for their live
stock market (Emmanuel, 2012).

Niger which is in the western part of Africa that remains inhibited with about 11 million
population. Niger is another significant country in Africa that has undergone drastic
development in the agricultural sectors. The ideology of e-commerce had developed in this
country due to the influence from Greece (Ejiogu, 2015). The main purpose of the initiative
by Greece is play by the introduction and boosting of ecommerce to improve the notion of
agribusiness. The relationship that exists between these countries has facilitated the
movement of these two countries from real marketplace to a virtual marketplace which
basis its application on e-commerce. This initiative is taking roots to east Africa, countries
like Uganda, Sudan and Kenya. For instance, taking into consideration the imitative that
is facilitated in Uganda, the concept of communication and stakeholder’s involvement has
increased thus improving the concept of ecommerce.

In Uganda, the advent of the internet has seen entrepreneurs capture ideas and infuse
technological innovations to create new products, services and business models. The
internet phenomenon has also given rise to purely internet based companies also known as
online companies which is a name that applies to a firm that conducts most of its operations
online despite engaging physical logistics (Magara, 2012). The convenience of online
shopping has become a compelling factor to the consumers who value the ease and
efficiency of purchasing some services online such as travel packages. A global survey was
done and found out that some products that are purchased online are universal and the
leading products include; books, fashion products, airline tickets, hotel reservations,
electronic products, tour reservation, nutrition supplies and cosmetic products from
different countries across the world. Online companies like Amazon have the greatest
appeal with one third of the online consumers across the world preferring them to sites that
have traditional brick and mortar (Boateng & Heeks, 2014).

Taking root to Kenya in particular, the internet has created a shared, real time commercial
space and the degree to which companies are leveraging the unique internet market space
making an incredible increase of innovative products and services making e-commerce to
be one of the most important swathe of technological advances (Weigert, 2017). The
number of internet users in Kenya has been steadily increasing and this growth has offered
the impetus and the opportunities for global and regional electronic e-commerce. However,
with the internet, various attributes of the local environment both socioeconomic and infrastructural have created significant level of variation when it comes to the acceptance of e-commerce in Kenya (Ndung’u & Waema, 2012). Over time many studies have been carried out and different models have been developed in identifying the diffusion of e-commerce in different environments, the models have looked at infrastructure covering connectivity hardware and software, telecommunication operators, transport system and product delivery while supporting services such as electronic payments and messaging, have been looked as the primary diffusion factors of e-commerce in Kenya (Ejiogu, 2015).

With Kenya’s population of about 43 million people making it the seventh largest country in Africa, e-commerce is expected to directly and indirectly create new jobs while on the flipside lead to job losses despite the United Nations indicating that the net effect of e-commerce in Kenya will be positive (Malenya, 2017). E-commerce has great potential of offering massive employment opportunities for the young population in Kenya especially for those with higher skills since internet companies seem to be posing a great advantage in terms of low setup costs as opposed to the traditional brick and mortar business models. Young entrepreneurs can then launch their business ventures that will support the agricultural sector by coming up with innovative products and services that will enhance operations of farmers through technology (Wangari, 2012).

Twiga Foods is an e-commerce platform that directly links farmers and vendors to fair and trusted modern markets to provide a complete supply chain in Kenya for quality produce in the urban areas (Juma, 2018). Twiga Foods runs a cashless platform in which vendors can order and pay for their fresh food and vegetables from farmers, resulting to relatively low prices and more efficient supply chains by eliminating the multiple layers of middlemen, however, its impact in agriculture industry in Kenya has not been documented. The platforms used by Twiga Foods uses the mobile phone technology in matching the demand and supply, aggregate market participants while at the same time finding buyers for the farmers’ produce in Africa’s large and highly fragmented vegetable and fruit market. The system is regarded to be a win for both parties where farmers are guaranteed access to a fairly transparent, a mobile marketplace and vendors can consistently source high quality produce that is conveniently delivered for free to the doorstep by Twiga Foods (Otieno, 2018).
1.2 Statement of the Problem

The cutting edge for most business globally today is electronic commerce. Electronic commerce has become the main vehicle for most businesses to have presence in markets that they never thought they would invest in due to rapid advancements in the internet hardware and software and the supporting infrastructure making it more popular across many industries worldwide, although with little focus on the agricultural sector (Dsouza & Joshi, 2014). The use of ICT in different industries has been able to make valuable strides towards attaining the goals of the organizations that has resulted to customer satisfaction and profitability since the integration of e-commerce covers a wide range of application like electronic marketing, customer support services, electronic payment systems and ordering and delivery cutting across nearly all industries (Boateng & Heeks, 2014).

Electronic commerce is a relatively new concept in the Kenyan market and many companies are considering going into the space of e-commerce due to numerous advantages that comes along with its adoption (Juma, 2018). Despite the excitement of many businesses to invest in e-commerce technology, the challenge is the adoption and sustainability in the long run to recover their set up costs, make profits and grow the business to yield the intended benefits of the e-commerce just like any other sector that has been successfully based on e-commerce technology (Magara, 2012).

Various studies have been conducted in regard to e-commerce but it is evident that most researchers have focused on the adoption and usage of e-commerce, however studies on the effect of e-commerce on agricultural sector in Kenya, generally has not been documented depicting the existence of knowledge gap that needs to be addressed. Ayuma (2011), conducted a study on e-commerce strategy and performance of commercial banks in Kenya and found out that there is a positive relationship between e-commerce strategy and performance of commercial banks in Kenya, Wangari (2012), did a study on the effect of electronic commerce on the financial performance of airlines in Kenya and the study showed that there exist a weak positive relationship between e-commerce and financial performance of the airlines, while Malenya (2017), carried a study on the factors that influence the growth of e-commerce in Nairobi Kenya and found out that the introduction of internet services had an average influence on the growth of e-commerce in Nairobi.

Based on the above studies, it is clear that there exist a gap in regard to the effect of e-commerce on performance of agricultural sector in Kenya. Therefore, this study sought to
address the knowledge gap by seeking to determine the effect of e-commerce on performance within agricultural sector with a focus on Twiga Foods.

1.3 Purpose of the Study
The purpose of this study was to determine the effect of e-commerce on performance in agricultural sector in Kenya based on Twiga Foods as a case study.

1.4 Research Questions
1.4.1 What is the effect e-commerce mode of payments on performance of Twiga Foods?
1.4.2 What is the effect of internet availability on performance of Twiga Foods?
1.4.3 What are the effect of e-commerce security factors on performance of Twiga Foods?

1.5 Significance of the Study
1.5.1 Twiga Foods
Twiga Foods as a company of interest will get to acknowledge the effect of e-commerce in agricultural sector since the findings will clearly bring out the actual findings based on the company’s response. Twiga Foods will also be able to formulate good decisions pertaining to their company when it comes to the issues of electronic commerce.

1.5.2 Agriculture Sector
The agricultural sector and the industry as a whole will benefit from the findings on how exactly e-commerce influences performance in the agriculture industry. This will enable the players in the sector to make informed decisions when it comes to the role of e-commerce in their business as well as operations.

1.5.3 Policy Makers
Policy makers and the regulators of the agriculture industry will gain insights on the effect of e-commerce on performance of agricultural sector, hence, they will be able to formulate a governing framework and policies that will help the industry prosper towards meeting the needs of the consumers.
1.5.4 Researchers and Scholars

Researchers and Scholars will benefit from the findings of the study by gaining more knowledge on the subject area. They will also be able to use the study for future reference when dealing with the topic of e-commerce and the performance of agricultural sector.

1.6 Scope of the Study

This study investigated the effect of e-commerce on performance of agricultural sector in Kenya. This study targeted departmental managers, supervisors working at Twiga Foods. A total population of 33 respondents consisting of both managers and supervisors was used in this study. The study was limited in scope as it targeted departmental managers and supervisors only. The study took place in Riverside Drive Nairobi, where Twiga Foods offices are located and it run for a period of 8 months from August 2018 to April 2019.

1.7 Definitions of Terms

1.7.1 E-commerce

E-commerce which is also known as electronic commerce refers to the buying and selling of goods and services over the internet and the transfer of money instruments and data to carry out these transactions. E-commerce can be used often to refer to the selling of a physical product online but it can as well be described as any kind of commercial transaction that is facilitated through the internet (Al-Somali & Clegg, 2015).

1.7.2 Agriculture Industry

The agriculture industry can be defined as the science, art or the occupation of cultivating land, raising of both cash and food crops and feeding and raising of various livestock made up of enterprises that are engaging in these activities (Runge, 2016).

1.7.3 Mode of Payment

Mode of payment refers to the means by which payments are made this includes the use of check, cash, credit card and even the use of mobile money transfers (Chambers, Hopkins, & Nelson, 2011).
1.8 Chapter Summary
This chapter introduced the background of the study, statement of problem to highlight the issue at hand, purpose of the study and research questions that guided the study. Significance of the study was presented highlighting various stakeholders that were to benefit from the findings of this study, scope of the study was presented as well as the definitions of key terms. Chapter two presents literature review based on the research questions while Chapter three presents the research methodology of the study. Chapter four covers results and findings. Chapter five presents discussion, conclusion and recommendations.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review done previously by different authors on the effects of e-commerce on agricultural sector. The study will be guided by the following research questions: What is the effect of e-commerce mode of payments on performance of Twiga Foods? What is the effect of internet availability on performance of Twiga Foods? What is the effect of e-commerce security factors on performance of Twiga Foods?

2.2 The Effect of E-commerce Mode of Payments on Performance

The internet goes beyond the transaction itself to everything that comes, from marketing and product display to order-tracking and sometimes even delivery. However, unlike the commercial online services which reserve their services for their subscribers and selected merchants, the Internet is open to everyone (Emmanuel, 2012). Furthermore, in line with the definition of E-Commerce project which is taken to be synonymous with E-Business making the two to be one and the same thing, one of the benefits of E-Commerce which is also a key attraction is that it helps businesses in enhancing its Production, Customer relationship management and Internal management processes through online transactions (Swatman, 2014).

Electronic commerce is shaping all business functional areas and their significant task, ranging from advertising to paying of bills. Electronic commerce has attracted a significant attention in the last decade (Ayuma, 2011). This high rate attention has resulted in the significant progress towards strategies, requirements, and the development of e-commerce applications. Electronic commerce provides lower cost per business transaction, especially in respect to mailing and paper costs. Customer satisfaction is heightened due to better access to order and promotional data. Organizations now share information with competitors, since economic and cultural boundaries are disappearing (Gajendra & Wang, 2014).

