



**The Investigation of the Impact of Mobile Technology
“M-Commerce” on the Business Success of African wax-prints:
A Case of Enugu, Nigeria.**

**Arinzechukwu Dennis Obiora
Student Number: 213570638**

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**Supervisor:
Dr. B.Z Chummun
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College of Law and Management Studies

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Name: ARINZECHUKWU DENNIS OBIORA	No: 213570638	
Title: The Investigation of the Impact of Mobile Technology “M-Commerce” on the Business Success of African wax-prints: A Case of Enugu, Nigeria		
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Abstract

African wax-print is a traditional attire worn in most parts of Africa, and has been around for over a century. It has been noted that most of the products are imported rather than locally produced. This has made them more expensive. The use of technological strategies has been exploited outside African continent to harness the business potential of African wax-prints and its social implication particularly in an African setup. This study explored the implications of m-commerce on the business success of African wax-prints. This investigation dwelled into technological modernization, consumer demands and network chains, and how these factors influence the business success of African wax-print. A quantitative survey of sample size of 384 randomly selected respondents was conducted. Respondents were individuals who have a minimum of two years' experience on the trade of African wax-prints. Questionnaires were administered to the respondents in Enugu-North, Nigeria. Only 336 respondents, accounting for 87.5% responded to the questionnaire. Data obtained was analyzed using the statistical package for social sciences (SPSS). The statistical analysis illustrated a number of significant relationships between the biographical data and various statements in the questionnaire.

The results revealed that technological modernization, consumer demands and network chains positively influence the business success of African wax-print. The study further revealed that m-commerce positively impacts the growth of business of African wax-prints in Enugu-North, Nigeria. A quest for stakeholders, both individuals and organizations, can collaborate to create a friendly mobile platform that enhances the consumer experience and the ease of promoting the business success of African wax-print. Furthermore, future studies can be conducted in other regional parts of Nigeria on African-wax prints. Future research can also consider researching other aspects of m-commerce such as m-logistics to improve the retailers experience in Enugu-North, of Nigeria and other parts of Africa at large.

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List of abbreviations

Description	Full Meaning
m-commerce	Mobile Commerce
e-contents	Electronic Contents
SPSS	Statistical Package for Social Sciences
e-commerce	Electronic Commerce
PDA	Personal Digital Assistant
AMPS	Advanced Mobile Phone Service
D-AMPS	Digital-Advanced Mobile Phone Service
PCS	Personal Communication Systems
CDMA	Code Division Multiple Access
GSM	Global System for Mobile Communication
WLAN	Wireless Local Area Networks
Wi-Fi	Wireless Fidelity
IEEE 802.11b	Wave Lan
TAM	Technology Acceptance Model
IP	Internet Protocol
GDP	Gross Domestic Product
LGA	Local Government Area
SIMs	Subscriber Identity Modules
WAP	Wireless Application Protocol
GPRS	General Packet Radio Service
SMS:	Short Message Service
SHPD	Perceived Security in The Handling of Private Data
UTAUT	The Unified Theory of Acceptance and Use of Technology

CHAPTER ONE

1.1 Introduction

The textile trade came into existence in Africa in the 15th century primarily by the Europeans (mainly the Britons) (Steiner, 1985). The Indians were also involved in the textile trade in Africa but in limited quantity (Andrew, 2008). The British and the Indian merchants used the Western and Southern African provinces as an entry point of textile trade into Africa respectively. The large quantities of natural resources possessed by the Western African province made her the highest commercial hub for triangular trading which consisted of “barter system” on textiles and guns, whiskeys for slaves, kola, cocoa and natural resources for finished European products (Chuku, 1999; Andrew, 2008; Mead and Pedersen, 1995). The British exported dull colours on heavy (woollen) linen (textiles) to Africa (Steiner, 1985) while the textile trade with the Indians comprised of bright and colorful textiles which the Africans used as an indication of wealth or “as a form of currency” (Mead and Pedersen, 1995; Steiner, 1985).

The coincidence between the industrial revolution and the colonization of Indonesia by the Dutch in the 17th century paved a way for the Dutch colonist (Akinwumi, 2008) to improve the traditional textile (Javanese batiks). The improved textile (known as wax-print) came in varieties, and was actualized because the Dutch colonists copied the textile model of the Indonesians (Nartey, 2011). Wax-prints were of different types and were named based on the location they were exported. These were the “Dutch wax-prints” which were produced for the Dutch market and “African textile” which were exported to Africa. In the recent times, African textiles are known as African wax-print. Wax-prints were further improved and were the pioneering catalysts that contributed to the development of contemporary rich textile designs (LaGamma, 2009).

As the spread of wax-prints importation continued across Africa and particularly in Western Africa, its spread into Nigeria through the Delta region was reported in the 1860s. At this time, the British traded wax prints with the local Ijaw people of Aboh (Okwu, 2010). The British then furthered the importation of wax-prints into the heart of the Igbo land (Enugu). In addition to wax-prints, the British populated Enugu with other European products which consisted of enamel products, stock-fish, beverages, gin, tobacco, soap, machines, and beads (Chuku, 1999). All of the

above-mentioned products including wax-prints were brought into Enugu by the British using the Christian missionaries and the barter trade system. In the recent times, African wax-prints have been one of the major culturally accepted and retailed products in Enugu. Following the technological trends of the late 1900s, the business success of African wax-print could be tested with the use of mobile technology.

Mobile technological devices have played a very important role in the re-designing and integration of the global civilization (Perekwa, Prinsloo, and Van Deventer, 2016). The evolution of mobile technological devices has positively influenced different nations on the scale of their business environment and personal lives (Bank, 2012; Kelly and Minges, 2012). Further improvement in the mobile technological devices has enhanced the accessibility and affordability to businesses and consumers by leveraging on the evolving adaptive power of mobile application concepts such as Mobile Commerce (m-commerce) to the global community (Philip, 2017). M-commerce illustrates one of the leading categories in electronic business. The products and services of m-commerce transfers value in exchange for information, supports e-content and transactional activities when connected on mobile wireless devices (Tengti and Kao, 2009; Ivan, Milodin, and Zamfiroju, 2013).

These innovations have transformed our personal communication, mode of business conducts, entertainment preferences, and the sequence of how to manage our lives and affairs (Richmond, 2015). The combined advantage of the mobile devices and mobile applications provides the drive for e-contents and outstanding information offered at a flexible cost (network providers). This presents a competitive advantage to individual users and other various businesses with an increased cyber security functions (Arpaci, Yardimci Cetin, Turetken, 2015). Thus, it can be argued that the business success of African wax-prints can be influenced positively by the strategic forces of m-commerce which are technology modernization, advancement of network chains, and on-the-go consumer demand (Zhang et al., 2002). In the light of the above, this current study aims to investigate the impact of mobile technology “m-commerce” on the business success of African wax-prints.

1.2 Motivation for the study

Several studies have been vital to the business success of African wax-print and m-commerce. For example, the study on the “Sub-Saharan Africa Potential Production Source for Textiles and Apparel” by Commission (2009) explained the manufacturing sector contributions (which includes the textile and other apparel inputs) of less than five percent to Nigeria’s Gross Domestic Product (GDP) in the last 10 years. In addition, “the Impact of Mobile Technology on Micro and Small Enterprises in Zimbabwe in the Post-Hyperinflation Economic Era” (Perekwa, Prinsloo, and van Deventer, 2016) contributed to the revenue creating opportunities and employment which increased the economic progress (GDP growth) in developing nations.

Another study describes the “Driving Forces for m-commerce Success” (Zhang, Yuan, Archer, 2002) focuses on the certainties of m-commerce and the key factors that drive its success. Furthermore, the “development of a web-based mobile airline ticketing model with usability features” (June and Ant, 2005) relates the user-friendliness features in the adoption of m-commerce. Lastly, the “Sustainable Agriculture Mobile Commerce (SamCom), extending the rural grocery supply chain through M-Commerce” (Lu and Perreau, 2005) focuses on the integration of all value-chain processes in the farm to its final destination.

However, there has been scarcity of study and literatures on the factors of m-commerce that contribute to the business success of African wax-prints particularly in Nigeria. Therefore, the need arises to address the gaps in the literature especially in Enugu context. Hence, the current study fulfils these objectives by investigating the impact of mobile technology “m-commerce” on business success of African wax-prints in Enugu, Nigeria.

1.3 Focus of the study

The study was focused on the strategic forces of m-commerce which are technology modernization, advancement of network chains, and on-the-go consumer demand. Some of the factors on the business success of African wax-prints which participated in the study include value creation (employment and the high-status fashionable designs). The study was focused on the retailers (private businesses) not that of the governmental scale. Hence, this study explored the impact of m-commerce on the business success of African wax-prints among the retailers and traders in Enugu, Nigeria.

1.4 Problem Statement

Africans have a long history with the African wax-prints since the 1800's (Nielsen, 1979; Nielsen, 1980). The rapid decline in the local production of the African wax-prints in Nigeria "from 137,000 workers in 1996 to 24,000 in 2008" (Commission, 2009) led to the high unemployment rate and importation of wax-prints from Shandong in China (Victoriana, 2011). Other countries such as Uganda, Kenya, India and Netherland were also involved in the importation of (textile) wax-prints to Nigerian but in limited quantities. Due to the high demand of textiles across Nigeria, there is a need to identify flexible and sustainable business models to increase the availability of textiles in Nigeria. Recent innovations in technological developments shows that the future of flexibility in business could rely heavily on mobile devices. The concept of m-commerce leverages on the wireless internet to provide the user with location based information and mobile transactions. This improved technology fixated the convenience to adopt wireless internet usage on a mobile device. Based on the review of the literature, the strategic forces of m-commerce were discussed in relation to the business success of African wax-prints in Enugu, Nigeria. The challenges are highlighted below:

Alternative Economic and Social Impact

The current receding state of the Nigerian's economy paves a way to adjust and integrate new skills (m-commerce) to improve the local economy by creating opportunities, employment and reducing dependencies on the Federal and State Government in Nigeria (Makinde, Fajuyigbe, Ajiboye, 2015). The improvement on the Nigerian telecommunication sector can help new business models to explore investments (Fahy, Feller and Finnegan, 2004).

Dependency on foreign technology

The need to increase the demand of the recent technological developments in Nigeria (Makinde et al., 2015) can be achieved by imploring the use of m-commerce on mobile wireless device to create an active customer demand (Coursaris and Hassanein, 2002) and the drive on technical upgrades (technological modernization) of mobile devices and applications (Clarke III, 2001).

Scarcity of Literature

The need to investigate the apparels that appeals to other ethnic groups in Nigeria is a norm and the integration of inter-ethnic trade in Nigeria. However, consumers and retailers of the wax-prints have not fully harnessed the benefits associated with m-commerce. This study would help investigate how the use of technological modernisation, advancement of network chains, and on-the-go consumer demand of the business success of African wax-prints. Hence, it would comprehensively help to understand the impact of m-commerce on the business success of African wax-prints in Enugu, Nigeria.

1.5 Research hypothesis

Considering the fact that the strategic factors driving the success of m-commerce is still at an initial stage of operation and acceptance, consumers may consider this approach to be revolutionary. The influence of the strategic factors can be tested in this study. Therefore, the following hypotheses are proposed;

H1: A positive relationship of technological modernisation exists on the business success of African wax-prints.

H2: A positive relationship of consumer demand exists on the business success of African wax-prints.

H3: A positive relationship of network chains exists on the business success of African wax-prints.

1.5.1 Null Hypothesis

H0: There are no positive factors on the business success of African wax-prints.

1.6 Objectives of the study

The objectives are as follows

Primary Objective

The primary aim of this study is to measure the impact of m-commerce on the business success of African wax-prints.

Secondary Objectives

- To establish how technological modernisation can directly connect consumers to local retailers on the business success of African wax-print;
- To determine how consumer demand can create a flexible market on the business success of African wax-print; and
- To identify the role of the network chains in locating the retailers on the business success of African wax-print.

1.7 Methodology

Quantitative research method was adopted for this study because it best applies to the research problem and it offers the leverage to examine the relationship between the subdivisions (variables) of m-commerce on African wax-prints. The Statistical Package for Social Sciences (SPSS) Version 24 (IBM Corporation, New York, NY, USA) was used for the coding and analyzing of the data. Lastly, the techniques adopted in the data analysis were inferential and descriptive statistics was used.

1.8 Chapter Outline

This study consists of six chapters.

Chapter One: Consists of the introduction, the background study of the key elements (African wax-prints, mobile technology and m-commerce) on their prerequisites to innovation as well as setting the context and outlining the aim and objectives of the study.

Chapter Two: Covered the review of the entire literature, which focuses on the theoretical, empirical review and the evolution of the m-commerce key trends. This spanned both locally and internationally. The theories that are used in the interpretation of the findings of the study are explained in this chapter. Furthermore, this chapter outlines the findings of previous studies related to the case study and also builds the conceptual framework for the study.

Chapter Three: Also covered the research methodology that was applied in the study. This comprises of economic, social, and relative impact and its need to the nation, sample size, data collection techniques. Hence, the methods used were guided by the literature review, aim and objectives of the

study. The qualitative research design and specific sampling methods are discussed. Finally, the data collection instrument and method of data analysis are explained in this chapter.

Chapter Four: Covers the presentation of results obtained from the respondents in the study.

Chapter Five: Covers the discussion of results from the previous chapter on presentation. These discussions are extracted from the themes that were developed from the data analysis.

Chapter Six: Covers the recommendations and conclusions. This chapter of this study examines the final conclusions reached during the course of the study and also suggests recommendations for future research.

1.9 Summary

This chapter discussed the origin, the trends of African indigenous (influenced textile) which is generally known to be African wax-prints and the transformation of our personal communication, mode of business conducts, entertainment preferences with the use of mobile technology and mobile applications. The objective of the study was to determine if the strategic factors of m-commerce such as technological modernisation, consumer demand and network chains positively influence the factors on the business success of African wax-prints. The retailers in the business of African wax-print can benefit from the study. Chapter 2 focuses on the literature review for the study.

CHAPTER TWO

The Review of Literature on the Investigation into the Factors Influencing the Business Success of African Wax-Print.

2.1 Introduction

This chapter discusses the origin of textile from the 15th century and the various transition phases it undergone to its current day finished product called the African wax-prints. It also discusses the migration trends and the business success factors of mobile technology and m-commerce. Finally, the advantages, disadvantages, the success stories of all the mentioned factors and the conceptual framework are also discussed.

2.1.1 The transition of batiks to wax-prints

The textile trade came into existence in Africa in the 15th century primarily by the Europeans (mainly the Britons) (Steiner, 1985). The Indians were also involved in the textile trade in Africa but in limited quantity (Andrew, 2008). The British and the Indians merchants used the Western and Southern African provinces as an entry point of textile trade into Africa respectively. The large quantities of natural resources possessed by the Western African province made her the highest commercial hub for triangular trading which consists of “barter system” on textiles and guns, whiskeys for slaves, kola, cocoa and natural resources for finished European products (Chuku, 1999; Andrew, 2008; Mead and Pedersen, 1995). The British exported dull colors on heavy (woollen) linen (textiles) to Africa (Steiner, 1985). While the textile trade with the Indians comprised of bright and colorful textiles which the Africans used as an indication of wealth or “as a form of currency” (Mead and Pedersen, 1995; Steiner, 1985).

In the late 16th and early 17th century, the Indians attempted to expand their textile trade in Africa because their existing importation of textiles to England was jeopardized by the introduction of the economic protectionism policy on the domestic woolen industry in England by the British government (Ayres, 1989; Landes, 1969). However, their attempts were hampered as a result of the colonization of Indonesia by the Dutch (Nielsen, 1980). This meant the source (Indonesia) of their textile resources for exportation to Africa was hindered. Another contributory factor to Indian’s loss of the textile trade in Africa was of the political domination of Africa by Europeans

(Akinwumi, 2008; Picton and Becker, 1995; Nielsen, 1980; Picton and Mack, 1989). As an implication, the Europeans dominated the trade of textile across Africa (Picton and Mack, 1989).

The coincidence between the industrial revolution and colonization of Indonesia by the Dutch in the 17th century provided an avenue for the Dutch colonist (Akinwumi, 2008; Nielsen, 1980) to improve the traditional textile (Javanese batiks). The improvement of textile was realized because the Dutch colonist copied the textile model of the Indonesians (Nartey, 2011). They produced and rolled out different products of batik that includes Ceylon and the Moluccas, Sumatra, India, and Java (Robinson, 1969). This variety of batik products now became popularly known as the (African textile) and was then re-named in the textile trade business as the “wax-prints” (Nartey, 2011; Picton and Mack, 1989).

The wax-prints can be defined as “a way of printing colored patterns on cloth that involves putting wax over some parts of the cloth” (Nartey, 2011). The ease in the production by the Dutch also gave room for large production of “wax-prints” for the European market. However, the “wax-prints” that was produced and sent to the European market was rejected because of its multiple colored designs (Akinwumi, 2008; Nielsen, 1980). The Dutch colonist then collaborated with the British merchants by contracting their textile mills in factories overseas (Haalem-Leyden) to manufacture “wax-prints” specifically for the West African markets (Nielsen, 1980). This influenced the British to increase their provincial market preferences in Africa (Akinwumi, 2008; Picton and Mack, 1989). The Europeans used three mediums to infiltrate the “wax-prints” in Africa. They introduced the barter system of trade in the African market which furthered improved their colonial strategy in Africa. The Christian missionary used the “wax-prints” to attract the African natives into practicing Christianity. Finally, it was used as a customary incentives for the West African soldiers to their wives between the 1810 and 1862 in Indonesia (Akinwumi, 2008).

2.1.2 African wax-prints migration into Enugu

The wide spread of colonization across Africa between the 18th and 19th century provided an opportunity for the British to expand their (textile) trade. Although the British colonial rule in Nigeria was imminent, the Igbo’s have made remarkable contributions to the Igbo political economy because their men dominate the far away trade and their women led the local markets in

the bight of Biafra (Chuku, 1999). In 1860, the British trade agents was banished and confined to the coast by the local Ijaw people of Aboh (Okwu, 2010) before the 1884-85 Berlin Conference which partitioned and subjected Africa to different European colonial rule (Maranga, 1993).