China's economy in the globalization and system of condition confronting openings also, challenges, the electronic trade to the attributes of the high productivity and ease become worldwide ventures to improve focused power significant, implies that individuals focus on the electronic business on the ascent, nations to build the force of the concentrated on
agriculture (Cai, Lang, & Zhang, 2015). The compelling device for advancing the dissemination of agrarian items is increasingly more consideration by the state. The internet business of horticultural items is based on modern results of electronic trade in ongoing years started to huge upscale development. Due to the uncommon properties of horticultural items taste one of a kind and capacity of transient debasement and utilization of crisp action, various locals, various sorts of farming items with various customer gatherings, stockpiling and transportation necessities, as far as the board and monetary factors predominantly contrast in the effectiveness of horticultural items dissemination and flow cost, as far as data factors fundamentally shows in the trading of farming items free market activity data exactness and practicality necessities shift, its thorough presentation on the distinctions of rural items online business activity mode (Boateng & Heeks, 2014).

At present, the improvement of agricultural informatization is still in the essential stage, the improvement of horticultural modernization in China is continually attempting, data administration in rural generation what's more, activity isn't sufficient, need to keep on advancing agribusiness and farming products cause industry and data industry firmly incorporated, rural online business and farming advancement is the mix of data industry and rural improvement (Cai, Lang, & Zhang, 2015). The leap forward of the normal advancement of farming and data industry is the agrarian informatization. As of now, web based shopping has turned into the standard, crisp farming items on the web shopping in the nation progressively spread. The job and points of interest of web based business has been government, business and purchaser acknowledgment, with the advancement of data industry advancement arrangements and neighbourhood government to advance web based business, advancement activities and business web based business applications, web based business in the rural improvement has been exceptional advancement and application, particularly in rural items has assumed a positive job in agrarian items, has risen an enormous number of undertakings and people occupied with rural online business tasks and administrations, the nation's significant internet business administration stage has been based on a progression of farming items and horticultural internet business exchanges keep on updating (Ozturk, 2016). Notwithstanding the improvement of various chain systems identified with rural product course, new rural items exchanging business sector has progressed toward becoming progressively dynamic, has risen in various online business endeavours and farming items sold in the power plan of action they utilized so as to meet the necessities of the current financial and social improvement in China. The electronic
trade has assumed an inexorably solid job in boosting the course of farming items and agriculture advancement.

Ecommerce legitimizes its position as a part and parcel of everyday societal transaction on the basis that it offers convenience in terms of doing businesses. It helped solve the main problem affecting businesses and performance and added up to the advantage of getting business to expand more efficiently and at rather lower costs. For any mode of commerce to occur there has to be an effective mode of transfer of funds (McDermott, 2015). The transfer circuit involves transfer from client to buyer, from client personal banking account to the mechanisms in which they are used to effect the ecommerce transactions and an effective way of refund of cash to the buyer in case of a dissatisfaction.

With the question of mode of payment comes the concept of security for funds against any fraudulent activities. Money transaction being an issue of sensitivity as it is always under constant attraction from fraud has a very high position of either getting the ecommerce industry to a total deathbed or rising to newer and greater heights. According Buck (2016) there have been massive investments in the fields of security in the ecommerce industry especially involving the issue of cash transfer and modes of payment. Research on the safer methods of transaction (modes of payment) seem to take the major share of investment cash. With every ground-breaking research, finding on better and safer modes of payment is the disappointment by the researching team on the weakness of the findings (weakness of the mode of payment method) and this sets them back looking into newer ways of effecting a safer modes of transfer of payments.

This aspect has made E-commerce become a necessary component of business strategy as well as a strong catalyst for economic development in the emerging global economy; of which developing nations of the world have become a critical mass because they have become the major drivers of the global GDP growth (Dsouza & Joshi, 2014). When compared to the developed nations, whose markets have become matured thereby living little room for growth opportunities, and also more importantly how consumers have responded to the growth and development of E-Commerce in developing economies.

This has been facilitated by the integration of information and communications technology (ICT) in business, which has revolutionized relationships within and between organizations on one hand, and those between organizations and individuals on the other hand. Also, it has helped in increasing productivity, encouraged greater participation from customers, and
also mass customization was enabled and cost reduction (Buck, 2016). In a discussion paper titled Electronic Commerce: Some implications for firms and workers in developing countries by Alwyn Didar Singh, a number of issues relating to the subject of this project study were highlighted in preliminary results of research undertaken by the International Institute for Labour Studies (IILS), an autonomous facility of International Labour Organization (ILO). According to Alwyn Didar Singh, the biggest issue and fear in developing nations and their firms is not lack of knowledge and expertise in introducing and engaging E-Commerce but rather that of not engaging it, because of not having a basic understanding and appreciation of its potentials. The framework of its operation and the multiplier effect on the economy in general as well as firms and workers in particular (Sivathanu, 2013).

2.2.1 Electronic Payments

Electronic Retail Payment Services, a payment infrastructure consists of a network of interrelated entities that accelerate data exchange between systems to initiate, sanction, and expedite cash transfer between two parties (Kovács & David, 2016). An efficient payment system accomplishes these tasks at a relatively low cost to the parties involved. Payment systems come in various forms, as driven by the needs of clients, to facilitate economic transactions. Payment structure can broadly be put into two categories: high value payment systems and the retail payment system (Ozturk, 2016). Retail payments are transactions made by several of individual clients. This covers business to business, individual to business and person-to-person payments. It involves a wide range of payment instruments, including point-of-sale payment instruments and those used for remote transactions. It also makes extensive use of private networks, such as automated clearing houses or credit card companies (Wang, 2014).

According to Taylor (2017), retail payment intensity is measured using the number of retail transactions to show volume of country level of retail payments business. The number of payment equipment such as ATM (Automated Teller Machine), POS (Point of Sale), and level of usage of both internet and mobile banking determine the level of adoption. Retail Electronic Payments Services and Financial Performance Income for banks arises largely from non-interest activities and lending. In practice, the retail services rendered by the banks directly impact their non-interest incomes, for instance revenue charged on paying for services (Ejiogu, 2015). Payment services are necessary aspects of the banking system.
and they account for a significant portion of the revenues earned by the firms. Revenue earning is the backbone of banking business as it significantly helps banks to increase their market share to remain competitive (Zhou, 2014). According to BCG report (2009), payments through the banks are ideal for growth of the sector since they form the bedrock of capital for the firms. New payment technologies that take the form of electronic methods have not only reduced the settlement time but also the financial costs of processing client payments. The shift from the traditional paper based payment systems to electronic methods has substantially reduced the cost of operations for banks.

The combination of the sophisticated payment methods and the reduced cost of operations attributed to the shift focus from the traditional payment methods to electronic payments techniques will positively impact the financial performance in the banking system (Chua & Lin, 2013). Retail payment equally impacts lending capacity of the clients because it attracts more deposits from the clients. Consequently, banks can earn interest on both the credit and the debit balances as well, which arise from making payments or withdrawals. A befitting 6 retail payment scheme can attract more clients to borrow from the banks by expediting the refund. Furthermore, interest for the banks may be linked with non-interest revenue due to the potential in cross selling various products to a single customer (Boateng & Heeks, 2014).

### 2.2.2 Cash on delivery

In Kenya, most transactions carried out on these websites involve Cash on Delivery payment systems. This is because the concept of online payment is still not attractive to the users. Possible follow up questions would be, how many Kenyans use their credit cards for online payment (Ayuma, 2011). On further scrutiny, it was found out that most people still don’t trust dishing out money online. Some cite being conned, scammed as the possible reasons why they would rather still wait for their items, view it then pay for it afterwards. While other e-commerce websites such as Kilimall offer payments through MPESA and later term it as online payment. Is that really the concept of online payment? Take for instance, PayPal, a leading online payment system that is known for its ease of use. When shopping for goods online, immediately you see the PayPal icon on the payment section, your heart glows with warmth since you know you will complete the transaction with the click of a button (Buck, 2016).
On alleviating Cash on Delivery as the main mode of payment, this will take a lot of effort as customers noted that the item delivered was different from the one online hence, the need to hold back payment until the item is delivered. E-commerce sites should build trust with their customers to have a better experience (Rehnkrona, 2018). The potential of E-Commerce is no more a matter of debate. From the world of hype and fantasy it has moved into that of digital reality. Electronic commerce looms large on the horizons of tomorrow, and it promises to transform trade and industry in ways not yet imagined or perceived as its impact is expected to go far beyond commerce to affect the lives of millions of Internet users, consumers, workers and producers. While E-Commerce involves the use of ATM’S, credit and debit cards, mobile phones etc., the real game changer happens to be the internet. This so because, the Internet alone has the potential to deliver what the notion of electronic commerce had always implied due to the fact that for the first time in the history of trade and electronics. The internet would be able to give direct unlimited access and control on buying and selling transactions to just about everyone from the individual investor to the ordinary shopper (Ayuma, 2011).

2.3 Effect of Internet Availability on Firm Performance

Internet is regarded as a set of computers that links together with fibre optics, telephone lines, and satellite lines to transform environment (Al-Somali & Clegg, 2015). Internet is a base for electronic marketing expansion especially in the developed nations. It is an information technology that diffuses at exponential rates among the business to business firms. The internet should be viewed as a channel for distribution, communication and trade since it is an efficient medium for information accessibility, communication and organization. Furthermore, it helps to store data in inexpensive manner (Alam, 2014). Collecting information rapidly and affordably, provides information interactively in line with consumer needs and in comparison with printed marketing materials while at the same time offering a great sensory experience and can serve as a medium for trading (O’Beirne, 2011).

Farming products electronic trade has a place with the class of electronic trade. It is a sort of electronic trade way which is done by the business or the primary body of the administration which is identified with the farming items (Alharbi & Hodkinson, 2013). Web based business stage for farming items alludes to the electronic trade site which depends on the system stage, gives the important information of farming items, rural
strategies and related agrarian items advertise data and gives farming items exchanging administrations. Getting an electronic trade framework stage, including its very own advancement, redistributing, and improvement collaboration and renting virtual host administration stage. Various ways have various preferences and disservices and specialized staff and subsidizing necessities are unique, all in all, for most number of farming items administrators for contract outsider business open stage to expand on the stage of the purposes of their own. In along these lines, not exclusively can decrease the assemble stage of specialized trouble and well-being the management of hazard, yet additionally by the stage has expanded deals stream (Alam, 2014).

Because of the electronic business of agriculture products is simply rising, major arrange administrators in business stage has recently started endeavours to offers of horticultural items, so on horticultural items online business showcase exchange information obtaining is troublesome (Kumar & Timalsina, 2016).

Fresh agriculture products, web based business, dissemination, exchange and different procedures of electronic business task method of exchange. Occupied with new horticultural products, electronic business exchange substances allud to new power providers. New and more for the day by day necessities of day by day existence with solid client stickiness, client faithfulness once the buy rate will be high (Choi & Nazareth, 2014). The provincial appropriation of farming items is described by the conveyance of horticultural items, which can be formed, and the rural items can all more likely handle business openings, and the rural items coordination proficiency ought to be sufficiently high. Through the electronic trade can grow the business showcase space and range, simply to look for the business related free market activity data from a more extensive scope of fields, rapidly and productively understand the rural items online conveyance and coordination and other exchanging joins (Warren, 2014).

The regular choice of rural items isn’t convenient alteration of horticultural items and item classifications and the quantity of items, which exist in the task of fixed speculation chance. In develop period of farming items, farming items collection under unsalable hazard, how in a brief timeframe to complete countless horticultural items and deals, through the farming item electronic trade method of the request and purchase mode can be generally excellent to unravel the rural generation of regular caused the issue of poor offers of farming items (Collins, 2013). Some portion of the regular attributes of new rural items,
the occasional qualities of their utilization, through the agrarian internet business stage can be discharged ahead of time of an opportunity to sell horticultural items, to remind customers to purchase on calendar. According to Schwartz (2017), the active internet users around the world increased to 3.5 billion persons up from 2 billion in 2015. To put the statistic into a clearer concept, the data is an indication that slightly half of the world population (50%) is considered to have access to internet. The recent statistics on distribution of internet in the world shows the majority of internet users reside in the central and the southern parts of Asia. North America has the second largest internet users closely followed by the European counterparts. Africa and the Latin America (south and Central America) had the least access of internet in the world.

With the development of new information and communication technology, the existing companies in different sectors to achieve a competitive advantage needs to use these technologies (Alam, 2014). Companies should withdraw the old ways and move towards new technologies that are based on the World Wide Web context. The increasing volume of electronic commerce in the world used by economic companies and gradual acceptation of it from consumers demonstrates potential advantage of electronic commerce and commercial context (Boateng & Heeks, 2014).

The exponential growth of internet availability and the increasing rate of applications has caused a boom of the new internet start-ups and new marketing strategies for a number of incumbents that want to be part of the new economy (Frempong, 2013). The initial belief about e-commerce was that it should intensify competition due to the lower searching costs, hence, lowering prices that should benefit the economic welfare and potential growth. Boateng and Heeks (2014), suggest that the traditional companies do not take part in this revolution are deemed to failure as well as exit from the business. However, the recent collapse of share prices for high-tech companies, fears about security on the internet and the rather low proportion of the trade taking place through the internet creates a doubt on the significance of the new economy.

The prospects of significant growth in the e-commerce business is challenging economists by posing the questions on the impact of e-commerce on the conventional economy, specifically on competition, price levels and performance of the companies (Konings & Roodhooft, 2013). The conventional economy predicted the increase in competitive pressures, affecting profit margins, lowering prices and a more efficient production due to
the companies setting their virtual stores online. According to Buck (2016) these changes are not only expected to affect the on-line buyers and sellers themselves but also traditional companies that do not have the capacity to buy or sell goods online since the share of business and customers that search for their online sales is steadily growing. In general, the competition enhances low pricing features of electronic commerce and can be analyzed from various elements. The first element, the distribution cost are likely to decrease that is instead of having a physical selling outlets, an online seller would only need few number of big warehouses with staff packing the online orders and dispatching them to the logistics.

Another element, cost of consumers search are reduced. Transaction costs for the buyers and sellers are reduced due to automation. Efficiency from operations can be realized since there few stages in the transaction process and a reduction in employees required for transaction process. The third element, electronic commerce can lead to a shorter supply chain. The conventional supply chain begins with the producer and passes through the distributor and the retailer (Dsouza & Joshi, 2014). E-commerce excludes the retailer and most often the wholesaler as well. The Amazon bookstore which is an example of the former supply chain, while Dell Corporation on line business can refer to the latter supply chain. In both scenarios a significant reduction on the cost side are possible due to the absence of expenditure on setting up retail outlets and the reduction of inventory carrying costs (Dsouza & Joshi, 2014).

A quick comparison on the level of internet access from region to region of the world and the level of adoption of ecommerce across these regions indicate that African and Latin American regions have the lowest adoption of ecommerce trade whereas East and south east Asia, Europe and the north American region had the highest adoption of the ecommerce trade. In looking at ecommerce on a deeper sense, it is hard to ignore the economic performance of specific countries in relation to the number of internet users (Li & Xie, A strategic framework for determining e-commerce adoption, 2012). According to the internet society report (2015), the largest users of internet are located in the two best performing economies in the world namely the United States and China. To make more emphasis on the statement, the two countries are known to be the home of the largest internet trading companies in the globe. America is home to the trading giants’ e-Bay and Amazon Whereas Alibaba stems its roots from china.
From the study conducted by Borodin (2015), legislation and government support have a critical influence on the level of adoption of the internet as a tool for business. Dynamic legislation on the internet by countries such as the United States and the Trading bloc of the European Union has led to the rapid development of internet adoption as alternative tools of business and market places in the regions. Recent adoption on a more standardized platform on taxations on the goods transacted over the internet has had a positive boost in the transaction on the internet. A more personal approach to the accessibility of the internet is in examining the modes in which the various populations access the internet. According to the statistics released by Google Inc. Majority of users have shifted from the traditional forms of accessing the internet, that is the personal computer, and prefer accessing the internet from smartphone devices. For example, China with a population of excess of 1.5 billion has 75% of its population accessing the internet from their smart devices (cell phones and tablets). America on the other hand with a population of excess of 300 million has 80% of the population with access to internet preferring to use their smart devices to access the internet (Hua, 2016).

On a more specific sense on the mode of access of internet and the ecommerce transaction made on the devices, Amazon EBay and Alibaba, the three largest companies in the field of ecommerce had a more interesting statistics to publish. According to EBay report (2016) there is a growth in the number of transactions on their ecommerce platform from the mobile devices (specifically smartphones). Amazon on a report in 2017, more and more users are in increased preference on using their mobile devices (smart phones) to conduct transactions on their ecommerce platform. Alibaba on the other hand in a report in 2016 indicated that it has had to remodel their ecommerce platforms to suit better the users of smartphones who are increasingly taking to their mobile devices to shop on the websites (Varkani, 2012).

Businesses are increasingly expanding by adopting the use of internet compared to the traditional brick and mortar (Boateng & Heeks, 2014). In turn, this has a more specific advantage to the boom of the ecommerce around the globe. With a majority of the population having access to the internet, it has become a better market place to offer their products and services in the world. Therefore in a more conclusive sense, ecommerce serves to provide convenience for shoppers and the level of access to the internet has helped propel the adoption of ecommerce across the globe (Alam, 2014). In a study, targeting random online companies based in Nairobi County proved that E-commerce continues to
increase sales for companies. The companies revealed that consumer feel the convenience for ordering items and paying via the online portals. This level of convenience proved significant for the different companies. A cross sectional survey design adapted later justified the same. The study findings revealed that there are some challenges affecting the online businesses but to a moderate extent. These discussed challenges include potential customer’s reluctance to shop online due to desire to touch/interact with the product prior to making a purchase. Next, the lack of personal contact with customers which might be beneficial to business, e-commerce software incompatibility with existing infrastructure, customer distrust regarding privacy of personal data and finally and customers a general lack of trust for online businesses (Ayuma, 2011).

2.3.1 Internet Technology

Internet is a set of computers which links together with telephone lines, fiber optics and satellites to transform the business environment. Internet technology do not only have any central management or ownership but also a base for electronic marketing expansion especially in the developed nations (Feizollahi, 2014). The internet technology can be viewed as the channel for distribution, communication and trade and it is an efficient channel for information accessibility, communication and organization for most businesses. In addition, internet technology plays a crucial role in the e-commerce since it can store data in inexpensive way, collect information rapidly and cheaply, provide information interactively as opposed to printed marketing materials which contributes highly to the success of any e-commerce platform worldwide (Dsouza & Joshi, 2014).

The internet technology’s core advantage lies in its great capacity of being efficient, fast, integrated and interactive exchange of information which translates to the fact that without the existence of internet technology infrastructure in the country electronic commerce would be impossible (Desai & Phelps, 2016). The internet then facilitates the information exchanges between organizations, concerning issues like discovery of new needs, current trends of both the local and global markets, joint development of products, competitive moves which play fundamental role in the e-commerce development (Malenya, 2017).

2.4 The Effect of E-commerce Security Factors on Firm Performance

E-commerce is the concept that remains deployed in the field of business management to refer to the buying and selling of goods and service over the electronic system such as the internet and the lesser extent, other computer networks (Chau, 2013). There has been a
massive increase in the level of trade conducted electronically since the widespread penetration of the Internet. A wide variety of commerce remains conducted via e-Commerce, including electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. US online retail sales reached $175 billion in 2017 and are projected to grow to $335 billion by 2018 (Malenya, 2017). Online sales offerings from e-commerce firms have the potential of fundamentally changing the way consumers purchase goods and services. However, the potential of e-commerce has not been fulfilled due, in part, to consumer’s perceptions of the risks involved in conducting business online (Ariffin, Mohan, & Goh, 2018). Surveys consistently show that consumers associate a great deal of risk with online financial transactions. Forrester Research found that young consumers’ primary reason (59%) for not conducting business online was the concern about the use of credit cards online. Additionally, 43% cited concerns over the privacy of the data they provide to web sites. Studies conducted by Cheskin Research and Sapient suggested that consumers’ perception of security affected their trust in companies with online sales channels. Their surveys reveal that only 10% of all respondents felt that there is little or no risk associated with transacting online (Malenya, 2017). In order for online sales channels to succeed, e-commerce firms must provide customers with a high level of security for their transactions, and reassure customers that their requirements for security and privacy are being met. For the purposes of this research, we define security as a company’s ability to prevent unauthorized access to customer data and financial accounts. Privacy depends on the degree to which a company shares customer data after it has been collected and secured.

The concept of security has been a significant concern for e-commerce sites and their clients. Customers tend to fear the loss of their financial and secured personal data, and e-commerce sites fear the economic losses associated with break-ins and any other types of fraud activities that might infringe the privacy of consumers (Gajendra & Wang, 2014). E-commerce security is the concept of protecting e-commerce assets from unauthorized access, use, alteration, or destruction. Information security is used to guard against inescapable security accidents, ensure the continuity of business, and reduce disruption. Businesses recognize safety as an important issue, but many lack the understanding of what they should be doing or how it can be achieved (Alam, 2014). If the organization is not informed on the security protocols it should be enforced, then it is not able to impart on its
employee's education about how its intellectual property can be guarded. Therefore, for firms to gain from their security management practices they must have the necessary insights into problems at hand and security management controls within the scope that they can adequately accommodate (Collins, 2013).

Organizations are required to take on a dynamic approach to security planning and governance. It is, therefore, vital that the governance security remain incorporated with the running of the enterprise to undertake the issues of information security from an administrative perspective hence making use of its leadership, corporate structures and guidelines for the preservation of informational assets (Alam, 2014). In addition to regulating risks affiliated with security attacks companies are forced to raise their investments in security technologies such as firewalls, intrusion detection systems, encryption, backup, authentication devices, and access control systems among others. For instance, Berghof, a non-governmental organization with operations based in Sri-Lanka, realized the importance of integrating security into the organizational process because of protection cuts across issues that impact all dimensions of the organization (Collins, 2013). They decided to incorporate the administrative staff as a part of the security team because security needs a sufficient overall angle, which cannot stay fully ensured without the contribution of administrative staff.