Queen Victoria led the penetration into the heartland of the Igbo nation in the late 1886. This penetration brought the Igbo's sovereignty under the political and economic control of the British rule to exploit its resources. The international trade with the British consisted of the export of raw materials such as palm kernel, red oil and cocoa, and the import of textiles and wax-prints, enamel products, stock-fish, patent medicines, beverages, umbrellas, gin, tobacco, soap, cosmetics, guns and gunpowder, sewing machines, rice, cosmetics, biscuits, salts and beads from the European industries to the Igboland and other markets in the Nigeria (Chuku, 1999).



Figure 2. 1: **Samples of African wax-print adopted from Mclay (2017)**

This significantly contributed to the strength of colonialism, provincial interests (Steiner, 1985), economic importance, political presence and social growth (Spencer, 1982) in the African continent. The Europeans (British and Dutch) stylishly and successfully built local production factories of (textiles) wax-prints in the Western, Eastern and Southern regions in Africa (Picton and Mack, 1989; Spencer, 1982). The deployment of these factories speedily integrated different cultures and regions within the African continent (Andrew, 2008). Africans accepted the European colorful wax-prints as an indication of wealth (Mead and Pedersen, 1995), and this contributed a

very important role in the African culture (Robinson, 2016). The early twentieth century signifies the upsurge of (textile) wax-prints into Africa and later more imports were made to West African factories from Japan (Akinwumi, 2008). The declaration of the protectorate and colony of the Southern Nigeria was heavily explored in 1900 (Logaby, 2012).



Figure 2. 2: African wax-print at the factory adopted from Mclay (2017)

Although the British reached Enugu in 1903 with their trade and Christian missionaries (Chuku, 1999; Logaby, 2012). The presence of the colonial masters in Enugu witnessed a sharp decline in the political trade control of the middle men by expanding their market commercially and later reduced them to petty traders in the 1930's with marginal profits on their investments (Nwabughuogu, 2009). The Europeans discovered the indigenous production of local textile in Africa by Africans (Buggenhagen, 2011; Micots, 2008). This unique textile was of a rich “handmade textiles” of different styles of arts and cultural designs, and other important signs in

the African culture such as picture of birds and trees (Rovine, 2009). The local textile production was mainly identified in West Africa and other different provincial ethnicities in Africa (Buggenhagen, 2011; Rovine, 2009). The West Africans adopted different techniques such as strip weaving, yarn preparation, spinning, knitting, (Publications, 2009) “cuticle raphia embroidery” and printing patterns in the unique production of African textile (Chrisman-Campbell, 2015). However, the European peasants further imitated the styles and adornment from different cultures in Africa and they re-integrated the designs into the differentiated designs and production of the wax-prints (Irwin and Brett, 1970). Other studies of Picton and Mack (1989) and Weinstein (2008) suggested that most of today’s African (textile) wax-prints reflect a strong blend of European designs. The account on African (textile) wax-prints has been the pioneering catalyst that contributed to the development of rich textile designs (LaGamma, 2009).



Figure 2. 3: Samples of various African wax-print on the display

2.2 Business Successes of African wax-print

2.2.1 Mass Employment

In the manufacturing sector across Africa, wax-print is the most intensive labour sector. In the West Africa, Economist Intelligence Unit (EIU) proclaims a 4% growth on the GDP of Sub-Saharan in 2012 and anticipated 5% between 2013 to 2016 (Economist, 2012). With the population of over 170 million in Nigeria there is a huge potential for mass employment with a record of “29.10 per cent in 2010 to 49.7 per cent in 2011 and currently put at 50.2 per cent” (Uzoho, 2017). The huge market of wax-print products has a differentiated regional market of different needs of wax-print which includes the design, texture and colours. Currently, there are about 400 or 500 jobs created annually by Vlisco and currently expanding business operations by building wax-print plants in Nigeria in 2018 (Aworinde, 2017) to renew international fashion and apparel retailers.

In Nigeria, retailers of wax-prints target the middle and low-income earners to benefit from long term gains. This opportunity creates a wide spread of other services such as promotion of apparel making skills, improvement on the practical skills to improve quality, the output and competence level of the apparel business. The expansion of the wax-print industry can be considered on the following recommendations:

i. Springboard Cities

The emerging cities such as Lagos, Enugu and Port-Harcourt are the strong hold of middle class earners, growing infrastructural and political stability. Nigerians are recognized for the consumption of wax-prints and retailers are looking on expanding the trade to the rest of the country to create mass employment.

ii. Partnerships

Nigerians are proud of their heritage and are drawn to the mixed western styles and fashion. Local retailers have formed coalition strategic force with both local and textile manufacturers to consider the primary needs such as colours, texture, accessories and designs to suit the Nigerian market through its franchise model. On the other hand, tailoring has been a success driven by the entrepreneurial spirit to traders who stand to benefit from the populace in the form of socially recognised overviews into the market.

iii. Sponsorship and Opportunities

In 2006, the establishment of fashion training facilities located in Apapa, Lagos by the joint collaboration of the Human Capital Development Centre (HCDC) and the Nigerian Export Promotion Council (NEPC) led to establish the wax-print “manufacturing industry as valuable with the hopes of boosting non-oil exports” (Uzoho, 2017). Furthermore, designers and provisional establishments are promoting interests in fashion with the young Nigerians who understand the trends of the Nigerian fashion industry better than external businesses. This effect leads the foreign fashion businesses in the Nigerians market to benefit from seeking joint partnerships with local industry champions who embrace aid and cross cultures to improve on the indigenous knowledge and local contacts in return.

iv. Go Mobile and differentiated

In Africa, the lack of mobile infrastructure has been a trending challenge. Countries in Africa such as Kenya, Nigeria and South Africa still remain the world’s advanced market for mobile finance, mobile commerce and payments (Jätyri, 2012). Although the growing trend is yet to be full popularized in the African continent and particularly in Nigeria, the adoption of low-risk engagement of consumer demands for the wax-print products could be facilitated through the e-portal. This provides the direct customer with distinct designs, colours and brand preferences choice of the wax-print in about 12 days.

2.2.2 Success events of wax-prints between the 17th to 21th centuries.

- 1) As a customary importance to the Indians, batik was related to the initiation into adulthood, childbirth ceremonies, weddings and ritual rites; while in the Javanese, it was a symbol of women’s fertility and a means of clan membership in the Sunda island of Indonesia (Newman, 1977). Before Indonesia was colonized by the Dutch colonist, the Javanese advanced their skilfulness on the batik which they fashioned and produced symbolic “Parang Rusak” as one of their known batik designs and other non-symbolic designs in the sixteenth century (Forge, 1989). Further studies noted the “Parang Rusak” as an imperial outfit worn by the male nobles of the Djakarta family (Forge, 1989; Newman, 1977). The Javanese influenced different philosophies and cultures on the Dutch, the Chinese and the Indians over the outfit of their

imperial and supreme leaders. This resulted in the integration of the magnificent beasts in the Buddhist deities, the mythical snail of Chinese traditions and the “tree of life” which was adopted by the Europeans and other cultures (Irwin and Brett, 1970).

- 2) African (textile) wax-prints was used for batter system and a tool for the reintegrating segregated societies in Africa (Andrew, 2008).
- 3) African (textile) wax-prints communicates the sign of authority, social status, and the manifestation of wealth in the society (Andrew, 2008; Gott, 2009; Spring et al., 2001).
- 4) Prehistoric African (textile) wax-prints were used as arts and decorations (Chrisman-Campbell, 2015; Kent, 1973; Ornament, 2013; Spring et al., 2001).
- 5) African (textile) wax-prints are used as costumes, rites of rituals and historical document (Spring et al., 2001).
- 6) The original collection of handmade textiles as a significant resource for the continuous production of a different variety of African wax-prints imported into Africa by Beving & Co (Grotz, 1978).
- 7) The transition from the prehistoric textiles to the modern African (textiles) wax-prints have evolved from the strip weaving, yarn preparation, spinning and knitting to the mechanized technological product of patterned bright colors of wax-prints (Picton and Mack, 1989; Weinstein, 2008).
- 8) The event of the 1960 civil rights and black is beautiful movement steered the solidarity and raised the conscious awareness on cultural identification for Africans in the United States of America to embrace the textiles and wax-prints particular from West Africa as their symbol of African culture (Mead and Pedersen, 1995).
- 9) Incorporated the portraits of local public leaders in the late 1920’s and the remembrance of the fallen politicians, comrades, activists and heads of state from the 1950’s in the design of the (textile) wax-prints (Picton and Becker, 1995).

- 10) The 1960's African cultural object designed to identify with the socio-cultural embracement of self-determining nations.
- 11) In West Africa, (textile) wax-prints is one of the most significant markets for consumer goods because of the sub job it creates in the fashion industry. Finished fashion products of the wax-print initiates an advantageous national, continental and global trading networks which is beneficial to international consumers, local partners and central state institutions in the competitive industry of fashion (Prag, 2013).
- 12) In Igbo speaking areas, women has been historically known in a stylish display of eye-catching (textile) wax-prints in the public spectacles as part of the perquisites to the wealth of the ethnic group (Hansen and Madison, 2013).

2.2.3 Cultural Significance

Although the African wax-prints hold a great consensual significance to an African citizen, LaGamma (2009) and Rovine (2009) explained the lack of recognition and acceptance of African wax-prints in the western societies. In the present day, the African arts, textile, and wax-prints have influenced numerous fashion exhibitions all over the world (Andrew, 2008). Despite the modified and mixed designs of European and African traditions, the wax-prints socially and culturally gained popularity in the various African provinces.

In West African region, Ghana and Nigerian have been popularly known for “traditional African weaving and textiles” (Idiens, 1980). In Nigeria, the local (textiles) made by the South East (Igbo's) is very popular. They used the double-heddle loom to produce Akwete while the Cross-River people of Nigeria used the single-heddle loom produce weave raffia (Picton and Mack, 1989). In addition, the South-Western tribe (Yoruba's) adopted the complex weft-faced patterning and the lace weave which the products are Asoke and Adire (Buggenhagen, 2011; Chrisman-Campbell, 2015).

The finished textiles in Nigeria have unique names and cultural significance. For example, the Hausas' call the textile *riga*, *wando*, *bubariga*, while the Yoruba's call it *bubba*, *sokoto*, *agbada* (Picton and Mack, 1989; Andrew, 2008). Other ethnicities regarded the imported the African

(textile) wax-prints products as “Abada, Ankara, Real English-Wax, Veritable Java Print, Guaranteed Dutch, Java Hollandis, Uniwax, Ukpo, and Chitenge” (Akinwumi, 2008).

2.2.4 The distribution of African wax-print

Beauchamp (1957) and Domowitz (1992) explained the retail strategies integrated on the wax-prints at several local markets in Africa. The African traders adopted the catchy slogans, phrases, and words that were in no association with the popular designs available in the market (Nielsen, 1979). The facet of this African wax-prints robbed Africans of their culture and local production of textiles with no participation of discussion in rebranding the African textile industries by African artists, scholars, and designers (Akinwumi, 2008). In the recent times, the marketing, sale and the business success of African wax-print could be tested with the use of mobile technological applications.

2.3 Mobile technological devices and its application “m-commerce”

2.3.1 The origin of mobile devices

In the 21st century, mobile technology devices have played a very important role in the re-designing and integration of the global civilization (Perekwa, Prinsloo, and Van Deventer (2016). Although mobile technology has been around since the late 70’s, it is regarded to be in a smaller group in the field of Information Technology (Bolat, 2016). This technology is still considered to be novel. It has a unique adaptability on the continual software advancements to meet the consumer experience and needs. Different studies defined mobile technology as any portable device that can be used for cellular communication (Bolat, 2016). Kinshuk and Chen (2005) defined mobile technology as a portable device that can access a broad-spectrum of electronic data for knowledge, entertainment and business irrespective of time zone and locality. The evolution of mobile technological devices has positively influenced different nations on the scale of their business environment and personal lives (Bank, 2012; Kelly and Minges, 2012). Several modifications were done on the mobile technology before its transition into a standard device that supports telephony, a navigation system, internet and web services, instant messaging, games, payment gateway and

many more remote services (Frandes, Deiac, Timar, and Lungeanu (2017), Olufunmilola Ogulande, Oladimeji Olafare, Ayuba Sakaba, (2016) and Philip (2017).

Since 1994, e-commerce has played a vital role in the design of web pages and online shopping sites (Nielsen, Molich, Snyder, Farrell, 2000). At the end of the 90's, mobile web-enabled devices gave businesses and clients the leverage to operate remotely, carryout electronic transactions, shopping and booking (reservations) using an internet-enabled smart device or a Personal Digital Assistant (PDA) without being limited to laptop or desktop computers with a fixed internet connection. In the United States, Bellman, Lohse and Johnson (1999) determined the ubiquitous nature of mobile devices and its capability to access the internet; while Arpacı et al. (2015) analyzed the statistical data on mobile technology use and its results exponentially attained a 97% growth in clientele base compared to 15.5% in 2001 with the periodic innovative concepts focused more on the user needs (Myungsin and Daesung, 2010). Notably, the technological conceptual state-of-the-art on mobile influence, its innovative functionalities and acceptance is unexpectedly changing people's behaviours worldwide (Olufunmilola Ogulande et al., 2016). Consequently, the exponential development on mobile technological devices has enhanced the accessibility and affordability to business and consumers by leveraging on the wireless networks and unconventional alternatives on e-commerce and mobile application concepts gave rise to the birth of m-commerce (Philip, 2017).

2.3.2 What is m-commerce

Adi, Al-Qayedi, Zarooni, and Mabrouk, (2004) defined m-commerce as a portable wireless device for a business transaction over the internet. Different authors including Andreou, Chrysostomou, Leonidou, Mavromoustakos, Pitsillides, Samaras and Schizas (2002) also defined m-commerce as the transfer of value in the exchange of goods, information and services with the aid of an internet connection on a wireless device. While Turban, King, Lee, and Viehland (2002) defined m-commerce as a subdivision of e-commerce that runs on a portable mobile device with a customized operating system on which it connects to a wireless network to perform monetary transactions. Malloy, Varshney, and Snow (2002) further explained that m-commerce application includes wireless business re-engineering, end-user location on mobile marketing and shopping, mobile

bidding, mobile finance and banking, mobile inventory management and mobile interactive games. The massive recognition of m-commerce due to the growing exponential rate of internet users on wireless communication (Bokai and Mohammadi, 2010).

According to Turban and Volonino (2010), the pre-requisites of e-commerce and m-commerce have a different basic requirement for operation. The primary purpose of both platforms still remains to assist users more quickly and efficiently in the same business process. M-commerce has emerged to become the universal leveraging trend for new and existing businesses due to extensive dependency on mobile technology. Naqvi and Al-Shihi (2014) narrated that mobile e-commerce has been in implementation while Ivan et al. (2013) explained that the software tools for electronic business are still evolving. Newcomb, Pashley and Stasko (2003) further explained that m-commerce can cater for the needs of individuals and business in a number of different functions at real-time and it also plays an important role in the online procurement of products and services. Although mobile technology and m-commerce have a great influence on commercial services, the combined importance of this new concept (technology) will outstrip the traditional e-commerce in the next decade (Lee and Benbasat, 2003).

2.3.3 The Integration

The integration of mobile technology and m-commerce has recorded tremendous successes in the fields of agriculture, banking, education, health, and marketing. Some of the successes are

- 1) a seamless and flexible communication channel between different organisations, the public, and individuals to share information's to generate measurable feedbacks;
- 2) The increased convenience and accessibility of information are for the consumer experience;
- 3) In a developing country such as Nigeria, this may have possibly unleashed the solutions to the nation's socio-economic challenges to create a transactional model between business and consumers, and the direct communication between the government and her citizens (Information et al., 2012).

However, it also has its downsides, some of which are

- 1) Mobile technology is an engaging interface that limits or escalates the complexity of conversation in the nature of communications that occur in a head-on (Bolat and Kooli, 2013; Chin

Lay and Balakrishnan, 2016) and it causes drawbacks and loss of attention during lectures for individuals (Scornavacca et al., 2009).

2) Several authors including Bolat (2016), Bolat and Kooli (2013), Christensen (2006) and De Reuver et al. (2008) illustrate the disruptive and tactical innovation for businesses and individuals. For businesses, this is aimed at a price discount, flexibility and the competitor's dominance (Sandström, 2010).

3) When mobile devices are combined with m-commerce, an individual can feed their unending addiction on the online stores by spending above their means (Scornavacca et al., 2009).

2.4 Strategic factors of m-commerce

The business success of African wax-prints was determined by the following strategic factors of m-commerce: *technological modernisation, advancement of network chains, and on-the-go consumer demand*. These factors fully integrate with the sub-factors which form the base functions of the strategic component.

2.4.1 Technological modernisation

Technological modernization deals with the internal processes that integrates different key concepts to the materialization of m-commerce application in the business success of African wax-print. These innovative factors are discussed below.

I. Mobile devices

This component has been an innovative driving force since the 1900. It played an important role during the 1st and 2nd world wars. Today it has transformed from stationary device to a handheld device. Feldman (2000) and Felicita and Jayanthi (2012) explained that several companies around the world have been working tirelessly to improve the structure and quality of services mobile handheld devices provides. These advancements furnish it with the features of wireless keypad (Young, 2001), handwriting or speech recognition (Herman, 2000), digital encryption, subscriber identity modules (SIMs) and the support of Java on SIMs (Zhang et al., 2002).

ii. Network Structure

The introduction of mobile technological devices gave rise to the advancement of wireless communications interfaces. The mobile device technology was initially developed on the Advanced Mobile Phone Service (AMPS), then later upgraded to the Digital-Advanced Mobile Phone Service (D-AMPS) and finally transitioned to a Personal Communication Systems (PCS) (Mark and Lei-da, 2004). The PCS delivers a complete digital solution which is widely accepted around the world. The PCS subdivisions consist of Code Division Multiple Access (CDMA) which is predominantly used in America and Global System for Mobile Communication (GSM) is used in both Europe and America. The PCS subdivisions are of wideband-CDMA and wireless broadband technologies. Organisations are heavily advancing in Wireless Local Area Networks (WLANs) to link employees and mobile customers in various locations. The leading WLAN technology is the regular Wi-Fi system. One of the regular Wi-Fi technology options is the IEEE 802.11b technology which numerous organisations have adapted to provide wireless communication services to consumers and employees within a particular geographical area such as residence, library or campus areas, airports and other public places (Mark and Lei-da, 2004).

iii. Mobile setup for connectivity

WAP: Wireless Application Protocol (WAP) is a core requirement for mobile communication platform. This is designed for mobile operators to access the internet over wireless networks using mobile wireless devices to access mobile apps. The WAP's ease of deployment has fetched it a far-reaching acceptance because of its influence on the existing internet technology. Raisinghani (2001) mentioned WAP as an m-commerce predominant communication protocol tool. However, WAP tends to be slow and lacks high-speed connection due to the location of the user. It is also very expensive to maintain and it is a continual growing pain to individuals and organisations that still use this technology (Garfinkel, 2002).