Safety, however, is not just a matter of technology; implementing technology without the proper organizational processes will not solve security problems. There are some critical social and corporate issues with security (Desai & Phelps, 2016). The first notion is the weak link in security is often users or employees and the second is software engineering management, or managing how security technology remains deployed. The third is the development of adequate organizational processes for risk management, separation of duties, and the development of security policies, access control, and security assurance (Boateng & Heeks, 2014). The ability of hackers to access critical authenticity data is well known; it is often called social engineering. There is research work on understanding user’s mental models and motivations, but little on how to deal with the problem. Even keeping up-to-date with all security advisories and security patches is difficult, arguing that merchants should be conservative about undertaking complicated, heterogeneous deployments (Chau, 2013).
2.4.1 Privacy

Privacy is a severe issue of electronic commerce, no matter what source one examines. Fisher reported "Forty-one per cent of Web buyers surveyed last year by Forrester Research of Cambridge, Mass., said they had contacted a site to be taken off their databases because they felt that the organization used their information unwisely (Alam, 2014). A Business Week/Harris Poll revealed that over forty per cent of online shoppers were very concerned over the use of personal information, and 57% wanted some laws regulating how personal information is collected and used. Similarly, Alharbi and Hodkinson (2013) argue that privacy concerns were a critical reason why people do not go online and provide false information. The FTC evaluated that the majority of online businesses had not attained the concept of adopting even the most fundamental elements of fair information practices. Indeed, relatively few consumers believe that they have very much control over how personal information, revealed online, is used or sold by businesses (Dogo, 2014).

The combination of current business practices, consumer fears, and media pressure has combined to make privacy a potent problem for electronic commerce (Damanpour, 2016). Tackling privacy, however, is no easy matter. If nothing else, privacy discussions often turn heated very quickly some people consider privacy to be a fundamental right; others consider it to be a tradable commodity. Detailed arguments about the historical progression of privacy can be found, for example, Privacy of the person which encompasses the right to keep body functions and body characteristics private, Privacy of behavior and action which includes sensitive issues such as sexual preferences and habits, political activities and religious practices, Privacy of communication which aims to avoid the interception of communications, including mail interception, the use of bugs, directional microphones, telephone or wireless communication interception or recording and access to email messages, Privacy of data and image which includes concerns about making sure that individuals’ data is not automatically available to other individuals and organizations and that people can “exercise a substantial degree of control over that data and its use”; Privacy of thoughts and feelings which refers to the right not to share their thoughts or feelings or to have those thoughts or feelings revealed. Individuals should have the right to think whatever they like and Privacy of location and space it means individuals have the right to move about in public or semi-public space without being identified, tracked or monitored (Alharbi & Hodkinson, 2013).
A new area of research includes the so-called labelling protocols, such as the MIT/World Wide Web Consortium’s Platform for Privacy Preferences. P3P allows sites to describe their data handling policies and permits users to specify their preferences for releasing private data. Other technologies, such as those to help users understand predetermined terms or even contract related fraud, will also emerge (Kesh & Ramanujan, 2017).

2.4.2 Fraud detection

Fraud detection involves monitoring the behavior of users to estimate, detect, or avoid undesirable behavior (Hutchinson, 2013). Credit card fraud detection has drawn quite a lot of interest from the research community, and some techniques have been proposed to counter fraud. To combat the credit card fraud effectively, it is necessary to understand the technologies involved in detecting credit card frauds and to identify various types of credit card frauds (Choi & Seol, 2015). The credit card is a small plastic card issued to users as a system of payment. It allows its cardholder to buy goods and services based on the cardholder’s promise to pay for these goods and services. Credit card security relies on the physical security of the plastic card as well as the privacy of the credit card number (Buck, 2016).

CVV (Card Verification Value Code) is an anti-fraud security feature to help verify that you are in possession of your credit card. Card verification card value code is a new authentication procedure established by credit card companies to further efforts towards reducing fraud for internet transactions (Ariffin, Mohan, & Goh, 2018). Globalization and increased use of the Internet for online shopping have resulted in a considerable proliferation of credit card transactions throughout the world. Thus, rapid growth in the number of credit card transactions has led to a substantial rise in fraudulent activities. The emerging of credit card fraud is increasing dramatically due to the exposure of security weaknesses in traditional credit card processing systems resulting in the loss of billions of dollars every year (Choi & Seol, 2015). Credit card fraud is a diverse term for theft and fraud committed using a credit card as a fraudulent source of funds in a given transaction. Credit card fraudsters deploy a large number of techniques to commit fraud. To combat the credit card fraud effectively, it is essential first to understand the mechanisms of identifying a credit card fraud. Over the years credit card fraud has stabilized much due to various credit card fraud detection and prevention measures (Choi & Nazareth, 2014).
2.5 Chapter Summary
The chapter presented the literature review based on the research questions introduced in chapter one. The chapter first introduced literature on the effect of e-commerce mode of payments on performance; followed by the effect of internet availability on performance of e-commerce and finally the literature review on the effect of e-commerce security factors on performance. The next chapter presents the research methodology adopted in conducting the study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter presents the research methodology that was adopted in carrying out the study. The research methodology consisted of research design outlining the study approach undertaken. The population of the study is explained, the sampling technique, sample size, data collection methods, research procedures and data analysis methods. A summary of the chapter was provided at the end.

3.2 Research Design
Research design refers to the overall strategy that the researcher uses in integrating various elements of the study with the purpose of addressing the research problem (Cooper & Schindler, 2013). Descriptive design refers to the design that is used in describing characteristics of a population or phenomenon being investigated (Ahlstrom & Bruton, 2013). This study used descriptive design, since it enabled both collection of qualitative and quantitative data without influencing the environment of the study, it also entailed the descriptions of the attributes the target population exhibited, and hence its application is justifiable.

3.3 Population and Sampling Design
3.3.1 Population
According to Cooper and Schindler (2013) population refers to the collection of all elements or individuals in the study where references are drawn from. The population of this study was made up of 33 managers and supervisors working at Twiga Foods. The population is presented in table 3.1 below.

<table>
<thead>
<tr>
<th>Level of Management</th>
<th>Population</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors</td>
<td>18</td>
<td>55%</td>
</tr>
<tr>
<td>Managers</td>
<td>15</td>
<td>45%</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Twiga Foods Human Resource
3.3.2 Sampling Design

3.3.2.1 Sampling Frame

Sampling frame is the final list that represents the population which the researcher intends to select the sample from (Ragab & Arisha, 2018). The sampling frame of this study was obtained from the human resource office at Twiga Foods.

3.3.2.2 Sampling Technique

According to Cooper and Schindler (2013), sampling technique refers to the technique that the researcher uses in ensuring that various groups either heterogeneous or homogeneous study are well represented in the final sample size selected for the study. The study employed probability sampling; adopting simple random sampling in order to select the sample size used. Members of the population were divided into strata, based on the members shared attributes or characteristic which for this study were based on the position of the individual either managers or supervisors. According to the data from the registrar’s office, Twiga Foods Ltd had a population of 33 senior staff made up of 18 managers and 15 supervisors.

3.3.2.3 Sample Size

Sample size is the smaller unit that represents the larger population from which the sample is being selected from for the purpose of addressing the research problem (Boddy, 2016). The entire population of the study will be used as a sample size. A census is used to determine the sample size of the study to be 33 managers and supervisors of Twiga Foods. The sample size is presented in table 3.2 below.

<table>
<thead>
<tr>
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</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>33</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Author (2019)
3.4 Data Collection Methods
Data collection is the process of gathering data from the target population of the study in a manner that is well structured to accurately address the research questions of the study (Cooper & Schindler, 2013). This study used primary data that was collected from target respondents. A closed ended questionnaire was used for data collection as a data collection instrument. A closed ended questionnaire was useful in data analysis making the presentation of the results and findings manageable. According to Synodinos (2013), a questionnaire refers to a research instrument that has a series of questions for the purpose of collecting information from the respondents. The questionnaire was broken into four sections. The first section comprised of general information of the respondents. The second section contained questions regarding the first research question. The third section of the questionnaire contained questions based on the second research question. The fourth section covered questions of the third research question. A Likert scale with measurements ranging between 1 and 5 was used where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree.

3.5 Research Procedures
Research procedures is a detailed framework that depicts a step by step guide on how the study will be conducted to meet the intended objectives of the study (Cooper & Schindler, 2013). This study started by seeking approval of the proposal from the supervisor, upon which an approval letter was written to the director of human resource at Twiga Foods seeking permission to carry out the study. After the approval was sought, a pilot test was conducted to determine the reliability of the study using 10 percent of the targeted respondents. Weaknesses identified were corrected before the actual study was done. After that the researcher physically visited the offices of Twiga Foods and located potential respondents who filled the questionnaires. The respondents were given three days to fill the questionnaires upon which they were collected by the researcher for data analysis.

3.6 Data Analysis Methods
Cooper and Schindler (2013) define data analysis as the method through which the researcher reduces raw data collected from the respondents into meaningful information to answer the research questions. This study used both descriptive statistics and inferential statistics. Descriptive statistics were used in analyzing frequencies, percentages and means while inferential statistics was used for analyzing regression and correlational analysis to
establish the relationships that existed between the study variables. A statistical Package for Social Sciences Software (SPSS) version 24 was used for analysis and data was presented in form of tables and figures.

3.7 Chapter Summary
This chapter focused on the research methodology used in the study. It discussed the research design, population, sampling design, data collection methods, research procedures and the data analysis. Chapter four presents the results and findings.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

Chapter four focuses on data analysis, result presentations and discussion of the findings. The first section of the chapter covers response rate and demographic information of the respondents, followed by the findings on the first research question that is the effect of e-commerce mode of payment on performance, the effect of internet availability on performance and the findings on the effect of e-commerce security factors on performance.

This study had a response rate of 93%, which was attributed by the questionnaires obtained from the respondents. Out of 33 questionnaires that were issued to the respondents, 31 questionnaires were collected. The response Rate is presented in Figure 4.1.

![Response Rate Graph]

**Figure 4.1: Response Rate**

4.2 Demographic Information

This study sought to present general information of the respondents involved in this study. The variables include; Gender, Age, Highest Level of Education, Work Department and the Number of Years in the Organization.

4.2.1 Gender of the Respondents

The respondents of this study were asked to indicate their gender. Figure 4.2 indicates that 55% of the respondents were male while 45% were female. This implies that gender distribution in the company is well distributed that is there is gender equality within the company.
4.2.3 Respondents Age

This study sought to establish the age of the respondents involved in the study. Figure 4.3 below shows that 13% of the respondents aged above 48 years, 13% aged between 41-47 years, 23% aged between 34-40 years, 29% aged between 26-33 years and 23% aged between 18-25 years. All the respondents are above 18 years, this implies that all the respondents are adults and the company is in line with labor laws.