GPRS: This is a wireless broadband that works as an accompaniment to the GSM platform. It has an error-proofing mechanism that connects the mobile device physical location information to the internet. GPRS sends data in high-speed packets and it is very effective for various m-commerce products information (African wax-prints) and services (reservations, auctions, bookings, payment, transactions and stock quotes). GPRS was designed to operate on 3G networks and its

rigorous requirements for location services which the wireless service provider provides a network-based system that delivers the physical location data with “an accuracy of 300 meters for 95% of calls and 100 meters for 67% of calls” (Brewin, 2001) is much faster than WAP.

SMS: Short Message Service allows wireless mobile operators to send messages to other operators. Rose (2002) concerns on 3G relies greatly with its incompatibility with WAP and various service providers adopt this service. SMS is a low technology with the highest turnover rate in the communication industry. SMS advertising strategy can cause an upsurge in sales. Organisations are hopeful that the integration of SMS and GPS would deliver a timely advertising fact to the clients in the near future at the right place and the right time.

iv. Network Security

Security challenges have posed a threat in the deployment of m-commerce applications. This is very vital because of the numerous transaction of information particularly in the financial sector, public key infrastructure (PKI) the solution of end-to-end encrypted communication (Dezoysa, 2001; Zhang et al., 2002). The user validation on the single or dual SIMs are stored by the network provider and the industry standards ensures the support of digital wireless services to the user (Dezoysa, 2001; Kalinic and Marinkovic, 2016).

Lockie (2002) and Young (2001) described the emergence of an automatic wireless biometric solutions. This solution increases the security levels ranging from fingerprints, iris scan, voice and face recognition, and hand geometry (Liu and Silverman, 2001; Wayman et al., 2005). A practical application was tested in 2001 and authenticated as the future of security that cannot be replicated by other users in the events of a domestic accident or loss (Kotzin, 2006). The rapid growth in the m-commerce application provides solutions to different security threats. Therefore, the deployment of quality solutions heavily depends on the industry interdependent functions and standards.

2.4.2 Advancement of Network Chains

Coursaris and Hassanein (2002) propose that m-commerce has a very complex and dynamic internal system where numerous connections form a sequential and supportive background to optimize the work in progress of all the collaborative dependencies within the market players. This

section integrates the flow of interactions between the internal operatives in the industry to facilitate results. Therefore, this section will discuss the Value Network model of m-commerce. The value network will comprise of multiple interdependencies such as content providers, network operators, application developers, service providers, technology vendors and customers. The entire system could experience collapse if any of the connected inter-dependencies is absent or undeveloped. Kalakota and Robinson (2002) and Kalluvilayil (2001) explained the additional subgroups on organisations with more direct business goals. These subgroups of the value network are discussed in detail.

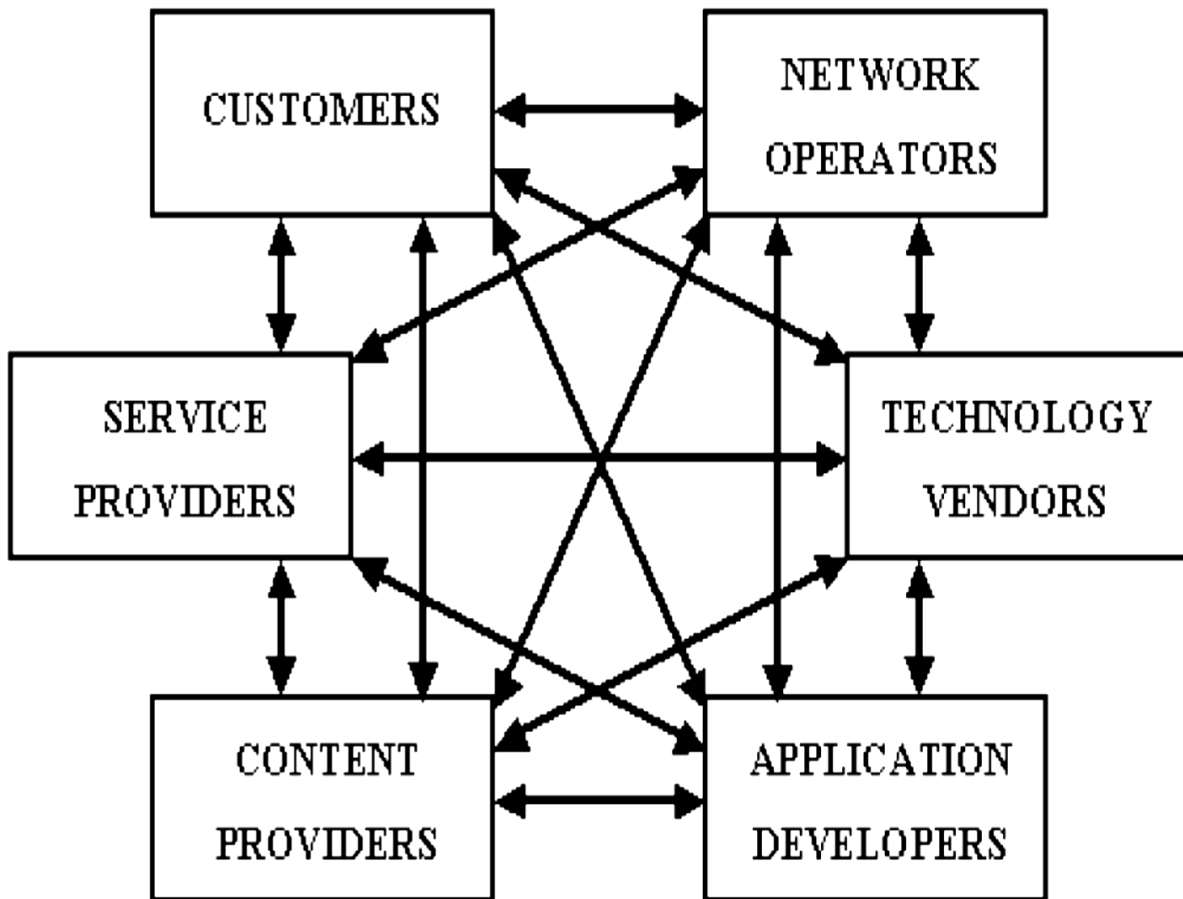


Figure 2. 4 :M-commerce of value network adopted from Coursaris and Hassanein (2002)

Customers: This category produces the need for the demands to be met by the other technical stakeholders. Although they are the most important inter-dependencies in the sub-group, they also provide feedbacks, the need to improve services and constant revenue to the entire value network.

Network operators: This category is the most significant in the value network after the customers. They are also regarded as the network carriers because their operations are the most crucial in the realization of the m-commerce industry. They participate in an extended activity that deploy the wireless network infrastructure which covers a wide range of services such as advertising to consumers on the availability of high-speed data services and other related new features that maintain the quality of services and products they offer to their users.

Service providers: This category sells communication bandwidth to provide access for a wireless solution to the internet service providers through its unique access points. This solution satisfies the needs to purchase a subscription for the service.

Application developers: These include the software programmers, administrators and system engineers who cater for a wide spectrum of events such as architecture and hosting. These subgroups create improvable solutions using the available technology. The consumer's need is key and when it is addressed the returns will be boundless for the solution providers. The programmers and developers provide solutions that meet the consumer demands. Future products are modified on the application specifics in regard to the newer improvements that could enhance the consumer experience. They have a flexible business model that integrates all the subgroups.

Technology vendors: These categories of experts rely theoretically on the designs, research, and development of new trends to enhance the available technology to accommodate the needs of the consumers. They improve the convergence of Internet Protocol (IP) networks on the transmission towers of the software and hardware connectivity platforms on the different aspect of the critical infrastructures. They also build on improving their inefficiencies such as compatible mobile devices on the latest technological network. These inefficiencies can cause a multivariate action on their finances, failure of new technology or even project abandonment. These vendors apply leasing, sales, administrative fees and licenses as the business model to run their operations.

Content providers: These are a final category of stakeholders who feeds directly to the consumers through the content providers, portal providers, and content aggregators. The content providers partner with the network operators to provide services for the consumers to attain an exclusive access at a premium cost through the network carriers. These measures offer a truly ubiquitous

wireless network that offers all content on unrestricted access regardless of the network selection. Advertising and subscriptions are part of the business models.

Table 2. 1 : The Roles and Income Distribution in the Advancement of Network Chains

Adopted from (Wang and Lu, 2008; Zhang et al., 2002; Coursaris and Hassanein, 2002)

Role	Responsibilities	Key companies	Sources of income
<i>Content providers</i>	Developing Smartphones and tablets	<i>Samsung, Apple</i>	Retailing phones or tablets and other equipment
<i>Network operators</i>	Developing communication structure to support voice and data streaming.	Modern carriers such as <i>Vodacom, cell c, Telkom, and MTN.</i>	Charges from increased network traffic and airtime
<i>Service providers</i>	Provides digital services, server deployment, Offline backup, security and systems integration.	System integrators and web-hosting companies e.g. Oracle	Shared revenue with application developers
<i>Technology vendors</i>	Provides branded information and simple search facilities critical to m-commerce application.	Internet portal providers such as <i>Microsoft, Yahoo, Google</i>	Subscriptions charged to network operator and promoters
Customers	Using billing systems such as airtime, user based location and precise application based	Network operators such as <i>Vodacom, Cell C, Telkom, and MTN.</i>	Airtime and data subscription.
<i>Application developers</i>	Availing end-user apps such as banking, maps and retail apps	Internet service providers such as <i>Microsoft, Yahoo, AOL</i>	Revenue from customers for services or products purchased

From Table 2.1 above indicates that further improvement need to occur between the commercial links of the m-commerce application. Čerić (2000) adopted the model of internet economy and attained four layers for e-commerce which is also related to m-commerce. In the advancement of Network Chains, our adopted model in the order of integration are “Communications Infrastructure, Applications Infrastructure, m-commerce Intermediary, and Mobile Commerce” apps (Zhang et al., 2002).

Communications Infrastructure consists of network operators and content providers. In addition, Applications Infrastructure covers the software companies, Content providers and the network operators. M-commerce Intermediary layer includes market planners, content providers, advertising. Lastly, m-commerce apps consist of application developers which provides services to its customers. The seamless integration on the Advancement of Network Chains cannot be overemphasized because the growth or receding value of one core infrastructure affects the other.

2.4.3 On-the-go consumer demand

Over the years, the use of mobile technology has evolved for different consumer needs. The need becomes more dynamic because of the evolving nature of mobile technological application. The use of mobile application particularly m-commerce have changed the way people communicate and transact but it does not come without its challenges (Albarakati; Veijalainen et al., 2003). Although different studies of (Bigné et al., 2007; Naqvi and Al-Shihi, 2014; Nawi et al., 2015; Yang, 2005; Ying and Rastrick, 2014) have researched on the adoption of m-commerce and its challenges, On-the-go consumer demand is the most active strategic factor that can drive the business success of African wax-print.

Evidence from different studies shows that consumer demand has played the exponential factor that drives success in the mobile device industry. Several studies have recorded mobile device 'revolution' in the industry. China held the record of 250 to 300 million subscribers in 2005 (Sliwa, 2001) while Africa records the fastest growth with over 33 percent of the African continent “350 million” are mobile device subscribers (Etzo and Collender, 2010). Around the world, an estimated 5.6 billion people would own a smart device by 2020 (Kumar, 2017).

Consumers needs and demands have played the most critical role in the significance of m-commerce. Mobile communication devices with variant features and the consumers' needs vary from live video streaming, voice and voice note communication, and messaging. While the consumer demand comprises of adaptable packages such as location and time specifics, the need for more demand arises from the consumers.

2.5 Importance and integrating of the business success of African wax-print

Despite the domination of western culture Rovine (2009) narrated the ordeal of the identification Africans remained unchanged towards the wax-print as means to embrace their lost heritage because it holds a “deep historical and cultural roots of a sophisticated African art”. The combined relative advantage of the mobile device and mobile application provides the drive for e-contents and outstanding information offered at a flexible cost (network providers) as a competitive advantage to individual users and other various businesses with an increased cybersecurity functions (Arpaci et al., 2015). Zhang et al. (2002) linked the business success of African wax-print in Enugu in the relative collaboration of the three strategic factors such as technology modernisation, advancement of network chains and on-the-go consumer demand.

Technology modernization fully integrates with the network of chains to delivers more functionalities on low charges, increasing consumer needs and generating more attracting values for the customers. The revenue generated and distributed strengthens technological modernisation which integrates several parties on advancement of network chains. Lastly, the on-the-go consumer demand presents the need to improve the network chains and further develop new applications for technological modernisation. This integration of these strategic factors is fully explained in Figure 2.2

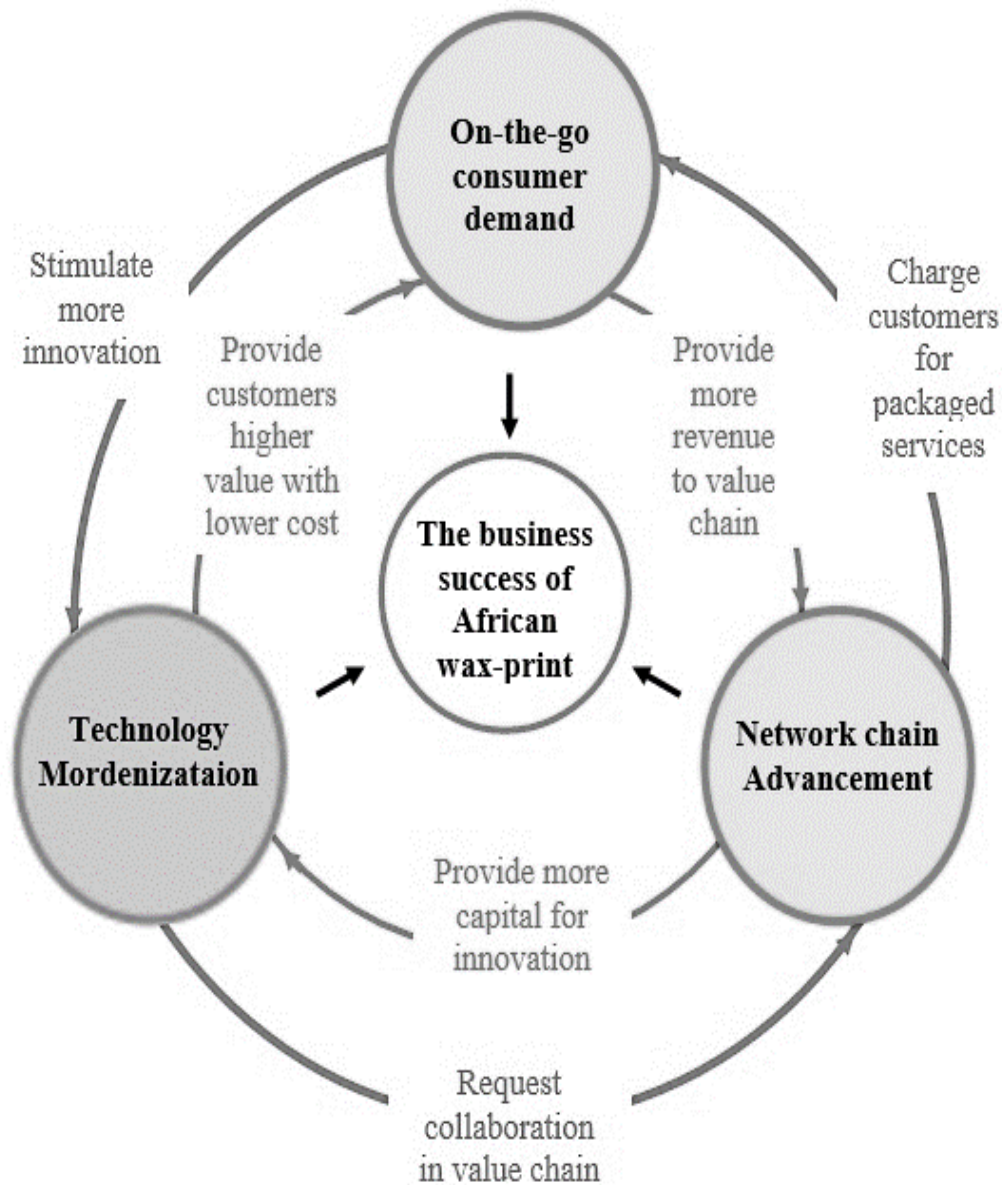


Figure 2. 5 : The integration of 3 strategic factors to the business success of African wax-print Source: Adapted from Zhang et al. (2002)

2.6 M-commerce: The application

Haghirian et al. (2005) explained the reformation of the consumer needs with the adaptation of mobile devices and applications. This study would help individuals and organizations to gain insight into the business success of African wax-prints by leveraging on the strategic factors to

determine a business solution worth exploring. The focus is on a consumer mobile application for products and services of standard shopping. The m-commerce usability characteristics are the functions applied in the operational process. These include the exhibition of product information, product image illustration, transfer of payment details and personal information (Ozok and June, 2010). Currently, the transition of business model from the web portal (e-commerce) to a friendly a mobile wireless versions (m-commerce) is where transactions can be carried out and such organizations are eBay, Amazon, and Alibaba (Turban et al., 2002).

Varshney and Vetter (2001) specified music on request app (Spotify), office applications (Office 365), shopping (Shopify), booking (Trivago) and travel (Yellow pages), financial (Times) and banking (ABSA) applications are widely used in m-commerce while Senn (2000) described location-based services (Taxify and Uber), content delivery services (Google map, designing and tailoring house) and business operation (retailers of wax-prints) are appropriate and successful m-commerce applications. Good potential characteristics of m-commerce applications must have an active and passive expansion (Senn, 2000) especially in the procurement capacity. The user acceptance was greatly influenced by the explosive development of mobile and wireless network and the continual innovation and improvement of the mobile wireless and technological device (Varshney, Vetter, and Kalakota, (2000).

These innovations have transformed our personal communication, mode of business conduct, entertainment preference, and the sequence of how to manage our lives and affairs (Richmond, 2015). The ubiquitous nature of mobile technology devices and m-commerce drives a deep innovation in the facets of social, economic, industrial, political and environmental revolution (Perekwa et al., 2016). As a result, the table on figure 2.3 illustrates the attributes of m-commerce on the values on mobility and accessibility as two essential characteristics of m-commerce (Un Kim, 2006).

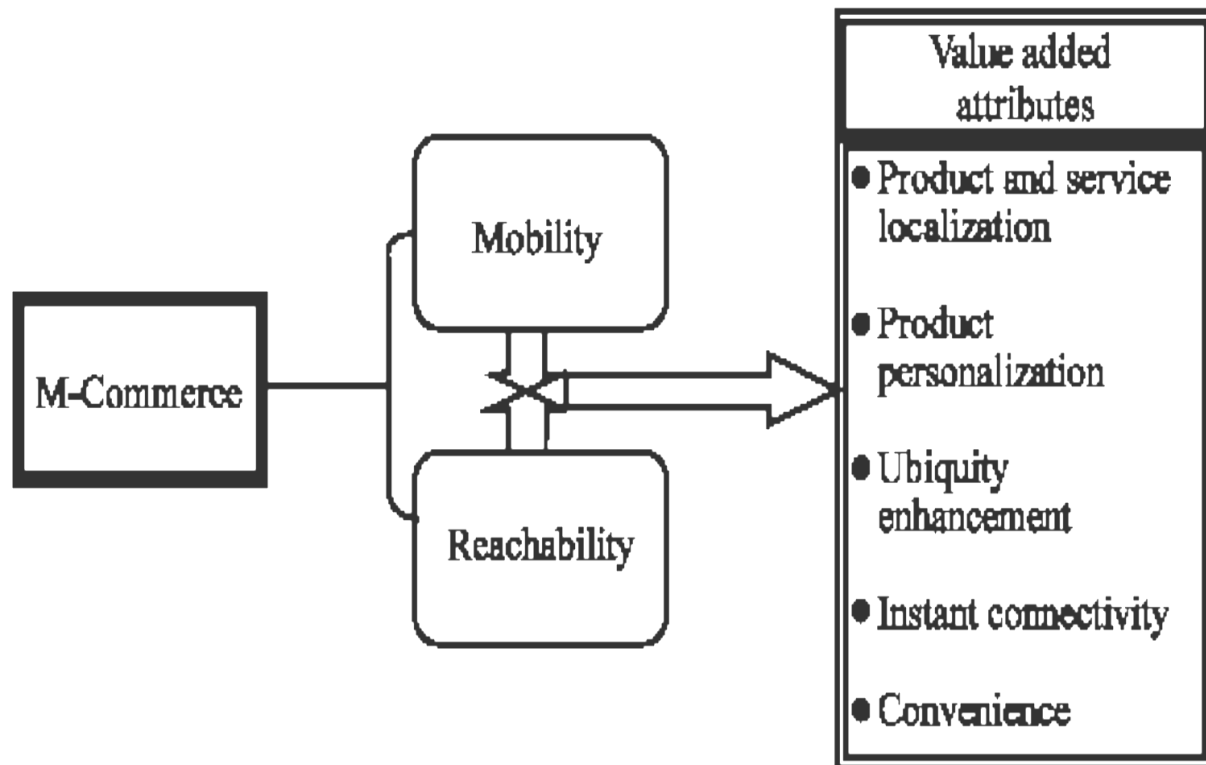


Figure 2. 6 : **Characteristics of m-commerce adopted from Un Kim (2006)**

The joint properties of accessibility and mobility ranges from Time-Critical Services which provides the user with time critical services such as SMS alerts and emergency such as instantaneous communication between two users (Senn, 2000; Siau and Shen, 2003; Venkatesh et al., 2003). Location-Aware and Location-Sensitive Services also identifies the position of a user if the information is available for delivery of direct service (Liang and Wei, 2004). Identity-Enacted Services identifies users based on their demographic and transactional data (Mallat et al., 2004; Varshney and Vetter, 2001; Varshney et al., 2000). Ubiquitous Communications and Content Delivery Services enables interaction anywhere, anytime such as SMS, voice and video calls, data streaming and multiple mobile services. Business Process Streamlining enriches the process of business efficiency through improved mobile services quality. Mobile Offices increases productivity of workers by leveraging on wireless environment to access mobile application through the mobile devices (Yuan and Zhang, 2003).

2.7 M-commerce in Nigeria

In the global index statistics, Nigeria is the third growing consumer nation of portable handheld devices and the fastest in Africa with a growth of 25.22% in 2007 of telecom users. The sporadic growth of handheld devices has brought about a major development in the areas of commerce (Ayo et al., 2007; Bankole et al., 201). The exponential growth of handheld devices has introduced the innovative use of concept of m-commerce (technology) to enhance businesses and consumers experience to build a sustainable means for economic development (Auta, 2010; Obe and Balogun, 2007). The national institutions, organizations, emerging trends and individuals providing different business solutions have adopted the use of m-commerce into their service delivery systems to increase their efficiency in their services. This has led to increase of the on-the-go customer demand of m-commerce contents and services (Obe and Balogun, 2007). The most successful implementation of m-commerce are effective in the banking sector using their mobile device (Agwu and Carter, 2018).

2.8 Instituting m-commerce in Enugu

The dynamics and determinants that encourage users to attain the business success of African wax-print in Enugu consists of technological acceptance model (TAM), technological satisfaction, success factors in m-commerce, social strategies and social contribution. These determinants were briefly discussed on how it would influence the consumers to mitigate the challenges of promoting the business success factors in Enugu.

2.8.1 Technological Acceptance Model

Spreer and Rauschnabel (2016) explained the Technology Acceptance Model (TAM) as the conceptual framework that formed the bedrock for the adoption of modern technology. The adoption of m-commerce is dependent on the related factors of TAM (Pedersen, 2005) and the intention to use m-commerce application is dependent on the behavioral factors model (Venkatesh et al., 2003). Consumer acceptance and use of information technology was designed under four constructs which are *performance expectancy* is beneficial to consumers; *effort expectancy* is attributed with consumers usage of technology; *social influence* signifies its importance to other users; and *facilitating conditions* denotes the expectancy and available support on consumer

behaviour. The main constructs of effort expectancy, social influence and performance expectancy influences the behavioural intent of technology while the facilitating conditions and behavioural intent influences the technological use (Venkatesh et al., 2012). Therefore, the technology acceptance for consumers is the construct that aids “The unified theory of acceptance and use of technology” (UTAUT) (Venkatesh et al., 2003). However, Spreer and Rauschnabel (2016) criticized the behavioral factors model on the position of TAM adoption and its uses in numerous perspectives. Davis (1989) described the model of acceptance of TAM from an individualistic view which is, the “perceived ease of use” and the “perceived usefulness”.

2.8.2 Technological satisfaction

Geyskens, Steenkamp, and Kumar (1999) stated that the term “satisfaction” is influenced by economic and psychological conditions. Garbarino and Johnson (1999) and Pavlou (2003) advocated that trust is a prerequisite to customer fulfillment. This effect can directly affect the level of usability of m-commerce as a result of the conceived trust (Singh and Sirdeshmukh, 2000). Although different people react differently the overall satisfactory remarks will be made explosive or recede the provided services (Spreng et al., 1996; Yi, 1990). The impact was to relate more on the personal behavioral on the use of m-commerce due to the individualistic exposure and personal satisfaction (Chen et al., 2013; Hwang et al., 2009; Siau et al., 2004).

2.8.3 Key success factors in m-commerce

Users have preference for m-commerce because of ubiquity, convenience, localisation, personalisation, wireless value and mobile value (Shin, Jeon and Choi (2006) and Turban et al. (2004). *Ubiquity* refers to the ability to receive information and to transit from any location in real time. It also offers the accessibility simultaneously. The industry’s that these features are News, Sports and Weather. *Convenience* refers to the agility and accessibility of data streaming provided from wireless devices. It has no limitations of time and place. These are features commonly associated with the banking and communications industry. *Localisation* provides the location of Internet user. It also provides the information or service relevant to the geographic position of users.

The services it provides to their clients are coupons and customer service. *Personalization* are the features used by individual. It also provides the individual based target marketing and offers the opportunity to personalize messages and send contents to segments. These features are in favour of advertising and database application. *Wireless value* refers to the use of any wireless device. Irrespective of services it provides, it doesn't support full mobility but offers some convenience that is created by wireless services. *Mobile value* arises from the convenience of scalable electronic mobile services that supports our mobile experiences.

These factors offer flexibility, ubiquity and convenience to the consumer. Venkatesh et al. (2003) mentioned the wired access limitations, time pressure, convenience and location as the main motivation to adopt m-commerce as a competing advantage in a customized fashion of the accomplishments in a wireless commerce. Other user factors that support the value proposition for m-commerce are mobility, network reliability, community, cultural environment, accessibility of network, usefulness of contents, billing system, user-based interface, security and privacy policy, contents-updating frequency, simultaneous multitasking, customized and personalized service, affordability of price, variety of contents, vogue and trend of m-commerce, compatibility of device and familiarity of graphic user interface (Shin et al., 2006).

However, some limitations still affect the user preference on m-commerce. Although customer confidence is still near to the ground for mobile transactions, the issue of usability is underexplored and the affordability of internet bandwidth and services are expensive (Turban et al., 2004). The difference between the activities and the environment of m-commerce includes the type of internet service used communication procedures and language development (Coursaris et al., 2003). Although more m-commerce application runs on the smartphone, user interface characteristics are the key elements in the sale of wireless retail (Bellman et al., 1999). Also, the challenges associated with usability is the continual frustration due to limited screen resolution and smaller screen size (Rao and Minakakis, 2003).

2.9 Practices of m-commerce

2.9.1 Social Strategies

M-commerce rapidly increases the mobile capacity by providing exceptional access to a large customer base. The upswing of m-commerce payment applications allows the mobile wireless device to adopt the payment characteristics of a credit card used in retail outlets. This is also known as mobile payments. Other known wireless payment (organisations) services are Google Wallet. Global retailers such as Target and Walmart are developing wireless mobile device payment applications to influence the shopping behavior of its clients with lower prices and strategically avoid the extended fee for processing payments from the outsourced payment companies. Clients search for deals and contracts by making contributions with online or offline retailers, by the product category, by location or by registering for customized notifications which notifies them of new business deals. This is achieved by ensuring the seamless integration of m-commerce application such as marketing, booking and shopping apps (Swartz, 2001).

M-commerce is revolutionizing the approach of retailing with the power of the wireless internet, data streaming and the purchase of mobile applications from the online store. Network service providers target casual wireless device users with inexpensive basic plans on enhanced bandwidth and a price-controlled one-size-fit-all bandwidth for businesses. In addition, m-commerce is transforming the coupon clipping. The acceptance and convenience of the coupon are on the widespread across various retail outlets. This can be scanned through the screens or cameras on a wireless device and it can be sent to other mobile applications and email clients.

2.9.2 Social contribution

i. *Welfare*: Although the frontiers of m-commerce are limitless, Xiaodi et al. (2016) argued that m-commerce is beneficial to businesses and consumers. M-commerce applications provide the convenience of shopping, payment flexibility and high volume (reservation) transactions for consumers through a wireless mobile device. In addition, consumers have unrestricted access of direct communication with the sellers (Hoffman and Novak, 1996). Newer mobile devices tend to be more advanced from the previous version. Recent mobile wireless device serves as a wireless hotspot for other devices such as computers and tablets.

For casual mobile users, their graphical interface could do more such as games, videos, snap photos and send text messages (Hayward, 2012). These advancements can integrate the wireless devices to easily identify products by viewing at their packaging, or by scanning their barcodes and instantaneously showing product analyses or reviews and different prices from online accessible brokers. This made the process of product inquiry more flexible and easy to use for consumers who are interested in the product. Consumers can go as far as comparing same advertised products from different resellers in their various geographical locations for the ease of convenience and choice. Furthermore, the consumer can make reservations using vouchers, coupons or even electronic currency transfer.

ii. *Job opportunities*: m-commerce plays a critical role in enriching the users of mobile wireless communication with a context-aware system that accelerate compatibility demands and convergence (Sun et al., 2009). This concept can be integrated with m- advertising and m-location application. This can be associated to the geographical location information between an organisation, an employer and the consumers through wireless or data communication on a mobile platform (Mark and Lei-da, 2004). Cross-platforms on m-social such as Facebook, Instagram, Google+ and Pinterest drive extreme popularity in the wireless device environment. User preferences and usability gave rise to choice of products and services. In this environment, the platform advertises and markets to the potential clients on the m-social network the artistic creation, style and design which would be carried out by designers, tailors and embroidery makers. Other varieties of options of finished work on a fashionable wax-prints can be processed it into a finished product of different fashionable products such as shoes, suits, bags, decorative furniture's and other accessories from the client needs. These cross-platform can also send and receive emails, high-quality audio, digital photographs, video images, accurate location mapping and text form messages from their wireless device between clients (Robins, 2003).

2.10 Significance of m-commerce

2.10.1 Benefits

M-commerce's main advantages includes

i) the capability to trade and participate in virtual auctions 24/7 in a different location closest to their vicinity at real-time. ii) The rapid of migration e-commerce to m-commerce apps with the availability and use of wireless mobile application and network infrastructure. iii) Reduces prices due to competition. iv) User infrastructure and sophisticated mobile designs. v) The choice of preferred products and services from multiple preferences. vi) The improved service delivery on quality and efficiency of products and services.

2.10.2 Challenges

The leading disadvantages are described on the account of Smith (2001); Tengti and Kao (2009); Ackerman et al. (1999); Basso et al. (2001); and Spiekermann et al. (2001), they pointed out the issues of trust, security, convenience, authentication and privacy on the consumer's personal information to a third party. Physical characteristics of security gaps have not been addressed thoroughly. This challenge has been a subset of wired internet communication until the 128-bit encryption was deployed.

Major improvement should be attributed to wireless security to meet the demands of (consumers and business) privacy when transmitting related information's over m-commerce on a secure wireless connection. In addition, the issue of physical security is a growing concern because of the portability and sizes of mobile wireless devices. For example, the question of "what happens if your m-wallet is pinched" arises when one's mobile device is lost, misplaced or stolen. Only a few users use the data encryption features, locking keypads and passwords to guide the content of the wireless device in case of theft. Employees and consumers must be educated about the risk with the use of the device instruction manual which is a means of prevention. IT managers find it even more difficult to determine the standardization and compatibility for the m-commerce applications on the technical platform (Financial, 2004). This is as a result of the screen size and shape of the mobile device, it lacks data rich interfaces and information retrieval difficulties (Halvey et al., 2006; Nielsen, 2000). Security for mobile wireless transaction is extra challenging and more strategies for directives on mobile communication can be adapted to improve security gaps (Tarasewich et al., 2002). Finally, emerging technologies lacks good quality of service, location management, security reliability and roaming (Varshney et al., 2000).

2.10.3 Successes

Balasubramanian et al. (2002) explain how little is well-known on the expandability of mobile technological applications. Therefore, m-commerce has a limitless coverage of services on the wireless internet. This drives transaction in all mediums from a local store, to buy tickets, to a hotel accommodation, to booking of a plane ticket, to a taxi or car rental, to a home delivery services on food menu, to the shopping on one end of the world to the product to be delivered at the other end, to an instant payment either local or international and in the other industries around the world. Consumers using m-commerce applications can be instantly provided with the details of the information's they are interested in.

This builds a new trend and dimension of customer relationship. Although m-commerce application is compelling and user friendly, it serves as an integral part of an organisation's competitive advantage. This drives innovation especially in the retail industry. M-commerce forms an integrated and core functional part of the m-social apps such as Facebook and Google. These platforms integrate users to make seamless purchases from online stores advertised on the platform, making donations to other organisations hosted on the platform, the purchase of premium accounts and promotional pages on the same platform, and the reserve bookings for future business or personal or social purposes on the platform. Although most of the m-commerce customers use smartphones, m-commerce creates compelling experience that boosts profits and customer satisfaction (Venkatesh et al., 2003).

2.11 Conceptual framework

A conceptual framework was established on the grounds of the review of the literature. The conceptual framework is based on a positive influence to understand the three strategic factors which are technology modernisation, advancement of network chains and on-the-go consumer demand considered for this current study. A strong correlation between the three factors has a greater influence on the business success of African wax-print.

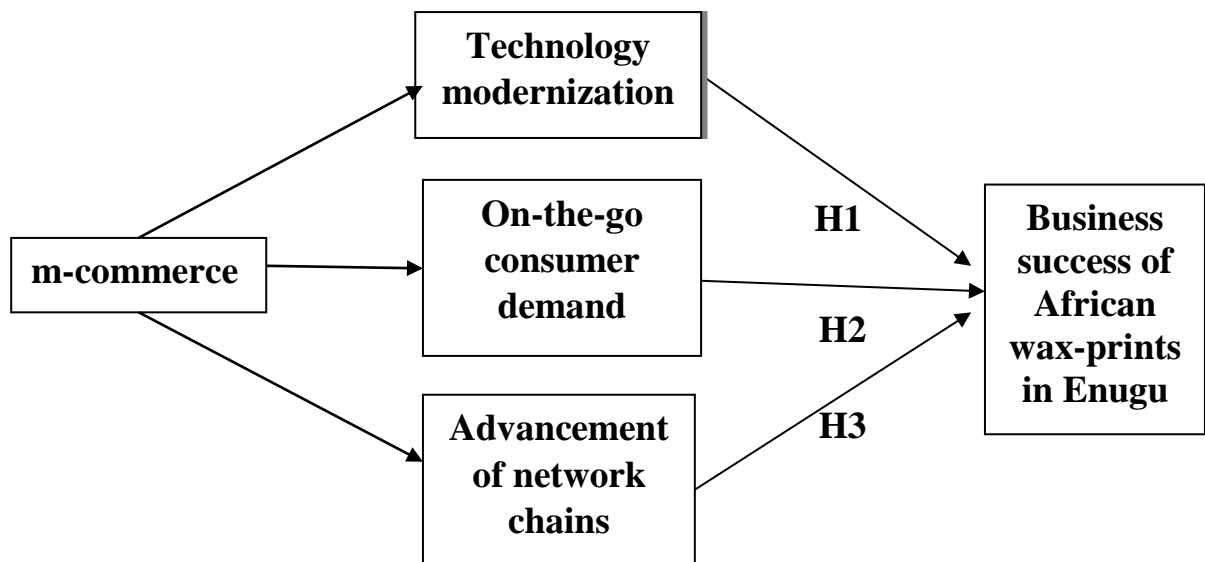


Figure 2. 7 : **Conceptual Framework for this study**

This study investigates the impact of m-commerce on the business success of African wax-prints. However, this study only considered technology modernisation, advancement of network chains and on-the-go consumer demand as the strategic factor in m-commerce. Technology modernisation, advancement of network chains and on-the-go consumer demand represents the independent variable, while business success of African wax-prints represents the dependent variable as shown above. The independent variables in the diagram above also guide the hypothesis of the study.