4.2.4 Highest Level of Education

The study sought to establish the highest level of education of the respondents involved in the study. 7% of the respondents had a diploma, 42% had a bachelor’s degree, 29% had a master’s degree and 23% had a doctorate degree as shown in Figure 4.4. This implies that the respondents had the capacity to read and interpret the information sought by this study.
When the respondents were asked to indicate their work department, 19% worked in the administration department, 29% in marketing, 13% worked in finance and 39% in research and development. This implies that target respondents had knowledge on the information sought by the study. The findings are presented in Figure 4.5.

Figure 4.5: Work Department

When the respondents were asked to indicate the number of years they have worked for the organization. Figure 4.6 indicates that 13% had worked for the company for more than five years, 13% have worked with the company for less than 1 year, 39% had worked for between 2-3 years and 35% had worked between 4-6 years as shown in Figure 4.6 below.
4.3 The Effect of E-commerce Mode of Payments on Performance

This study sought to establish the effect of e-commerce mode of payments on performance. Table 4.1 below presents the responses on e-commerce mode of payments and performance.

4.3.1 Descriptive Statistics for E-commerce Mode of Payments and Performance

Data computed highlights the response on e-commerce and performance measured in means and standard deviations.
Table 4.1: Descriptive Statistics for E-commerce Mode of Payments and Performance

<table>
<thead>
<tr>
<th>E-commerce Mode of Payment</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of Multiple Modes of payment enhances revenues in the company.</td>
<td>31</td>
<td>4.29</td>
<td>.824</td>
</tr>
<tr>
<td>Electronic mode of payments enhances profitability in the company.</td>
<td>31</td>
<td>4.39</td>
<td>.882</td>
</tr>
<tr>
<td>Electronic mode of payment has enhanced service delivery in the company.</td>
<td>31</td>
<td>4.00</td>
<td>1.000</td>
</tr>
<tr>
<td>Electronic mode of payment enhances competitive advantage.</td>
<td>31</td>
<td>4.65</td>
<td>.486</td>
</tr>
<tr>
<td>Electronic mode of payment has enhanced your business performance.</td>
<td>31</td>
<td>4.32</td>
<td>.791</td>
</tr>
<tr>
<td>Electronic mode of payment has increased your market presence.</td>
<td>31</td>
<td>4.45</td>
<td>.675</td>
</tr>
<tr>
<td>The use of mobile payment enhances customer loyalty in your organization.</td>
<td>31</td>
<td>4.19</td>
<td>.910</td>
</tr>
<tr>
<td>The use of mobile payments enhances customer trust among the company’s customers.</td>
<td>31</td>
<td>4.58</td>
<td>.564</td>
</tr>
<tr>
<td>The use of mobile payments enhances brand loyalty.</td>
<td>31</td>
<td>4.45</td>
<td>.506</td>
</tr>
<tr>
<td>Cash on delivery payment system enhances efficiency in the company’s operations.</td>
<td>31</td>
<td>4.26</td>
<td>.930</td>
</tr>
<tr>
<td>Cash on delivery payment system improves customer service delivery.</td>
<td>31</td>
<td>4.61</td>
<td>.495</td>
</tr>
<tr>
<td>Cash on delivery attracts more revenues as opposed to other means of payments.</td>
<td>31</td>
<td>4.48</td>
<td>.508</td>
</tr>
<tr>
<td>Cash on delivery payment systems is essential for your market share.</td>
<td>31</td>
<td>4.55</td>
<td>.506</td>
</tr>
<tr>
<td>Cash on delivery payment system is crucial for the company’s cash flow.</td>
<td>31</td>
<td>4.19</td>
<td>.910</td>
</tr>
<tr>
<td>Cash on delivery payment system enhances customer transactions.</td>
<td>31</td>
<td>4.65</td>
<td>.486</td>
</tr>
</tbody>
</table>

The findings shown in Table 4.1 highlights the respondents’ feedback on the effect of e-commerce mode of payment on performance of Twiga Foods. The responses were tabulated in means and standard deviation (SD) having been obtained from a Likert Scale ranging from 1-5, where 1 stands for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree. The findings indicate that the respondents agreed that the use of Multiple Modes of payment enhances revenues in the company, with a mean of 4.29 and
SD = 0.824. Respondents agreed that electronic mode of payments enhances profitability in the company, mean = 4.39 and SD = 0.882. The respondents agreed that electronic mode of payment has enhanced service delivery in the company, mean = 4.0 and SD = 1.00. The respondents of the study also agreed that electronic mode of payment enhances competitive advantage, with a mean of 4.65 and SD = 0.486. The respondents agreed that electronic mode of payment has enhanced your business performance, mean = 4.32 and SD = 0.791.

The findings indicate that the respondents agreed that electronic mode of payment has increased your market presence, with a mean of 4.45 and SD = 0.675. Respondents were in support that the use of mobile payment enhances customer loyalty in your organization, with a mean of 4.19 and SD = 0.910. The respondents were also in agreement that, the use of mobile payments enhances customer trust among the company’s customers, with a mean of 4.58 and SD = 0.564. Respondents also agreed that the use of mobile payments enhances brand loyalty, mean = 4.45 and SD = 0.506. Respondents agreed that Cash on delivery payment system enhances efficiency in the company’s operations, mean = 4.26 and SD = 0.930.

Findings show that the respondents were in agreement that Cash on delivery payment system improves customer service delivery, with a mean of 4.61 and SD = 0.495. The respondents agreed that cash on delivery attracts more revenues as opposed to other means of payments, with a mean of 4.48 and SD = 0.508. The respondents agreed that cash on delivery payment systems is essential for your market share with a mean of 4.55 and SD = 0.506. The respondents agreed that cash on delivery payment system is crucial for the company’s cash flow, with a mean of 4.19 and SD = 0.910. The respondents also agreed that Cash on delivery payment system enhances customer transactions, cash on delivery payment system enhances customer transactions, with a mean of 4.65 and SD = 0.486.

4.3.2 Correlation Analysis between E-commerce Mode of Payment and Performance

A correlation analysis was conducted to determine the relationship between independent variable in this case being e-commerce mode of payment and dependent variable in this case being performance.
Table 4.2: Correlation Analysis between E-commerce Mode of Payment and Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>E-commerce Mode of Payment</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode of Payment</td>
<td>Pearson Correlation 1</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>Pearson Correlation .847**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>31</td>
<td>31</td>
</tr>
</tbody>
</table>

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

Table 4.2 above highlights a correlation between e-commerce mode of payment and performance, the findings revealed a strong and significant relationship between e-commerce mode of payment and performance, r (0.847); p-value < 0.01.

4.3.3 Regression Test for E-commerce Mode of Payment and Performance

The study also conducted a regression test with the aim of examining the underlying relationship between the independent variable e-commerce mode of payment and dependent variable performance.

Table 4.3: Model Summary between E-commerce Mode of Payment and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.847a</td>
<td>.718</td>
<td>.708</td>
<td>.10768</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Mode of Payment

The findings in Table 4.3 above shows the model summary derived from the regression test between e-commerce mode of payment and performance. The computations revealed Adjusted R square value of 0.708. This implies that e-commerce mode of payments accounts for 70.8% variability in performance and 29.2% variability attributed to other factors that were not covered in the regression model.
Table 4.4: Analysis of Variance between E-commerce Mode of Payment and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.857</td>
<td>1</td>
<td>.857</td>
<td>73.877</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>.336</td>
<td>29</td>
<td>.012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.193</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance
b. Predictors: (Constant), E-commerce Mode of Payment

The Analysis of Variance test results presented in Table 4.4, indicates that F-test value is 73.877 with a p-value of 0.000. This indicates that; F (1, 29) = 73.877, p-value = 0.000 (p < 0.01). This shows that there exists a substantial variance between the independent variable e-commerce mode of payment and dependent variable performance. The test is statistically significant at 0.01 significance level.

Table 4.5: Coefficient Table for E-commerce Mode of Payment and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficientsa</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.983</td>
<td>.284</td>
<td></td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>E-commerce</td>
<td></td>
<td>.553</td>
<td>.064</td>
<td>.847</td>
<td>8.595</td>
</tr>
<tr>
<td>Mode of Payment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance

Table 4.5 indicates coefficient values of the variables being examined in the study, constant ($\beta_0$) = 1.983 and beta for e-commerce mode of payment ($\beta_1$) = 0.553. The p-value for e-commerce mode of payment is recorded as 0.000 (P-value = 0.000, p < 0.01. The regression equation was generated as follows.

Y (Performance) = 1.983 + 0.553X₁

The findings imply that there exists a statistical significance association between e-commerce mode of payment and performance. Therefore, for every unit change in e-commerce mode of payment implies a 0.553-unit change in performance.
4.4 The Effect of Internet Availability on Performance of E-commerce

The study sought to determine the effect of internet availability on performance of Twiga Foods. The data presented in Table 4.6 presents the respondent’s views on internet availability measured in means and standard deviation.

4.4.1 Descriptive Statistics for Internet Availability of Performance of E-commerce

Descriptive statistics for internet availability and performance of e-commerce is highlighted in table 4.6 below. Both means and standard deviation have been computed and highlighted in the table below.

Table 4.6: Descriptive Statistics for Internet Availability of Performance of E-commerce

<table>
<thead>
<tr>
<th>Internet Availability</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of internet contributes to the growth of your business.</td>
<td>31</td>
<td>4.52</td>
<td>.508</td>
</tr>
<tr>
<td>Internet services enables your company to tap into various markets.</td>
<td>31</td>
<td>4.29</td>
<td>1.006</td>
</tr>
<tr>
<td>Availability of internet supports efficiency in your operations.</td>
<td>31</td>
<td>4.32</td>
<td>.791</td>
</tr>
<tr>
<td>Availability of internet services enhances your marketing activities.</td>
<td>31</td>
<td>4.29</td>
<td>.643</td>
</tr>
<tr>
<td>Internet availability enables the company to cut down advertising costs.</td>
<td>31</td>
<td>4.55</td>
<td>.506</td>
</tr>
<tr>
<td>Availability of internet ensures successful service delivery to your customers.</td>
<td>31</td>
<td>4.45</td>
<td>.675</td>
</tr>
<tr>
<td>Internet technology enhances customer payments.</td>
<td>31</td>
<td>4.45</td>
<td>.768</td>
</tr>
<tr>
<td>Internet technology allows customers to access the company’s services.</td>
<td>31</td>
<td>4.45</td>
<td>.506</td>
</tr>
<tr>
<td>The availability of internet services is essential for the company’s business model.</td>
<td>31</td>
<td>4.52</td>
<td>.508</td>
</tr>
<tr>
<td>Internet technology enhances customer care service delivery.</td>
<td>31</td>
<td>4.55</td>
<td>.506</td>
</tr>
<tr>
<td>Internet technology enables ICT infrastructure in your organization.</td>
<td>31</td>
<td>4.35</td>
<td>1.018</td>
</tr>
<tr>
<td>Internet technology enables your organization to expand its operations.</td>
<td>31</td>
<td>4.35</td>
<td>.608</td>
</tr>
<tr>
<td>The availability of internet technology enhances coordination of activities in the organization.</td>
<td>31</td>
<td>4.55</td>
<td>.723</td>
</tr>
</tbody>
</table>
The findings shown in Table 4.6 highlights the respondents’ feedback on the effect of internet availability on performance of Twiga Foods. The responses were tabulated in means and standard deviation (SD) having been obtained from a Likert Scale ranging from 1-5, where 1 stands for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree. The findings shows that the respondents agreed that availability of internet contributes to the growth of your business, with a mean of 4.52 and SD = 0.508. Respondents agreed that internet services enables your company to tap into various markets, mean = 4.29 and SD = 1.006. The respondents agreed that availability of internet supports efficiency in your operations, with a mean of 4.32 and SD = 0.791. The respondents agreed that availability of internet services enhances your marketing activities, with a mean of 4.29 and SD = 0.643. The respondents also agreed that internet availability enables the company to cut down advertising costs, with a mean of 4.55 and SD = 0.506.