2.12 The Unknown and Need for research

Africans across the world express a common acceptance of African textile (Nartey, 2011) as a symbol of true Africanism (culture and heritage). In the developing countries such as India, Palestine, Malawi, Ghana, Côte d'Ivoire, Nigeria, Kenya and Tanzania, mobile applications have impacted the development of medium and small-scale enterprises and the solutions led to the improvement of the socio-economic challenges in the fields of agriculture, education, government and health (Kelly and Minges, 2012; Perekwa et al., 2016). The services of m-commerce comprises of, and not limited to m-games, m-inventory, m-wireless business and re-engineering, m-financial services, m-social and m-advertising (user and location specifics) (Antovski and Gusev, 2008). However, the current study propagated the impact of m-commerce on the business success of African wax-prints to consolidate the needs of connecting the needs of Enugu residents to retailers of African wax-prints. The next chapter focuses on the research methodology that was used in the study.

CHAPTER THREE

Methodology

3.1 Introduction

Research is described as a sequential process focused on observation and exploration by the researcher. The methodology is very significant to any study as it guides the study to understand the best technique that is appropriate for the study in order to answer the questions modelled to meet the requirements of its objectives. This chapter discussed the research designs and the techniques that were adopted for this study. This chapter outlines the aim, paradigm, study population, sample, and the data collection methods. The ethical consents appropriate for the study was obtained from the appropriate institutions.

3.2 Aim of study

This study explored the impact of the strategic factors of m-commerce such as technological modernization, consumer demands and network chains that positively influence the business success of African wax-print in Enugu, Nigeria. The aim of the study was to investigate the impact of mobile technology “m-commerce” on the business success of African wax-prints in Enugu State, Nigeria. In order to achieve the aim of this study, successful events of m-commerce on other relative industries was modelled to the business success African-wax print trade in Enugu, Nigeria.

3.3 Research design and methods

Research design is an important approach specifying the processes for examining the gathering of the required facts. Research design describes the “aims, uses, purposes, intentions and plans within the practical constraint of location, time, money” and the availability of the researcher” (Hakim, 2000). The three design methods are quantitative qualitative and mix methods approaches (Creswell, 2014). A quantitative study was adopted for this study as a deductive approach towards research (Rovai et al., 2013). Using this method, the study was focused on gathering numerical data and generalizing it across a particular region in Nigeria. This study also determined the relationship between the dependent variable (business success of African wax-prints) and the independent variable (which are technological modernisation, consumer demands and network

chains) was tested and analysed using statistical methods. The strategic factors led to the adopting of m-commerce on the business success of African wax-prints among the traders and retailers in Enugu, Nigeria. The respondents provided a clear indication of the outcome and the characteristics associated with it. Also, the design used survey techniques (electronic questionnaire) to gather data.

3.4 Research Paradigm

Research procedure has three important scopes namely; ontology, epistemology and methodology (Terre Blance et al., 1999). Research paradigm is a consistent scheme of philosophy that directs the nature of the probe in harmony to these three dimensions. Paradigms are a common conventional philosophy of researchers. Furthermore, a paradigm is a contextual design or a systematic structure of values, principles and assumptions that monitors the progression on the adoption of the research design and methods.

Researchers commonly adopt the approach of constructivist, positivisms, pragmatism and transformative (Mackenzie and Knipe, 2006). Constructivist focuses on evolving a model which depends on the respondents' assessment on a specific research being carried out while positivism focuses on testing a concept through experimentation and observation. On the other hand, pragmatism is a viewpoint whereby theories are only important if it leads to a precise achievement. Mixed method approach highlights the viewpoint of applying "what and how". Finally, transformative is a method that concentrates on the conviction that investigation needs is related to political agenda whose action could modify the situation being studied.

The paradigm took a positive approach. The techniques and experimental questions were carried out with the use of an electronic questionnaire and analyzed using a statistical approach to identify the relative and cross-related areas for improvement to satisfy the retailers' needs. The strategic factors which are technological modernisation, consumer demands and network chains was discussed in section 2.3 of Chapter Two was adopted to test the positive use of m-commerce on the business success of African wax-prints.

3.5 Study area

Enugu is the central state which is located in the South-East region of Nigeria. The state has seventeen local government areas and other potential growing satellite towns (Ngex, 2013). The capital city of this central state is Enugu town. Enugu is a home to major economic activities such as trading, agriculture, mining of natural resources, and tourism. Enugu is also the central hub of the Igbo nation in Nigeria. The culture and language are predominantly Igbo (Ibo) and they are popularly known for their long history of commercial trading. The location of Enugu encouraged the trade of African wax-prints particularly in the South-Eastern region of Nigeria.

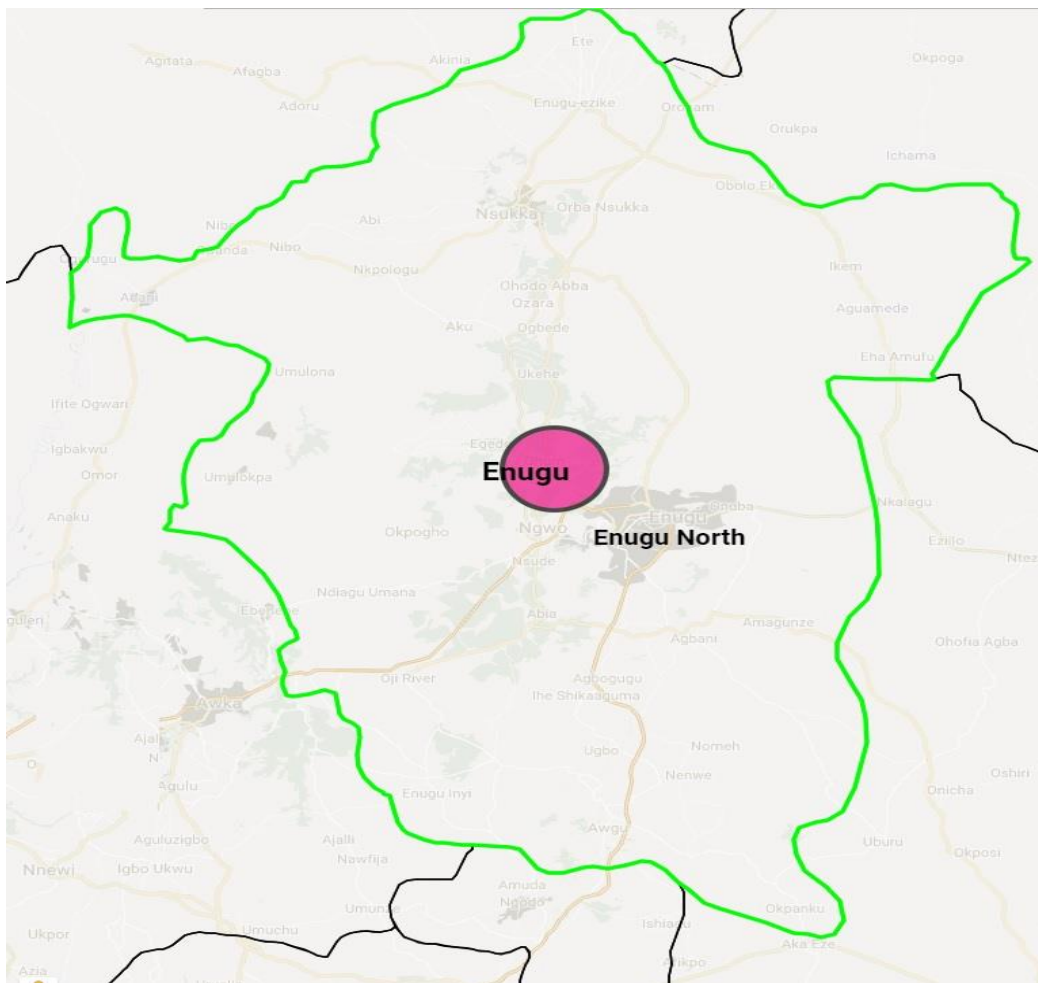


Figure 3.1: Map of Enugu-North adopted from City (2011)

3.6 Population and Sample of study

The population consists of whole elements with common characteristics (Sekaran and Bougie, 2010). The consumers, traders and retailers of African wax-print do not operate in isolation. Enugu city patronises and supports its cultural values by establishing a vast number of trades (open market) which includes different items and products (African wax-prints), as well as other business opportunities, thrive in the cosmopolitan city of Enugu State. The respondents targeted for this study were between the ages of 24 to 55 years old from the Enugu state. The study was carried out in Kenyatta Market and there are 556 consumers, traders and retailers of the African wax-print in the Enugu-North Local Government Area of Enugu State, Nigeria. This makes it an ideal place to evaluate the impact of mobile technology “m-commerce” on African wax-prints.

A study carried out by Delice (2010) explained the sample size calculation for a known population at a given time. Relatively, Martin (2016) and Team (2014) suggested the use of an electronic calculator for the ease of adoption of the sample size of a population. The estimated population of African wax-print consumers, traders/retailers in Enugu-North LGA is 556. The confidence interval was fixed at 95% and the error margin is at 5% Callahan and Koenemann (2000). Sample size is defined as the number of individuals selected as a representative of the population characteristics (Serakan and Bougie, 2003). The estimate resulted to be 384 samples for this study. This study assumed that about 50% or more of the inhabitants engage in a form of trade and other economic activities or both. The selection criteria will take into consideration the length of time that an individual has been involved in the business. Only those who have been in African wax-prints business for a period greater than two years will be selected for the interviewing.

3.7 Sampling method

Sampling is constructed on the philosophy that the fundamentals of a population would offer relevant facts on the populace. Sekaran and Bougie (2010) indicated that the outcomes can be established on the total population. The two main sampling methods are probability sampling and non-probability sampling. Probability sampling is adopted when “every member of the target population has a known, non-zero probability of being included in the sample. Probability sampling implies the use of random selection” (Draugalis and Plaza, 2009). Non-probability

sampling is adopted when some of the respondents are not given equal privilege to be involved in the study sample.

However, probability sampling was selected as the desired sampling method. This technique of random selection offers assurance in the generality on the outcomes of the population.

3.8 Construction of the instrument

Data collection for this study was carried out by use of electronic questionnaires (mobile google forms) which served as the data collection instruments, and this was done using handheld mobile devices. This part of data collection consists of people who are both involved in African wax-prints business and mobile technology and its application (m-commerce) in transacting business. The respondents' questionnaire was sectioned into 4 parts namely. Section A and Section B comprises of biological data and African wax-print sections respectively. Section A lean towards the respondents data personalisation which includes gender, age, education, occupation, and income for demographic. Section B consists of the respondents experiences in the trade of African wax-print. Both sections consists of six and five questions respectively. The respondents were asked to use the nominal scale to evaluate their responses in both section. While, Section C consists of the respondents major characteristics on the strategic factors and other relative personalisation of information and Section D consists of other relative questions for the study. In all the respondents were asked to answer thirty-two total questions in the questionnaire session. The questionnaire were measured using a combination of a nominal scales and a 5-point Likert-type scale.

3.9 Pilot study and Data collection

We applied through the office of the general market district association for the authority to carry out research together with the approval from University of KwaZulu-Natal. The studies of Vishnevsky and Beanlands (2004) and Polit and Beck (2001) also called the pilot study the probability study or small-scale version. This measure was carried out in Igbo-Eze North LGA to examine a research instrument in advance Respondents were approached in their random shops in Kenyatta market where they are located and they were referred to website where the questionnaire link was shared. Other respondents also received the questionnaire link from their traders'

association group chat on WhatsApp and e-mail messages. The questionnaire consisted of closed ended questions. This process lasted for 3 weeks, taking place from 21st August to 8th September 2017. At the first day, the formal introductions were done by the market executives. Furthermore, my topic was introduced and explained to the traders. We gave out guidelines on how they could access the questionnaire through the website or through the trader association group chat on WhatsApp and e-mail messages. After the first week, we asked the market executives to send a reminder to their member through the WhatsApp group chat and we personally went to their independent shops for a brief reminder. Each copy of the electronic questionnaire contains an introductory letter, purpose of research and consent letter attached to it. The questionnaire contains 40 questions and a total of 343 feedback was obtained out of 556 that were addressed. Among these, 7 results were omitted for missing data and the practical analysis included 336 responses. Hence, the response rate was 87.5% responses were recorded. Although 50% to 60% or greater response rate signifies minimal non-response bias (Draugalis and Plaza, 2009). A cause for a great concern would have been taken if the response rate was less than 50% (Van Teijlingen and Hundley, 2001). Measure were taken during the pilot study to comprehend faults within the suitability of the research instruments and research methodology. Studies suggest the critical importance to carry out a pilot study on the length of questions for the research instrument to ensure its fit as related to this study (Van Teijlingen and Hundley, 2001). Likert's scale and nominal scales was adopted in for this study.

3.10 Data analysis

Data analysis deals with the processing of raw data from the field into patterns by applying arithmetical procedures to construct ideologies (Cooper and Schindler, 2008). The data obtained from respondents were coded and analyzed using the Statistical Package for Social Sciences (SPSS) Version 24 (IBM Corporation, New York, NY, USA).

Descriptive statistics consist of the approach for describing the data. This comprises of average, percentage and graphs. In each category, a table of data summary detailing the frequency distribution. In this study, pie chart and bar-graphs were used to explain the frequency of occurrence of the socio-demographic characteristics and the strategic factors of m-commerce.

Inferential Statistics

This is the approach that concludes the generalization concerning a population which the empirical fact is the inferred from the sample.

Non-Parametric statistics

The term above is also called the “distribution-free statistical tests” (Mahadeo et al., 2011). These comprises of:

Chi-square: Is commonly applied in the non-parametric exploration. It is most appropriate in the interpretation of information in frequency formation. The independence of variables is tested with Pearson’s Chi-square which is compared to the degree of freedom to define the p-value.

Correlation: establishes the relationship concerning any two variable. Wilson (2008) revealed the measurement of bi-virate data and the strenght of association on the test of correlation coefficients between two variable is determined by Pearson product-moment.

In relation to this study, the different approaches of inferential analysis were used to define the outlines exists between technological innovations, consumer demands and network chains.

3.11 Reliability of the study

Cronbach alpha is the commonly used approach for reliability to access the superiority of the study. Cronbach alpha is calculated by relating the values for each question by matching them to the variance for different item values. This value indicated that attained sufficient reliability as Cronbach (1990) specified with a value of 0.70 and higher. Reliability focuses on the dependability of the scale of measurement. The reliability quotient of the survey was 0.795. A further test was administered to test the reliability of the survey material. The validity test observes the techniques the research analysed, instruments applied and the relationships between the variables which are accurate. The increase in the validity of the study can be ascertained with a pilot study that was carried out in Igbo-Eze North which in Enugu state. The pilot study used 20 % of the study sample. This was done before the actual study which was in Enugu town.

3.12 Bias

This study was carried out in Enugu State which is an Igbo dominated area in Nigeria. The outcome excludes some of the African wax-prints (trades transactions) that may be sold or featured in other

parts of the country which are dominated by other tribes in Nigeria. The study was to focus on consumers, retailers or traders who have been in the business of African wax-prints and the use of m-commerce for more than two years. This excludes other respondents who may have used m-commerce in other forms of trade other than African wax-prints.

This study was conducted among consumer and retailers based in Enugu, Nigeria, and hence, the results from this study may not be generalizable to other parts of the country as a whole. Also, this study only focused on the strategic factors of m-commerce and the business success of African wax-print.

3.13 Ethical consideration

The study of Simon and Usher (2000) described ethical issues as an essential element of any information distribution between two or more people. The authors further explained the ethical issues of correctness and appropriateness as it involves other persons. This research was conducted in accordance of the ethical guideline of the University's policy. The gate keeper's letter from Enugu Chambers of Commerce, a copy of the survey and the application for ethical clearance was submitted to the Humanities and Social Science Research Committee of the University of KwaZulu-Natal. On the 17th of August 2017, a formal approval from the University was issued. The survey lasted for between the months of August to mid-September 2017. Formal permission was sought from the local market control council by presenting the letter from Enugu Chamber of commerce to conduct the study. The respondents were free to participate or not participate in the study using their wireless mobile devices. Anonymity of the participating individuals was guaranteed while misuse of data collected from the organizations was avoided. The study was open to all as long as they have been involved in African wax-prints use or trade for a period of more than two years. All data collected in the course of this research work will be deposited with the Graduate School of Business and Leadership at the University of KwaZulu-Natal for safekeeping. Finally, all secondary sources of data collected for this study are adequately cited and referenced in avoidance of plagiarism.

3.14 Formulation of Hypothesis

Hypothesis is a model a scholar makes about some features of the population (McDaniel and Gates, 2010). Therefore, Cant (2003) explained the unconventional means of originating assumptions about the population as hypothesis testing. This method commences with the belief of the researcher on certain assumptions on the population. The researcher tests the null hypothesis which is detailed as H₀ and the alternative hypothesis which is detailed as H₁ and indicated in the theory (McDaniel and Gates, 2010).

A chi-square test was carried out using the Statistical Package for Social Sciences (SPSS) Version 24 (IBM Corporation, New York, NY, USA). In general, the Null hypothesis would be rejected if the p-value is less than 0.05. This concludes the result to be significant in the proposition of the statement. A cross-correlation was done to evaluate the strenght and importance of the strategic factors (independent variable) being measured.