The findings revealed that the respondents agreed that availability of internet ensures successful service delivery to your customers, with a mean of 4.45 and SD = 0.768. The respondent were in agreement that availability of internet ensures successful service delivery to your customers, with a mean of 4.45 and SD = 0.675. The respondents agreed that Internet technology allows customers to access the company’s services, mean = 4.45 and SD = 0.506. The respondents were also in the agreement that the availability of internet services is essential for the company’s business model, mean = 4.52 and SD = 0.508.

Furthermore, the findings revealed that the respondents agreed that the availability of internet services is essential for the company’s business model, with a mean of 4.52 and SD = 0.508. The respondents were in agreement that Internet technology enhances customer care service delivery with a mean of 4.55 and SD = 0.506. The respondents agreed that internet technology enables ICT infrastructure in your organization, with a mean of 4.35 and SD = 1.018. The respondents of this study agreed that internet technology enables your organization to expand its operations, with a mean of 4.35 and SD = 0.608. The respondents were in agreement that the availability of internet technology enhances coordination of activities in the organization with a mean of 4.55 and SD = 0.723.
4.4.2 Correlation between Internet Availability of Performance of E-commerce

The study conducted a correlation analysis to establish the relationship between independent variable internet availability and dependent variable performance.

Table 4.7: Correlation between Internet Availability of Performance of E-commerce

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Performance</th>
<th>Internet Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>31</td>
</tr>
<tr>
<td>Internet Availability</td>
<td>Pearson Correlation</td>
<td>.558**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>31</td>
</tr>
</tbody>
</table>

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

Table 4.7 above shows the correlation analysis between independent variable internet availability and dependent variable performance. The findings have revealed that there exists a statistically significant relationship between internet availability and performance of e-commerce, r (0.558); p-value < 0.01.

4.4.3 Regression Test for Internet Availability and Performance

The study also conducted a regression test with the aim of examining the underlying relationship between the independent variable internet availability and dependent variable performance.

Table 4.8: Model Summary for Internet Availability and Performance

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.558a</td>
<td>.311</td>
<td>.288</td>
<td>.16830</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Internet Availability

The findings in Table 4.8 above shows the model summary derived from the regression test between internet availability and performance. The computations revealed an adjusted R square value of 0.288. This implies that internet availability accounts for 28.8% variability in performance and 71.2% variability is attributed to other factors that were not covered in the regression model.
Table 4.9: Analysis of Variance between Internet Availability and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.371</td>
<td>1</td>
<td>.371</td>
<td>13.113</td>
<td>.001b</td>
</tr>
<tr>
<td>Residual</td>
<td>.821</td>
<td>29</td>
<td>.028</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.193</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance  
b. Predictors: (Constant), Internet Availability

The Analysis of Variance test results presented in Table 4.9 revealed F-test value of 13.113 with a p-value of 0.001. This indicates that; F (1, 29) = 13.113, p-value = 0.001 (p < 0.01). This indicates that there exists a substantial variance between the independent variable internet availability and dependent variable performance. The test is statistically significant at 0.01 significance level.

Table 4.10: Coefficient Table for Internet Availability and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.377</td>
<td>.841</td>
</tr>
<tr>
<td>Internet Availability</td>
<td>.684</td>
<td>.189</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance

Table 4.10 indicates coefficient values of the variables being investigated in this study, a constant ($\beta_0$) = 1.377 and beta coefficient for internet availability($\beta_1$) = 0.558. The p-value for internet availability was recoded as 0.001 (P-value = 0.001, p < 0.01. The regression equation was generated as follows;

\[ Y (\text{Performance}) = 1.377 + 0.558X_1 \]

The findings imply that there exists a statistical significance association between internet availability and performance. Therefore, for every unit change in internet availability there will be a 0.558-unit change in performance.
4.5 The Effect of E-commerce Security Factors on Performance

This study sought to determine the effect of e-commerce security factors on performance of Twiga Foods.

4.5.1 Descriptive Statistics for E-commerce Security Factors on Performance

The findings shown in Table 4.6 highlights the respondents’ feedback on the effect of e-commerce security factors on performance of Twiga Foods. The responses were tabulated in means and standard deviation (SD) having been obtained from a Likert Scale ranging from 1-5, where 1 stands for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree.

Table 4.11: Descriptive Statistics for E-commerce Security Factors on Performance

<table>
<thead>
<tr>
<th>E-commerce Security Factors</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-commerce security is essential for your business performance.</td>
<td>31</td>
<td>4.48</td>
<td>.508</td>
</tr>
<tr>
<td>Fraud detection mechanisms enhances customer trust.</td>
<td>31</td>
<td>4.26</td>
<td>.893</td>
</tr>
<tr>
<td>Online customer privacy improves customer attraction.</td>
<td>31</td>
<td>4.45</td>
<td>.506</td>
</tr>
<tr>
<td>E-commerce security improves business performance.</td>
<td>31</td>
<td>4.42</td>
<td>.807</td>
</tr>
<tr>
<td>E-commerce security enhances competitive advantage.</td>
<td>31</td>
<td>4.58</td>
<td>.502</td>
</tr>
<tr>
<td>Fraud detection enhances customer loyalty in the organization.</td>
<td>31</td>
<td>4.45</td>
<td>.506</td>
</tr>
<tr>
<td>Fraud detection is essential for customers to undertake transactions.</td>
<td>31</td>
<td>4.06</td>
<td>.929</td>
</tr>
<tr>
<td>Customer privacy measures enhances business performance.</td>
<td>31</td>
<td>4.35</td>
<td>.877</td>
</tr>
<tr>
<td>Customer Privacy mechanisms online influences the amount of transactions carried out by customers.</td>
<td>31</td>
<td>4.39</td>
<td>.919</td>
</tr>
<tr>
<td>Online security measures is essential for your profitability.</td>
<td>31</td>
<td>4.71</td>
<td>.461</td>
</tr>
<tr>
<td>Privacy security mechanisms influences customer traffic in the company’s website.</td>
<td>31</td>
<td>4.29</td>
<td>1.006</td>
</tr>
<tr>
<td>E-commerce security measures is essential for business growth.</td>
<td>31</td>
<td>4.55</td>
<td>.506</td>
</tr>
<tr>
<td>Fraud detection reduces risk exposure to the company.</td>
<td>31</td>
<td>4.55</td>
<td>.506</td>
</tr>
<tr>
<td>Privacy measures enhances customer convenience.</td>
<td>31</td>
<td>4.58</td>
<td>.502</td>
</tr>
<tr>
<td>Fraud detection is essential for securing transactions in your company.</td>
<td>31</td>
<td>4.68</td>
<td>.475</td>
</tr>
</tbody>
</table>
The findings in Table 4.11 indicate that the respondents agreed that e-commerce security is essential for your business performance, with a mean of 4.48 and SD = 0.508. The respondents agreed that fraud detection mechanisms enhance customer trust, with a mean of 4.26 and SD = 0.893. The respondents agreed that online customer privacy improves customer attraction, with a mean of 4.45 and SD = 0.506. Respondents agreed that e-commerce security improves business performance, with a mean of 4.42 and SD = 0.807. The respondents were also in agreement that E-commerce security enhances competitive advantage, with a mean of 4.58 and SD = 0.502.

The findings revealed that the respondents were in agreement that Fraud detection enhances customer loyalty in the organization, mean = 4.45 and SD = 0.506. The respondents agreed that Fraud detection is essential for customers to undertake transactions, mean = 4.06 and SD = 0.929. The respondents agreed that customer privacy measures enhance business performance, mean = 4.35 and SD = 0.877. The respondents were also in agreement that customer Privacy mechanisms online influences the amount of transactions carried out by customers, mean = 4.75 and SD = 0.461. The respondents of this study agreed that privacy security mechanisms influence customer traffic in the company’s website, with a mean of 4.29 and SD = 1.006.

The findings indicate that the respondents were in support that e-commerce security measures is essential for business growth, with a mean of 4.55 and SD = 0.506. The respondents also agreed that fraud detection reduces risk exposure to the company, mean = 4.55 and SD = 506. The respondents agreed that privacy measures enhance customer convenience, with a mean of 4.58 and SD = 0.502. The respondents agreed that fraud detection is essential for securing transactions in your company, mean = 4.68 and SD = 0.475.

4.5.2 Correlation between E-commerce Security Factors and Performance

A correlation analysis was done to establish the relationship between independent variable e-commerce security factors and dependent variable performance.
Table 4.12: Correlation between E-commerce Security Factors and Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Performance</th>
<th>E-commerce Security Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>Pearson Correlation 1</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>E-commerce Security Factors</td>
<td>Pearson Correlation .493**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>31</td>
<td>31</td>
</tr>
</tbody>
</table>

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

Table 4.12 shows the correlation analysis between independent variable e-commerce security factors and performance. The findings revealed a statistical significant between e-commerce security factors and performance, $r (0.493); p$-value $< 0.01$.

4.5.3 Regression Test for E-commerce Security Factors and Performance

The study also conducted a regression test with the aim of examining the underlying relationship between the independent variable e-commerce security factors and dependent variable performance.

Table 4.13: Model Summary for E-commerce Security Factors and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.493a</td>
<td>.243</td>
<td>.217</td>
<td>.17647</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), E-commerce Security Factors

The findings in Table 4.13 shows that the model summary derived from the regression test between e-commerce security factors and performance. The computations revealed an adjusted $R$ square value of 0.217. This implies that e-commerce security factors accounts for 21.7% variability in performance while 78.3% variability is attributed to other factors that were not covered in the regression model.
Table 4.14: Analysis of Variance between E-commerce Security Factors and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.290</td>
<td>1</td>
<td>.290</td>
<td>9.304</td>
<td>.005b</td>
</tr>
<tr>
<td>Residual</td>
<td>.903</td>
<td>29</td>
<td>.031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.193</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance
b. Predictors: (Constant), E-commerce Security Factors

The Analysis of Variance test presented in Table 4.14 revealed an F-test value of 9.304 with a p-value of 0.005. It indicates that; F (1, 29) = 9.304, p-value = 0.005 (p < 0.01). This implies that there exists a substantial variance between independent variable e-commerce security factors and performance.

Table 4.15: Coefficient Table for E-commerce Security Factors and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.454</td>
<td>.645</td>
<td>3.805</td>
<td>.001</td>
</tr>
<tr>
<td>E-commerce Security Factors</td>
<td>.441</td>
<td>.145</td>
<td>.493</td>
<td>.005</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance

Table 4.15 indicates coefficient values of the variables being investigated in this study, a Constant ($\beta_0$) = 2.454 and beta coefficient for e-commerce security factors($\beta_1$) = 0.493. The p-values for e-commerce security factors was recorded as 0.005 (P-value = 0.005, p < 0.01. The regression equation was established as follows.

$$Y (Performance) = 2.454 + 0.493X_1$$

The findings imply that there exists a statistical significance association between e-commerce security factors and performance. Therefore, for every unit change in e-commerce security factors results in 0.493-unit change in performance.
4.6 Chapter Summary
The chapter has provided results and findings based on the primary data obtained from the questionnaires distributed to the targeted respondents. The findings of the study indicates that there is a strong and positive relationship between e-commerce mode of payment and performance of Twiga Foods Limited. There is also a significant relationship between internet availability and the performance of e-commerce and lastly, the findings found out statistically significant relationship between e-commerce security factors and performance of Twiga Foods Limited. Chapter five presents discussions, conclusions and recommendations.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
This chapter presents the discussion, conclusion and recommendations of the study in line with the research questions. The first section presents the summary of study, followed by discussion, conclusion and recommendations for improvement.

5.2 Summary of the Study
The purpose of this study was to determine the effect of e-commerce on performance in agricultural sector with Twiga Foods Limited as the case study. The study was be guided by the following research questions; what is the effect of e-commerce mode of payments on performance of Twiga Foods, what is the effect of e-commerce security factors on performance of Twiga Foods? And what is the effect of internet availability on performance of Twiga Foods.

The study used descriptive research design to integrate various elements of the study, a population of 33 managers and supervisors working at Twiga Foods were used as a sample size that was determined through a census, simple random sampling is also used as a sampling technique and a closed ended questionnaire was used in data collection. The results and findings were presented using tables and figures.

The study established e-commerce mode of payment had a strong and positive relationship with performance, \( r (0.847); p\text{-value} < 0.01 \). The results of the study showed that internet availability had a significant relationship with performance of Twiga Foods, \( r (0.558); p\text{-value} < 0.01 \). Lastly, the findings of the study showed e-commerce security factors had a significant relationship with performance, \( r (0.493); p\text{-value} < 0.01 \).

5.3 Discussion

5.3.1 The Effect of E-commerce Mode of Payment on Firm Performance
This study found out that e-commerce mode of payment enhances business performance. These findings agree with McDermott (2015) who argues that e-commerce legitimizes its position as a part and parcel of everyday societal transaction on the basis that it offers convenience in terms of doing businesses. It helped solve the main problem affecting
businesses and performance and added up to the advantage of getting business to expand more efficiently and at rather lower costs. For any mode of commerce to occur there has to be an effective mode of transfer of funds. The transfer circuit involves transfer from client to buyer, from client personal banking account to the mechanisms in which they are used to affect the ecommerce transactions and an effective way of refund of cash to the buyer in case of a dissatisfaction.

This study found out that electronic mode of payment enhances business performance. The findings are in line with Ozturk (2016) who indicates that payment systems come in various forms, as driven by the needs of clients, to facilitate economic transactions. Payment structure can broadly be put into two categories: high value payment systems and the retail payment system. Retail payments are transactions made by several of individual clients. This covers business to business, individual to business and person-to-person payments. It involves a wide range of payment instruments, including point-of-sale payment instruments and those used for remote transactions. It also makes extensive use of private networks, such as automated clearing houses or credit card companies (Wang, 2014).

The findings revealed that cash on delivery mode of payment enhances customer trust. The findings are in line with Ayuma (2011) indicating that In Kenya, most transactions carried out on these websites involve Cash on Delivery payment systems. This is because the concept of online payment is still not attractive to the users. Possible follow up questions would be, how many Kenyans use their credit cards for online payment. Furthermore, it was found out that most people still don’t trust dishing out money online. Some cite being conned, scammed as the possible reasons why they would rather still wait for their items, view it then pay for it afterwards. While other e-commerce websites such as Kilimall offer payments through MPESA and later term it as online payment. Is that really the concept of online payment? Take for instance, PayPal, a leading online payment system that is known for its ease of use. When shopping for goods online, immediately you see the PayPal icon on the payment section, your heart glows with warmth since you know you will complete the transaction with the click of a button (Buck, 2016).

According to Rehncrona (2018) on alleviating Cash on Delivery as the main mode of payment, this will take a lot of effort as customers noted that the item delivered was different from the one online hence, the need to hold back payment until the item is delivered. E-commerce sites should build trust with their customers to have a better
experience. The potential of E-Commerce is no more a matter of debate. From the world of hype and fantasy it has moved into that of digital reality. Electronic commerce looms large on the horizons of tomorrow, and it promises to transform trade and industry in ways not yet imagined or perceived as its impact is expected to go far beyond commerce to affect the lives of millions of Internet users, consumers, workers and producers. While E-Commerce involves the use of ATM’S, credit and debit cards, mobile phones, the real game changer happens to be the internet. This so because, the Internet alone has the potential to deliver what the notion of electronic commerce had always implied due to the fact that for the first time in the history of trade and electronics (Al-Somali & Clegg, 2015).

5.3.2 The Effect of Internet Availability on Performance

This study found out that internet availability enhances the performance of e-commerce. The findings agree with Frempong (2013) the exponential growth of internet availability and the increasing rate of applications has caused a boom of the new internet start-ups and new marketing strategies for a number of incumbents that want to be part of the new economy. Boateng and Hecks (2014) the initial belief about e-commerce was that it should intensify competition due to the lower searching costs, hence, lowering prices that should benefit the economic welfare and potential growth. Traditional companies do not take part in this revolution are deemed to failure as well as exit from the business. However, the recent collapse of share prices for high-tech companies, fears about security on the internet and the rather low proportion of the trade taking place through the internet creates a doubt on the significance of the new economy.

This study found out that internet availability enhances customer operational efficiency of e-commerce. According to Dsouza and Joshi (2014) efficiency from operations can be realized since there few stages in the transaction process and a reduction in employees required for transaction process. Electronic commerce can lead to a shorter supply chain. The conventional supply chain begins with the producer and passes through the distributor and the retailer.

E-commerce excludes the retailer and most often the wholesaler as well. The Amazon bookstore, which is an example of the former supply chain, while Dell Corporation on line business can refer to the latter supply chain. In both scenarios a significant reduction on the cost side are possible due to the absence of expenditure on setting up retail outlets and the reduction of inventory carrying costs.
The findings of the study revealed that availability of internet enhances the number of transactions done through e-commerce. According to EBay report (2016) there is a growth in the number of transactions on their ecommerce platform from the mobile devices (specifically smartphones. Amazon on a report in 2017, more and more users are in increased preference on using their mobile devices (smart phones) to conduct transactions on their ecommerce platform. Alibaba on the other hand in a report in 2016 indicated that it has had to remodel their ecommerce platforms to suit better the users of smartphones who are increasingly taking to their mobile devices to shop on the websites (Varkani, 2012).

The findings of this study revealed that availability of internet offers convenience for online shopping. According to Boateng and Heeks (2014) businesses are increasingly expanding by adopting the use of internet compared to the traditional brick and mortar. In turn, this has a more specific advantage to the boom of the ecommerce around the globe. With a majority of the population having access to the internet, it has become a better market place to offer their products and services in the world. Therefore in a more conclusive sense, ecommerce serves to provide convenience for shoppers and the level of access to the internet has helped propel the adoption of ecommerce across the globe (Alam, 2014).

In a study, targeting random online companies based in Nairobi County proved that E-commerce continues to increase sales for companies. The companies revealed that consumer feel the convenience for ordering items and paying via the online portals. This level of convenience proved significant for the different companies (Malenya, 2017). A cross sectional survey design adapted later justified the same. The study findings revealed that there are some challenges affecting the online businesses but to a moderate extent. These discussed challenges include potential customer’s reluctance to shop online due to desire to touch/interact with the product prior to making a purchase. The lack of personal contact with customers which might be beneficial to business, e-commerce software incompatibility with existing infrastructure, customer distrust regarding privacy of personal data and finally and customers a general lack of trust for online businesses (Ayuma, 2011).

5.3.3 The Effect of E-commerce Security Factors on Performance

This study revealed a statistical significant relationship between e-commerce security factors and business performance. These finding agree with Malenya (2017) indicating that there has been a massive increase in the level of trade conducted electronically since the widespread penetration of the Internet. A wide variety of commerce remains conducted via
e-Commerce, including electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. US online retail sales reached $175 billion in 2017 and are projected to grow to $335 billion by 2018.

This study revealed that e-commerce security is critical for organizations to enhance business performance. According to Alam (2014) organizations are required to take on a dynamic approach to security planning and governance. It is, therefore, vital that the governance security remain incorporated with the running of the enterprise to undertake the issues of information security from an administrative perspective hence making use of its leadership, corporate structures and guidelines for the preservation of informational assets. In addition to regulating risks affiliated with security attacks companies are forced to raise their investments in security technologies such as firewalls, intrusion detection systems, encryption, backup, authentication devices, and access control systems among others. For instance, Berghof, a non-governmental organization with operations based in Sri-Lanka, realized the importance of integrating security into the organizational process because of protection cuts across issues that impact all dimensions of the organization (Collins, 2013). They decided to incorporate the administrative staff as a part of the security team because security needs a sufficient overall angle, which cannot stay fully ensured without the contribution of administrative staff.

The study also revealed that privacy is important to attract customers to use e-commerce platforms. Alharbi and Hodkinson (2013) argue that privacy concerns were a critical reason why people do not go online and provide false information. The FTC evaluated that the majority of online businesses had not attained the concept of adopting even the most fundamental elements of fair information practices. Indeed, relatively few consumers believe that they have very much control over how personal information, revealed online, is used or sold by businesses (Dogo, 2014). Tackling privacy, however, is no easy matter. If nothing else, privacy discussions often turn heated very quickly some people consider privacy to be a fundamental right; others consider it to be a tradable commodity. Detailed arguments about the historical progression of privacy can be found, for example, Privacy of the person which encompasses the right to keep body functions and body characteristics private, Privacy of behavior and action which includes sensitive issues such as sexual preferences and habits, political activities and religious practices, Privacy of communication which aims to avoid the interception of communications, including mail
interception, the use of bugs, directional microphones, telephone or wireless communication interception or recording and access to email messages.