3.15 Summary

The data collection was carried out in one of the commercial hubs in the South-Eastern region of Nigeria. The tribe in this region are predominantly the Igbo's which created a bias that excluded the other regions in Nigeria. Different variables were introduced during the experimental and the actual collection of data. Google forms were adopted as the electronic data collection instrument and Statistical Package for Social Sciences was used to harvest, analyze and test the results of the interview. The process of the data collection was done in 28 days.

CHAPTER FOUR

Presentation of Results

4.1 Introduction

The literature review chapter of this study considered the role of m-commerce and the origin of the wax-prints. Although the strategic factors impacting the business success of African wax-prints has been investigated in the previous chapters, this chapter provides an analysis and presentation of responses from the participants by using the data gathered from the questionnaire to address the objectives of this study. The data was collected from participants who were involved with the trade and use of African wax-prints. It was coded and analysed with the SPSS Version 24. The chapter presents descriptive statistics in the form of graphs. Inferential techniques include the use of correlations and factor analysis which are interpreted using the p-values. Several themes emerged from the study. These which include the socio demographical results, descriptive statistics, inferential statistics and the reliability test of the analysis.

4.2 The Sample

In total, the e-link to the questionnaires was made available online and through the m-social app, 336 of the stipulated sample of 384 were answered. This gave an 87.5% response rate.

4.3 Descriptive Statistics

4.3.1 Socio-demographical results

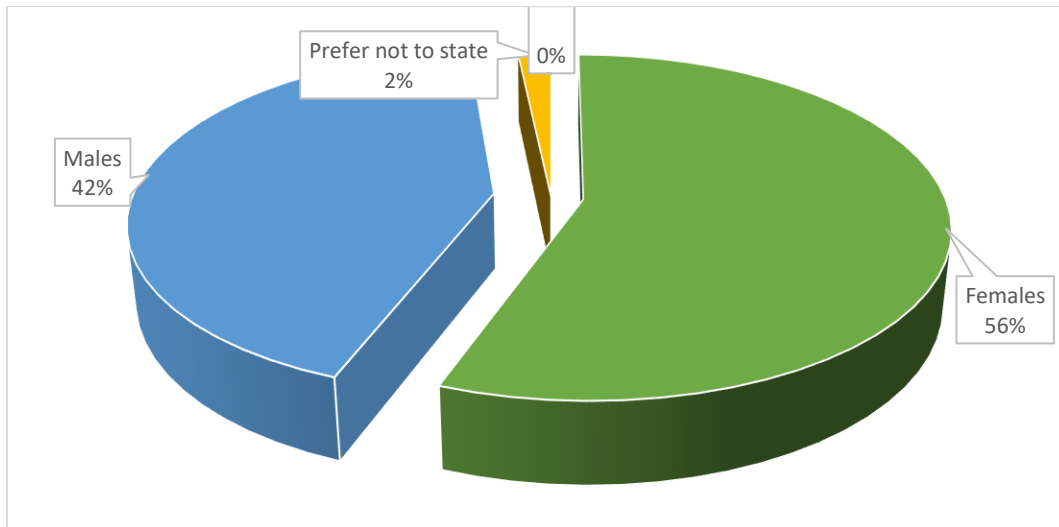


Figure 4.1: Gender of respondents

The results show that 55.7% ($n=187$) of the respondents were females, 42.6% ($n=143$) were males while 1.7% ($n=6$) prefer not to state their gender.

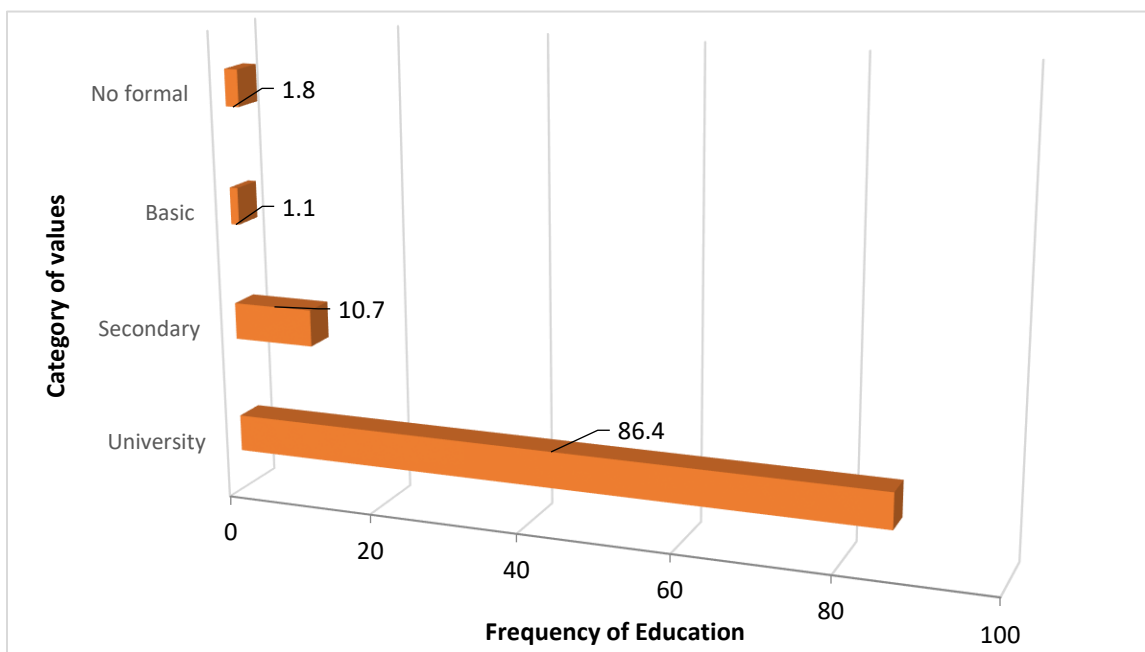


Figure 4.2: Education of the respondents

Furthermore, 86.4% ($n=291$) of the respondents were university graduates, 10.7% ($n=36$) had secondary education, 1.1% ($n=3$) had basic education and 1.8% ($n=6$) had no formal education.

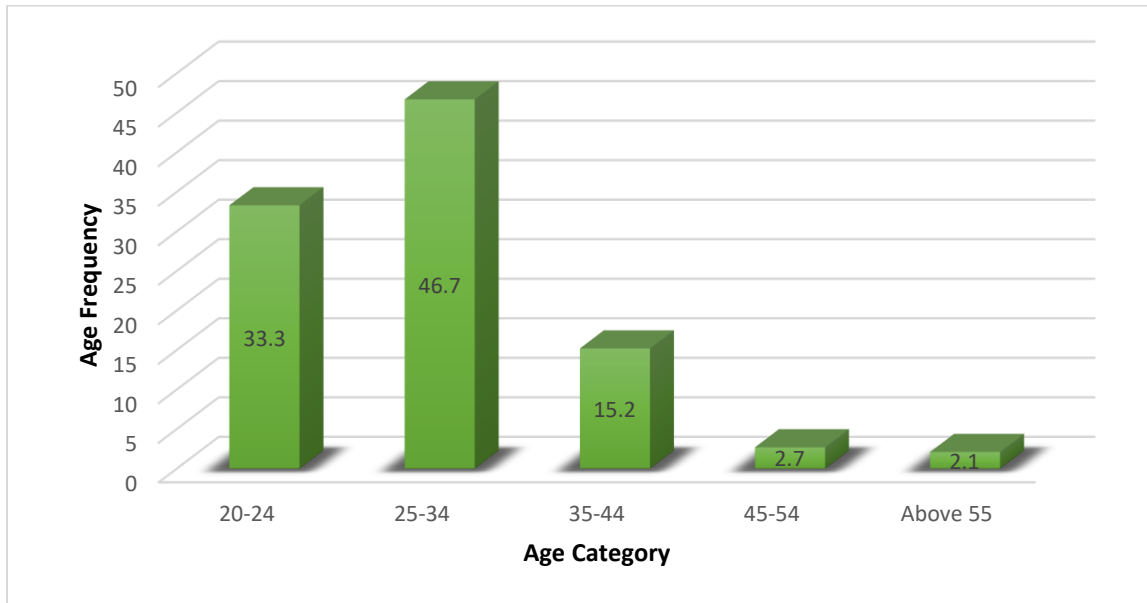


Figure 4.3: Age of the respondents

The study also showed that 33.3% ($n=112$) of the respondents aged were between 20 – 24 years, 46.7% ($n=157$) between 25 - 34 years, 15.2% ($n=51$) between 35 – 44 years, 2.7% ($n=9$) between 45 – 54 years and 2.1% ($n=7$) were above 55 years.

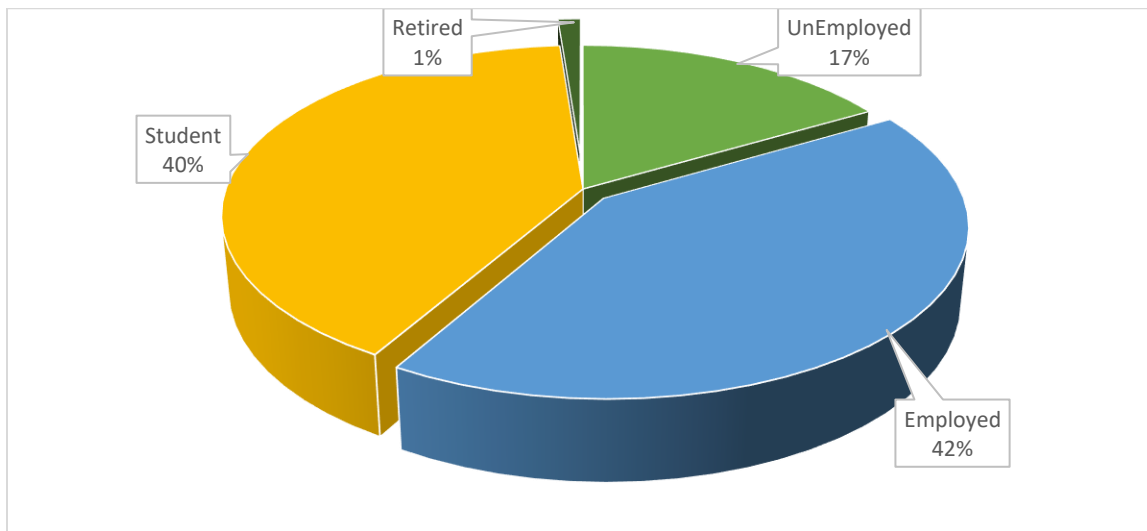


Figure 4.4: Professional Status of the respondents

The result shows that 16.6% ($n=56$) of the respondents are unemployed, 41.8% ($n=141$) are employed, 40.4% ($n=135$) are students and 1.2% ($n=4$) are retired.

4.4 Addressing each research objective

4.4.1 To establish how technological modernisation can directly connect consumers to local retailers on the business success of African wax-prints.

The results of this objective establishes how technological modernisation can directly connect consumers to local retailers on the business success of African wax-prints. This inferred that the factors presented are critical factors in determining this objective.

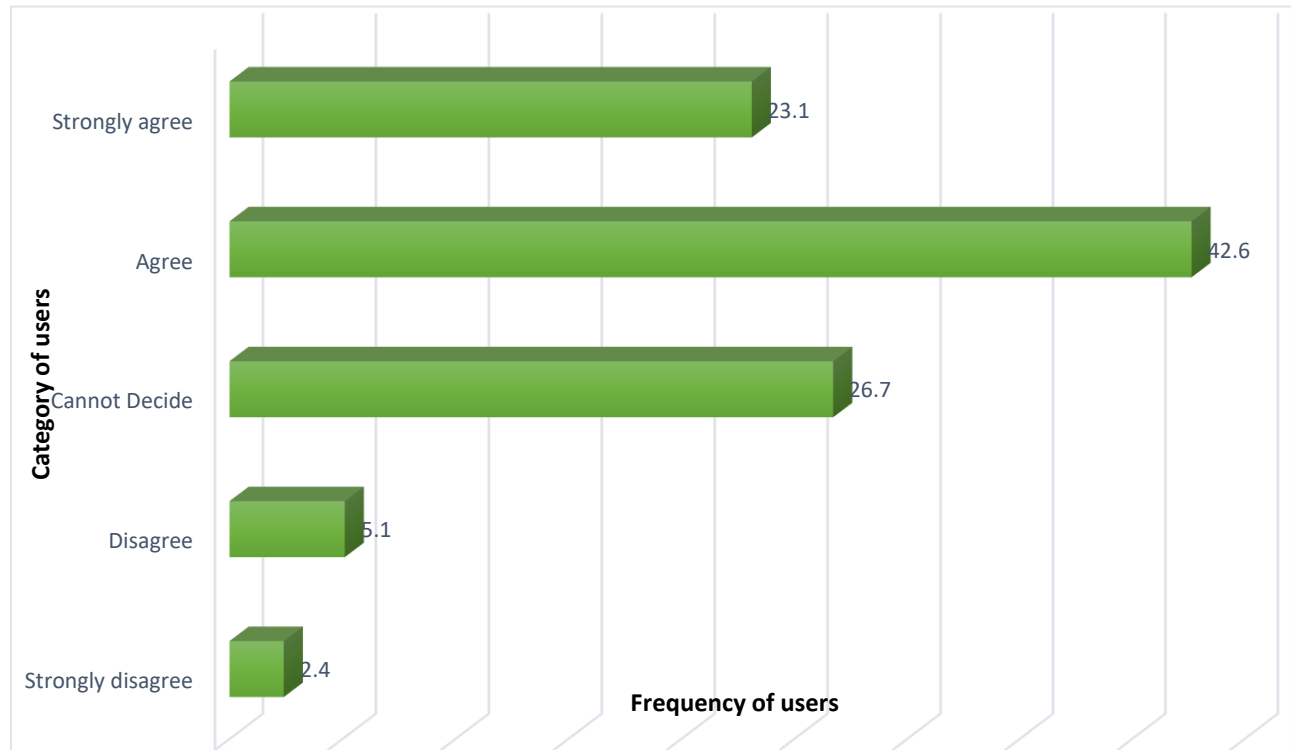


Figure 4.5: I am curious about how new mobile phone technologies work?

The result shows that 2.4 % ($n=8$) of the respondents strongly disagree on how new mobile technology works, 5.1% ($n=17$) disagree, 26.7% ($n=89$) cannot agree, 42.6% ($n=142$) agree and 23.1% ($n=77$) strongly agree.

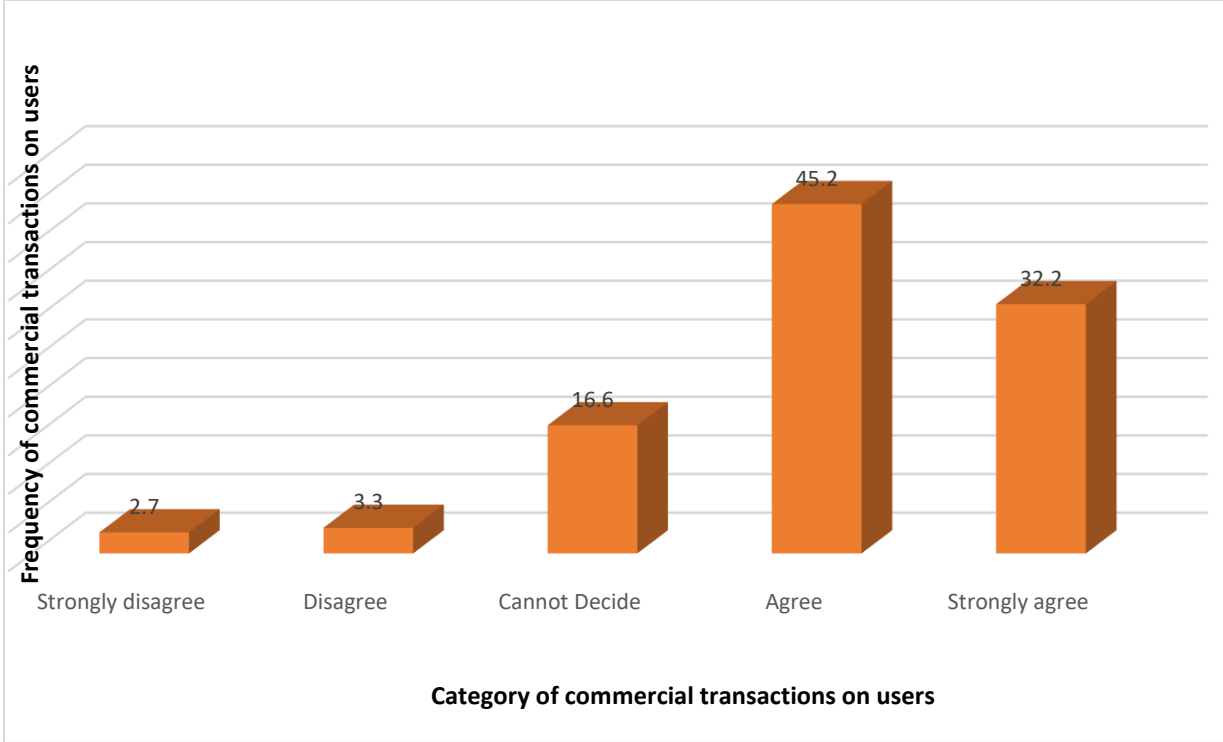


Figure 4.6: I am knowledgeable about m-Commerce (internet commercial transactions on a mobile phone?)

On the other hand, the result on the on how knowledgeable about m-commerce works 2.7% ($n=9$) of the respondents strongly disagree, 3.3% ($n=11$) disagree, 16.6% ($n=55$) cannot agree, 45.2% ($n=150$) agree and 32.2% ($n=107$) strongly agree.