This study revealed that fraud detection mechanisms are essential in enhancing customer security. According to Choi and Seol (2015), globalization and increased use of the Internet for online shopping have resulted in a considerable proliferation of credit card transactions throughout the world. Thus, rapid growth in the number of credit card transactions has led to a substantial rise in fraudulent activities. The emerging of credit card fraud is increasing dramatically due to the exposure of security weaknesses in traditional credit card processing systems resulting in the loss of billions of dollars every year. Choi and Nazareth (2014) argue that credit card fraudsters deploy a large number of techniques to commit fraud. To combat the credit card fraud effectively, it is essential first to understand the mechanisms of identifying a credit card fraud. Over the years credit card fraud has stabilized much due to various credit card fraud detection and prevention measures.

5.4 Conclusion

5.4.1 The Effect of E-commerce Mode of Payment on Performance

This study concludes that there is a positive and significant relationship between e-commerce mode of payment and business performance. E-commerce mode of payment enhances revenues through different streams of transacting. The study also concludes that e-commerce mode of payment enhances service delivery to customers since potential clients are able to conveniently make payments on their purchases using the best payment alternative that makes them comfortable. This study concludes that cash on delivery payment method attracts more revenues since customers tend to believe what they physically see. In addition to that this method is effective as customers get to avoid online fraudsters while at the same time having privacy that they seek.

5.4.2 The Effect of Internet Availability on Performance

This study concludes that internet availability is essential for business performance. Availability of internet of internet services supports e-commerce operations to run effectively since e-commerce activities requires internet for it to run efficiently. The study also concludes that availability of internet enhances marketing activities of e-commerce activities on various markets that might want to buy the company’s products and services. The study concludes that availability of internet enhances expansion of the company’s
operations since customers with access to internet in a different market can easily access the company’s website or applications to make a purchase.

**5.4.3 The Effect of E-commerce Security Factors on Performance**

This study concludes that e-commerce security factors are crucial for business performance of e-commerce business. E-commerce security factors influences customer trust as well as satisfaction since customers are concerned about their safety when accessing online shopping applications and websites. The study concludes that having fraud detection mechanisms will enhance customer satisfaction as well gaining a competitive advantage for the organization.

**5.5 Recommendations**

**5.5.1 Recommendations for Practice**

**5.5.1.1 The Effect of E-commerce Mode of Payment on Performance**

This study recommends that Twiga Foods should implement various mode of payments to enhance their business performance as well market share. This will attract more customers into the site as they have various options to choose from on how to make their payment for their goods. The company should also embrace cash on delivery payment method to tap into a larger market since some customers feel safer when they are able to make their payments physically as opposed to online.

**5.5.1.2 The Effect of Internet Availability on Performance**

This study recommends that the company should partner up with potential partners and support initiatives that are in line with the improvement of internet service supply in the country to enhance e-commerce business. The study recommends that the company’s services should also be in line with the internet services that the suppliers in the country are offering for an easy access.

**5.5.1.3 The Effect of E-commerce Security Factors on Performance**

This study recommends that Twiga Foods should develop fraud detection mechanisms that will ensure safety to their customers when accessing the website. Fraud detection mechanisms will enhance customer trust as well as loyalty that is critical for the company’s business success. Twiga Foods should also create awareness on safety measures that their
customers should always take into consideration when interacting with their website with intentions of making a purchase.

5.5.2 Recommendations for Further Studies

This study investigated the effect of e-commerce on performance in agricultural sector in Kenya with a case study of Twiga Foods Limited. Future studies should be carried on other sectors like pharmaceuticals, hotel industry, retail industry and education to establish the effect of e-commerce on performance.
REFERENCES


Buck, P. (2016). Electronic commerce - would, could and should you use current Internet payment mechanisms? *Internet Research, 16*(2), 121-143.


APPENDICES

APPENDIX I: RESEARCH QUESTIONNAIRE

SECTION I: GENERAL INFORMATION

This section contains demographic questions. Kindly respond to the best of your knowledge.

1. Kindly indicate your gender in the space provided.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
</tbody>
</table>

2. Kindly indicate your age range in the space provided.

<table>
<thead>
<tr>
<th>Age Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 Years</td>
<td></td>
</tr>
<tr>
<td>26-33 Years</td>
<td></td>
</tr>
<tr>
<td>34-40 Years</td>
<td></td>
</tr>
<tr>
<td>41-47 Years</td>
<td></td>
</tr>
<tr>
<td>48 and Above</td>
<td></td>
</tr>
</tbody>
</table>

3. Kindly indicate the level of your education.

<table>
<thead>
<tr>
<th>Level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td></td>
</tr>
<tr>
<td>Bachelor’s</td>
<td></td>
</tr>
<tr>
<td>Master’s degree</td>
<td></td>
</tr>
<tr>
<td>Doctorate degree</td>
<td></td>
</tr>
</tbody>
</table>

4. Kindly indicate your department.

<table>
<thead>
<tr>
<th>Department</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td></td>
</tr>
<tr>
<td>Research and Development</td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td></td>
</tr>
</tbody>
</table>
5. For how long have you worked at Twiga Foods?

<table>
<thead>
<tr>
<th>Year Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 year</td>
<td></td>
</tr>
<tr>
<td>2-3 years</td>
<td></td>
</tr>
<tr>
<td>4-5 years</td>
<td></td>
</tr>
<tr>
<td>Above 5 years</td>
<td></td>
</tr>
</tbody>
</table>

SECTION II: The Effect of E-commerce Mode of Payments on Business Performance

Kindly indicate the extent to which you agree with the following statements on the effect of e-commerce mode of payments on business performance. Kindly (✓) tick where appropriate based on a Likert Scale of 1 to 5. 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The use of Multiple Modes of payment enhances revenues in the company.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Electronic mode of payments enhances profitability in the company.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Electronic mode of payment has enhanced service delivery in the company.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Electronic mode of payment enhances competitive advantage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Electronic mode of payment has enhanced your business performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Electronic mode of payment has increased your market presence.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The use of mobile payment enhances customer loyalty in your organization.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The use of mobile payments enhances customer trust among the company’s customers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The use of mobile payments enhances brand loyalty.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Cash on delivery payment system enhances efficiency in the company’s operations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Cash on delivery payment system improves customer service delivery.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. Cash on delivery attracts more revenues as opposed to other means of payments.

13. Cash on delivery payment systems is essential for your market share.

14. Cash on delivery payment system is crucial for the company’s cash flow.

15. Cash on delivery payment system enhances customer transactions.

SECTION III: The Effect of E-commerce Security Factors on Business Performance

Kindly indicate the extent to which you agree with the following statements on the effect of security factors on business performance. Kindly (✓) tick where appropriate based on a Likert Scale of 1 to 5. 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree.

<table>
<thead>
<tr>
<th>No</th>
<th>Statements</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E-commerce security is essential for your business performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fraud detection mechanisms enhances customer trust.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Online customer privacy improves customer attraction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>E-commerce security improves business performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>E-commerce security enhances competitive advantage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Fraud detection enhances customer loyalty in the organization.</td>
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<td>7</td>
<td>Fraud detection is essential for customers to undertake transactions.</td>
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<td>8</td>
<td>Customer privacy measures enhances business performance.</td>
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<td>9</td>
<td>Customer Privacy mechanisms online influences the amount of transactions carried out by customers.</td>
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<td>10</td>
<td>Online security measures is essential for your profitability.</td>
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<td>11</td>
<td>Privacy security mechanisms influences customer traffic in the company’s website.</td>
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<td>12</td>
<td>E-commerce security measures is essential for business growth.</td>
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<td>13</td>
<td>Fraud detection reduces risk exposure to the company.</td>
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<td>14</td>
<td>Privacy measures enhances customer convenience.</td>
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<td>15</td>
<td>Fraud detection is essential for securing transactions in your company.</td>
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</tbody>
</table>

**SECTION IV: The Effect of Internet Availability on Business Performance**

Kindly indicate the extent to which you agree with the following statements on the effect of internet availability on business performance. Kindly (✓) tick where appropriate based on a Likert Scale of 1 to 5. 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree.

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<tr>
<td>1</td>
<td>Internet services are the core resources for your operations.</td>
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<td>2</td>
<td>Availability of internet contributes to the growth of your business.</td>
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<td>3</td>
<td>Internet services enables your company to tap into various markets.</td>
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<td>4</td>
<td>Availability of internet supports efficiency in your operations.</td>
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<td>Availability of internet services enhances your marketing activities.</td>
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<td>6</td>
<td>Internet availability enables the company to cut down advertising costs.</td>
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<td>7</td>
<td>Availability of internet ensures successful service delivery to your customers.</td>
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<td>8</td>
<td>Internet technology enhances customer payments.</td>
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<td>9</td>
<td>Internet technology allows customers to access the company’s services.</td>
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<td>The availability of internet services is essential for the company’s business model.</td>
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<td>11</td>
<td>Internet technology enhances customer care service delivery.</td>
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<td>12</td>
<td>Internet technology enables ICT infrastructure in your organization.</td>
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<td>13</td>
<td>Internet technology enables your organization to expand its operations.</td>
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<td>14</td>
<td>The availability of internet technology enhances coordination of activities in the organization.</td>
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</tbody>
</table>

Thank you for your time.
APPENDIX II: RESEARCH COVER LETTER

TO WHOM IT MAY CONCERN

19TH JULY 2019

Dear Sir/Madam,

REF: PERMISSION TO CONDUCT RESEARCH- MOHAMED MOHAMUD MIRE

STUDENT ID NO. 653950.

The bearer of this letter is a student of United States International University (USIU)-Africa pursuing a master’s Degree in Business Administration.

As part of the program, the student is required to undertake a dissertation on the “Effect of E-commerce on performance in agricultural sector in Kenya: A case of Twiga Foods

Limited.” requires him to collect data.

Please note that information provided will be treated with utmost confidentiality and will only be used for academic purposes.

Kindly assist the student get the appropriate data and should you have any queries contact the undersigned.

Yours Sincerely

[Signature]

Prof. Amos Njuguna
Dean School of Graduate Studies, Research and Extension
Tel: 0730 116 442
Email: amnjuguna@usiu.ac.ke
APPENDIX III: NACOSTI RESEARCH PERMIT

This is to Certify that Mr. Mohamed Mire of United States International University Africa, has been licensed to conduct research in Nairobi on the topic: EFFECT OF E-COMMERCE ON PERFORMANCE IN AGRICULTURAL SECTOR IN KENYA: A CASE OF TWIGA FOODS LIMITED for the period ending 14/August/2020.

License No: NACOSTI/P/19/406

Applicant Identification Number: 759458

Date of Issue: 14/August/2019

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