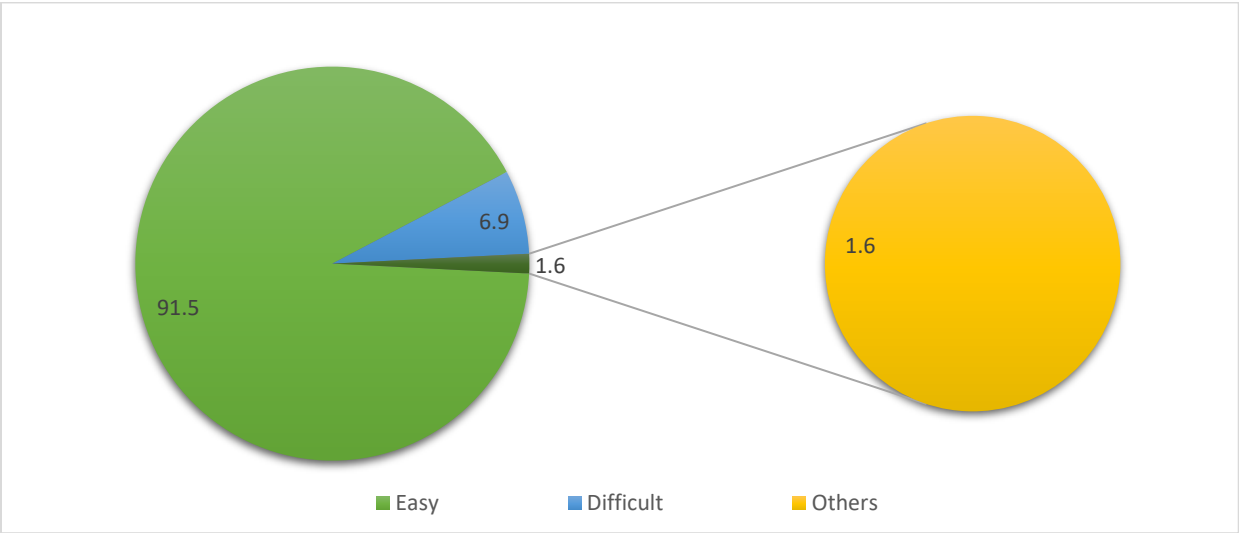


Figure 4.7: The use of mobile transactions and other applications?

The image on figure 4.3 inferred the use mobile transaction and other applications. The results show that 91.5% ($n=290$) of the respondents found the use of mobile application and mobile transactions easy. On the other hand, 6.9% ($n=22$) found the use of mobile applications difficult while 1.6% ($n=5$) were undecided.

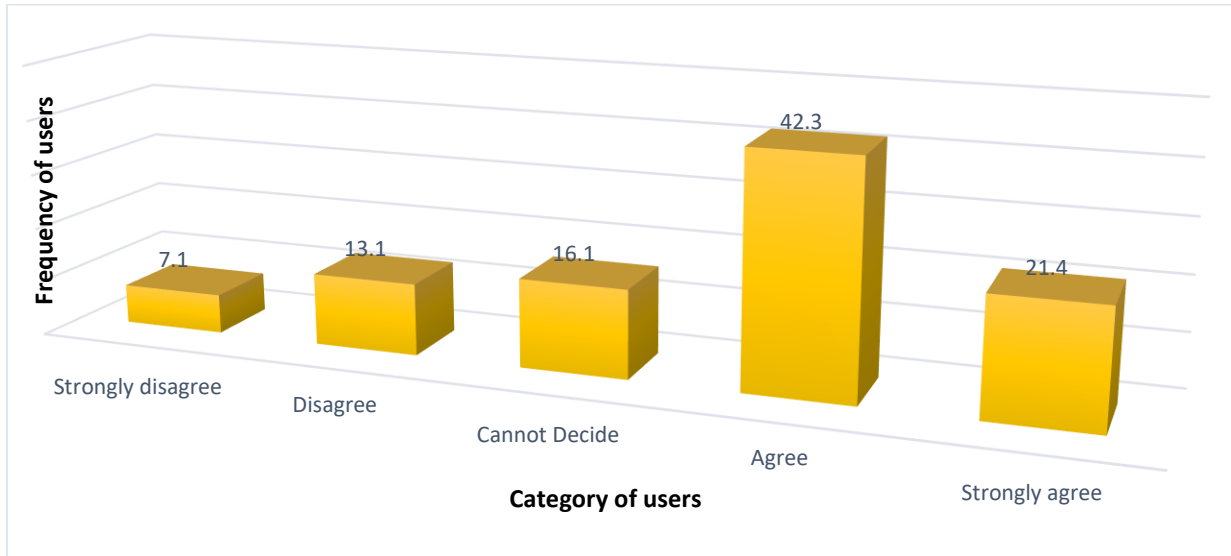


Figure 4.8: **I have a favorable attitude towards mobile technology oriented products?**

The results shows that 7.1 % ($n=24$) of the respondents strongly disagree on the favorable attitude towards mobile technology, 13.1% ($n=44$) disagree, 16.1% ($n=54$) cannot agree, 42.3% ($n=142$) agree and 21.4% ($n=72$) strongly agree.

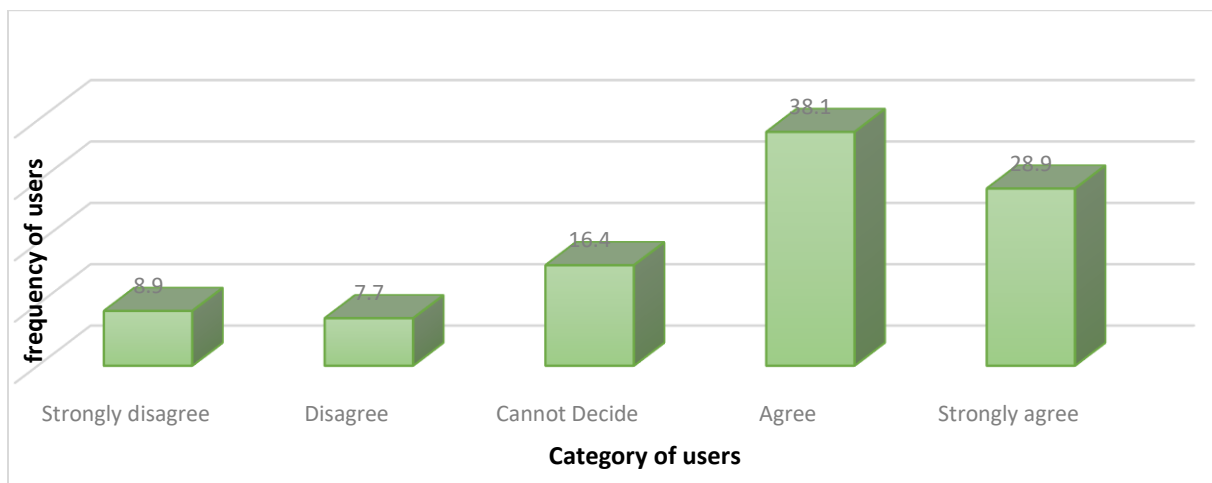


Figure 4.9: **I am generally quick to use newer models of mobile phone devices?**

The result shows that 8.9 % ($n=30$) of the respondents strongly disagree to generally use newer model of mobile device, 7.7% ($n=26$) disagree, 16.4% ($n=55$) cannot agree, 38.1% ($n=128$) agree and 28.9% ($n=97$) strongly agree.

4.4.2 To determine how consumer demand can create a flexible market on the business success of African wax-prints.

The results shown in Figure 4.10 determine how consumer demand can drive a flexible market of African wax-prints. The factors presented here are the core determinants of customer demands in establishing a flexible market in this objective.

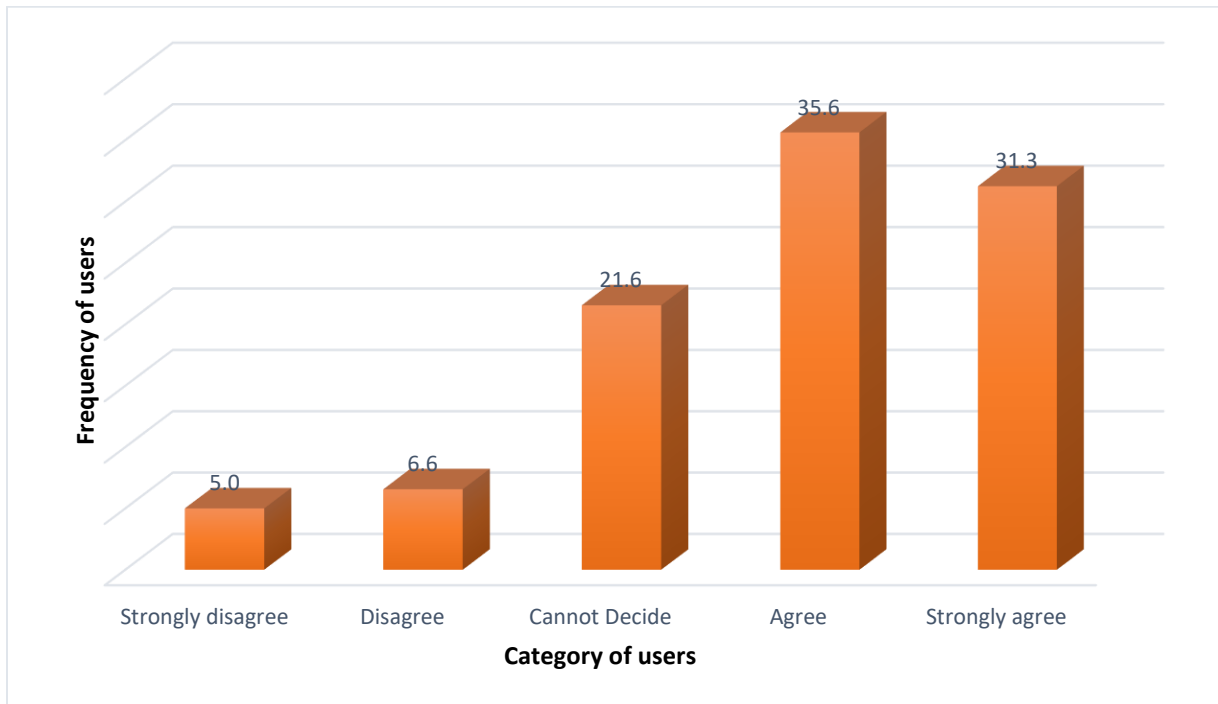


Figure 4.10: Mobile phones have the needed features to make online purchases?

The result shows that 5.0 % ($n=16$) of the respondents strongly disagree to the features needed for online purchases, 6.6% ($n=21$) disagree, 21.6% ($n=69$) cannot agree, 35.6% ($n=114$) agree and 31.3% ($n=100$) strongly agree.

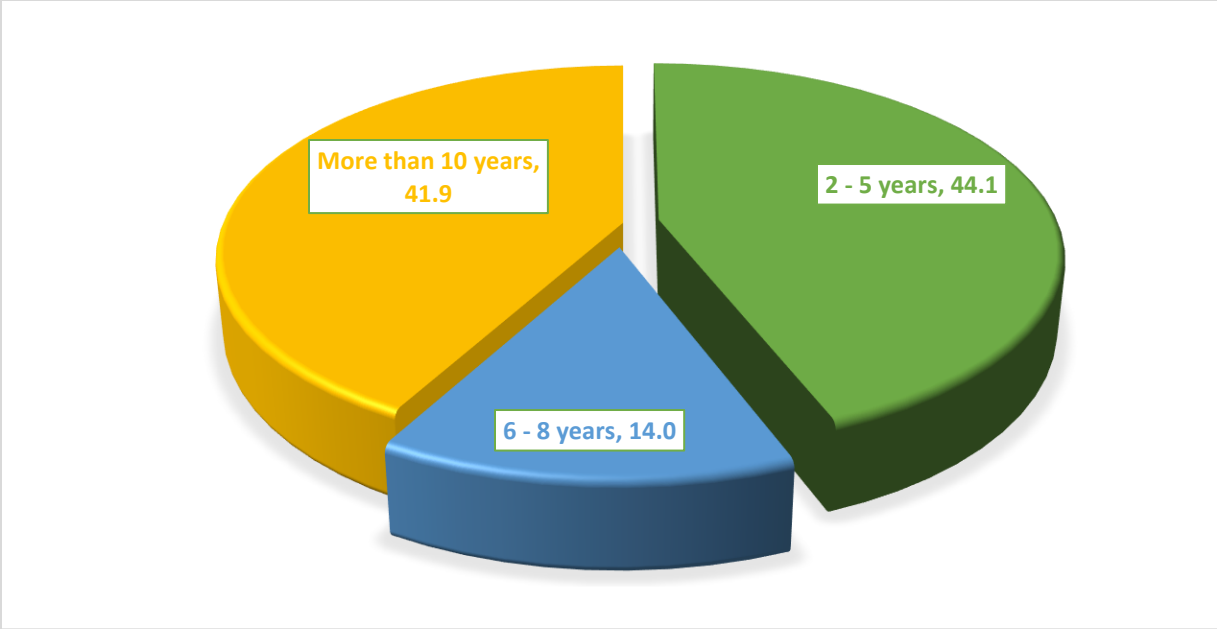


Figure 4.11: **How long have you been trading \ using African wax-prints?**

The result shows that 44% of the respondents have been trading the African wax-print between 2-5 years, also 14% have also been doing the same for 6-8 years and 41.9% for over 10 years.

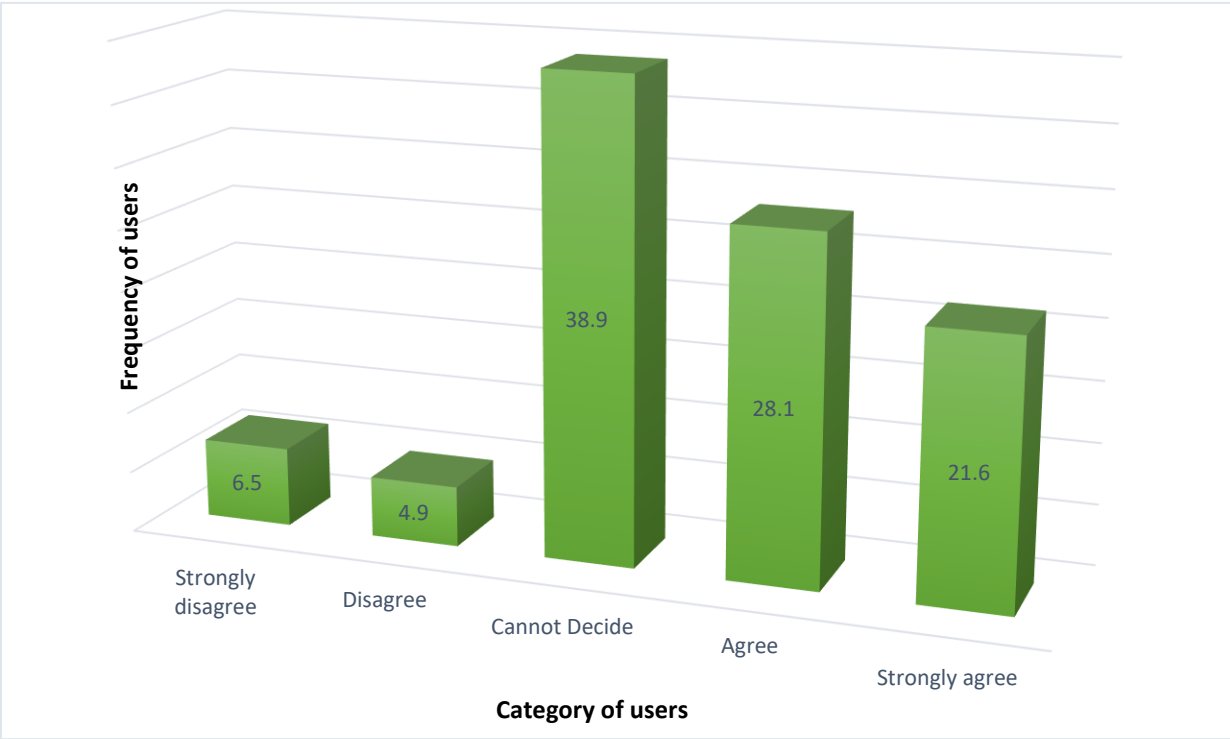


Figure 4 12: **Mobile phone technology is sufficiently fast enough to do online transactions?**

The result shows that 6.5% (n=21) of the respondents strongly disagree to the sufficiency of online transaction, 4.9% (n=16) disagree, 38.9% (n=126) cannot agree, 28.1% (n=91) agree and 21.6% (n=70) strongly agree.

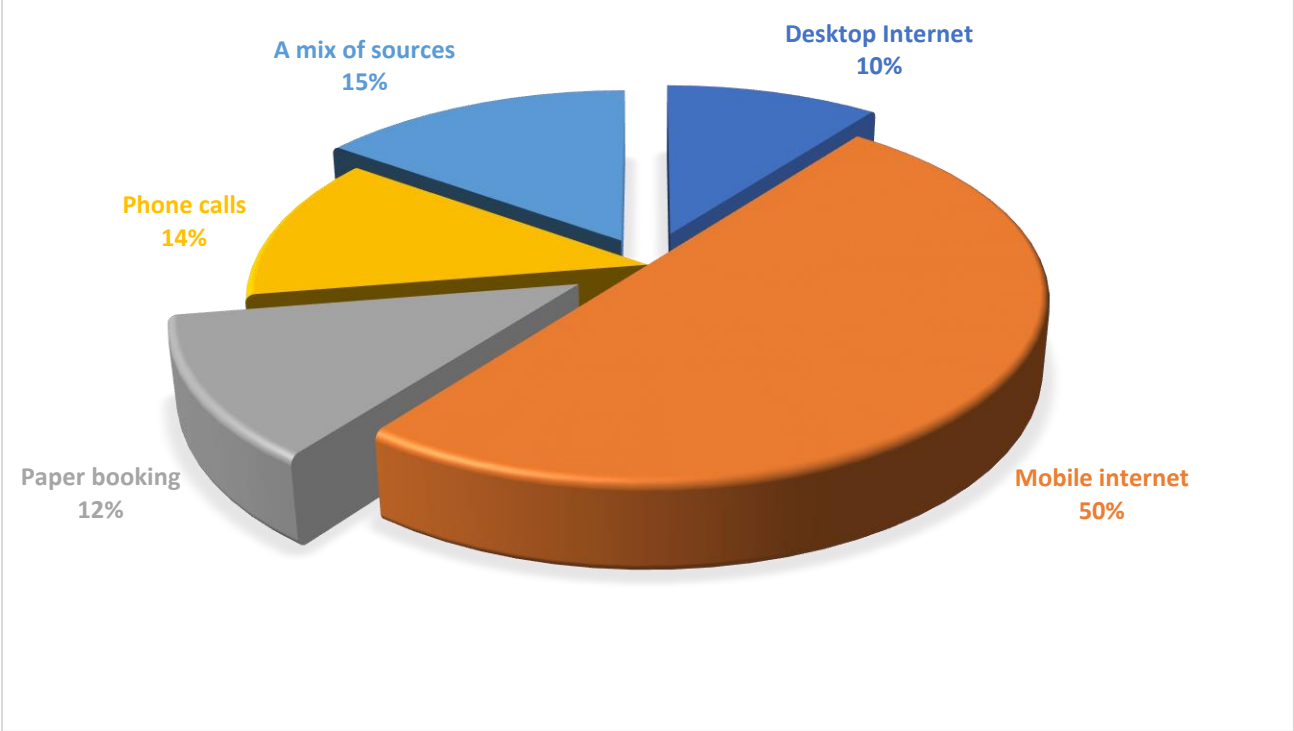


Figure 4.13: **How do you source African wax-prints?**

The diagram above shows that 50% of the respondents does a pre-booking using mobile internet, 12% engages in paper booking, 13% orders using phone calls, 10% uses desktop internet, 15% uses a mix of sources.

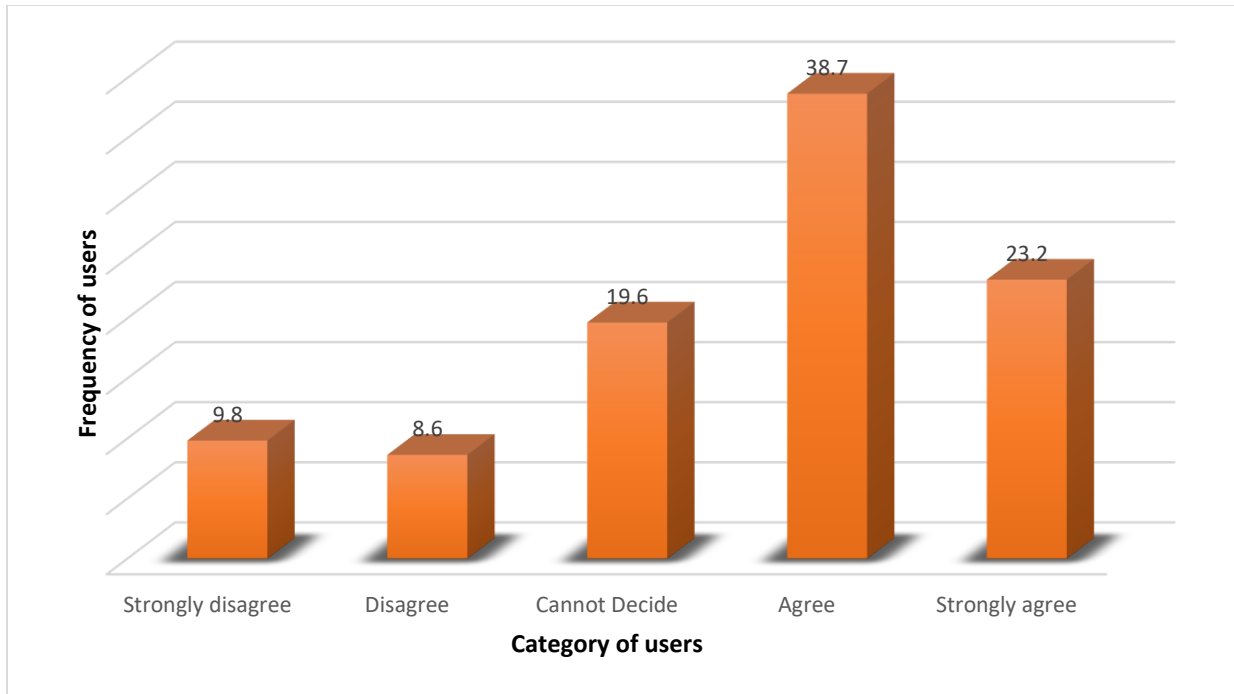


Figure 4.14: It is easy to search for products and services online using mobile phone technology?

The results also showed that 9.8 % (n=33) of the respondents strongly disagree to the ease to pay for products and services online, 8.6% (n=29) disagree, 19.6% (n=66) cannot agree, 38.7% (n=130) agree and 23.2% (n=78) strongly agree.

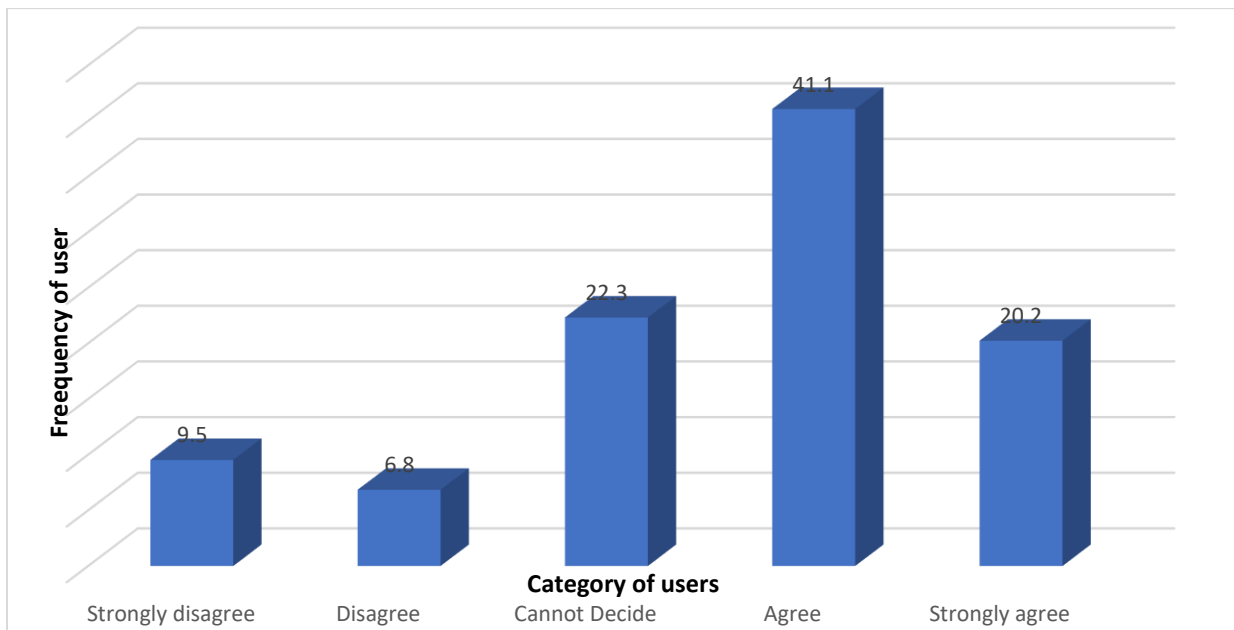


Figure 4.15: It is easy to pay for items purchased online using mobile phone technology?

The result shows that 9.5% (n=32) of the respondents strongly disagree to the ease of online purchase using mobile phones, 6.8% (n=23) disagree, 22.3% (n=75) cannot agree, 41.1% (n=138) agree and 20.2% (n=68) strongly agree.

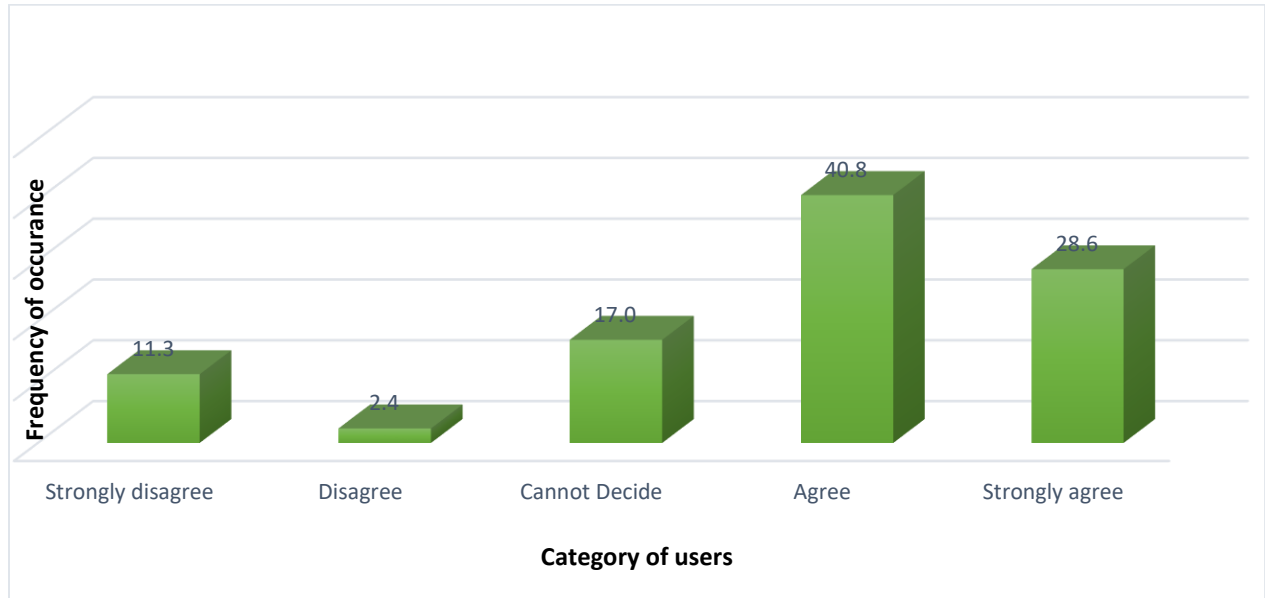


Figure 4.16: It is easy to navigate websites on the mobile phone?

The results shows that 11.3% (n=38) of the respondents strongly disagree to the easy to navigate websites on mobile phone, 2.4% (n=8) disagree, 17% (n=57) cannot agree, 40.8% (n=137) agree and 28.6% (n=97) strongly agree.

4.4.3 To identify the role of the network chains in locating the retailers on the business success of African wax-prints.

The results of this objective explores the role of the network chains in locating the retailers of African wax-prints. This critical factors presented here are in determination of this objective. The figures below shows the graphical representation of the network chains of retailers in Enugu.

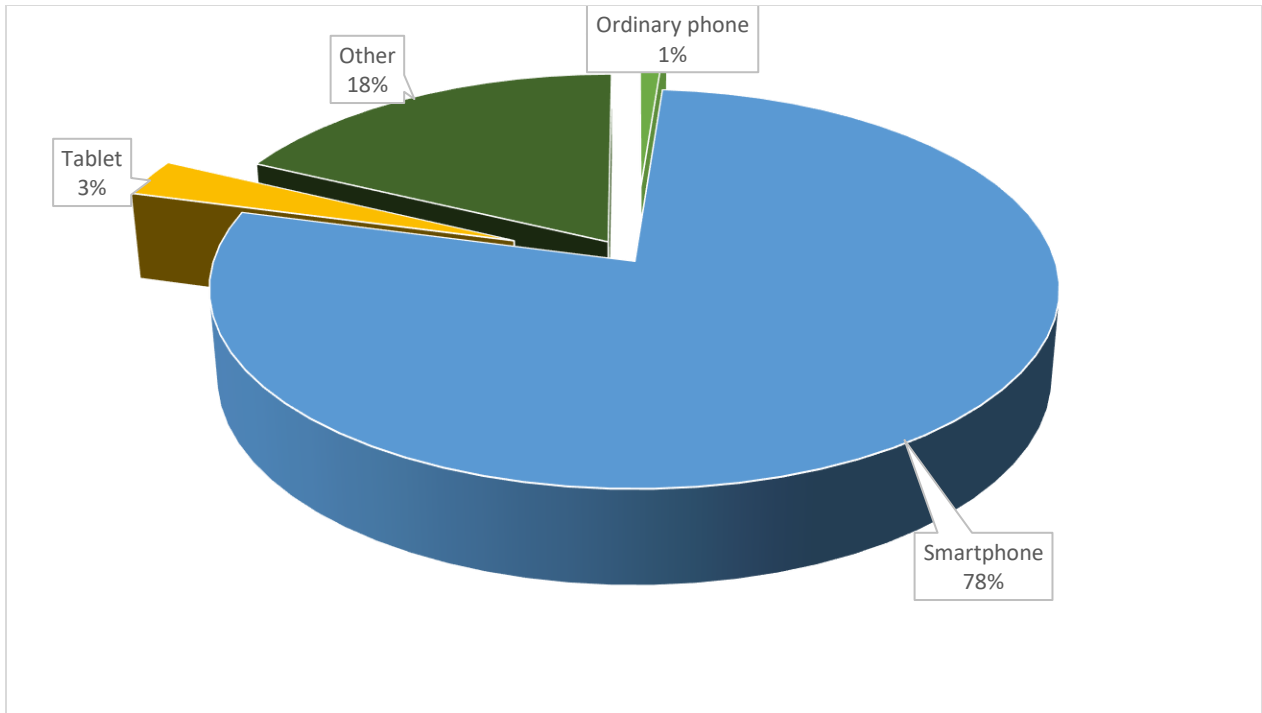


Figure 4.17: Type of mobile device?

The diagram above shows that 78% of the respondents uses a smartphone, 18% uses other devices (Desktop), 3% uses tablets and the remaining 1% uses ordinary phone.

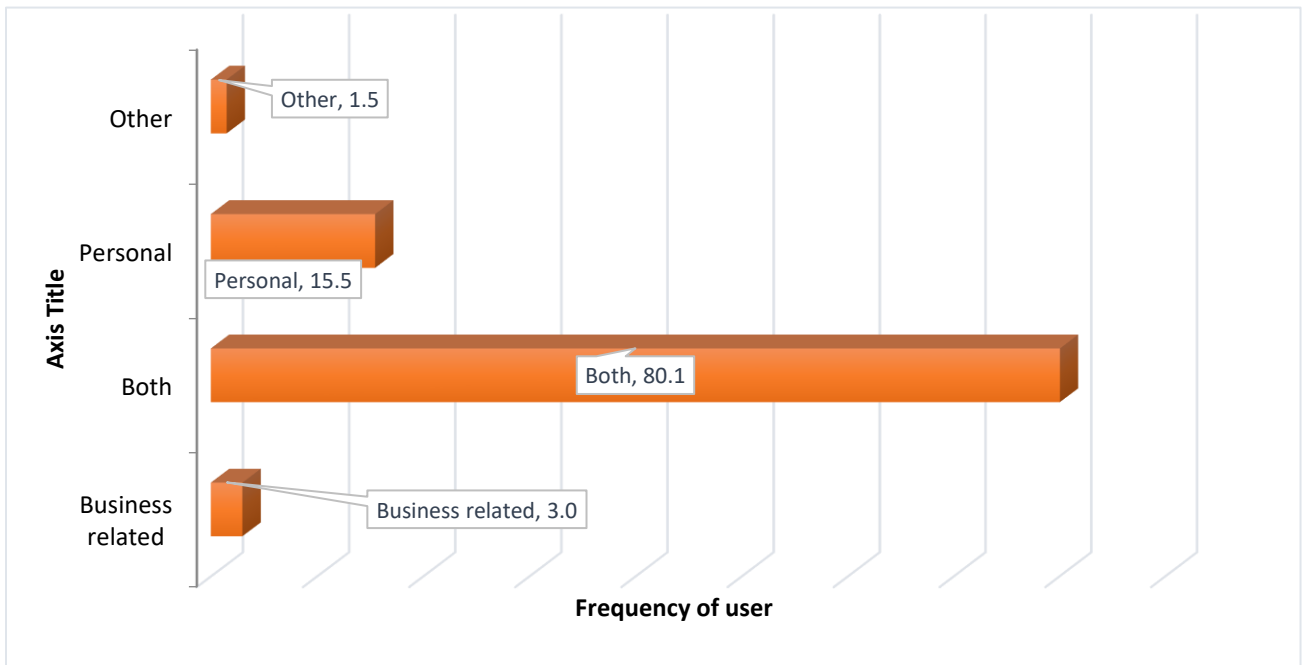


Figure 4.18: What do you use your internet for?

The shows that 80.% of the respondents uses mobile internet for both business and personal needs, 15% engages the internet just for personal usage, 3% using internet on business related and 1.5% other purposes.

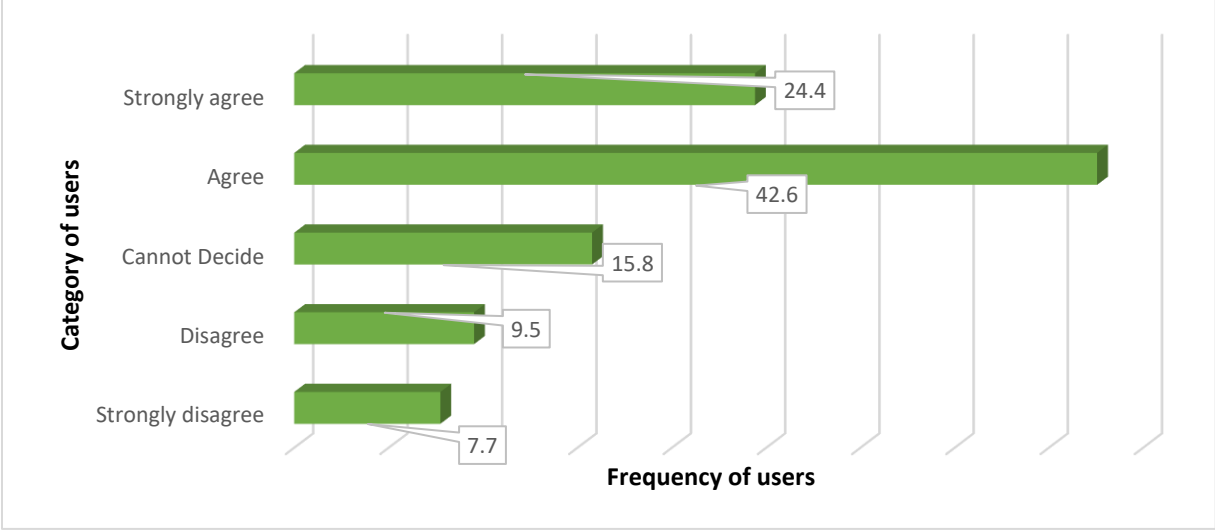


Figure 4.19: Using mobile money improves my work performance, my productivity and effectiveness in my work?

The results shows that 7.7% (n=26) of the respondents strongly disagree to the improvement of work performances, productivity and effectiveness using mobile phone, 9.5% (n=32) disagree, 15.8% (n=53) cannot agree, 42.6% (n=143) agree and 24.4% (n=82) strongly agree.

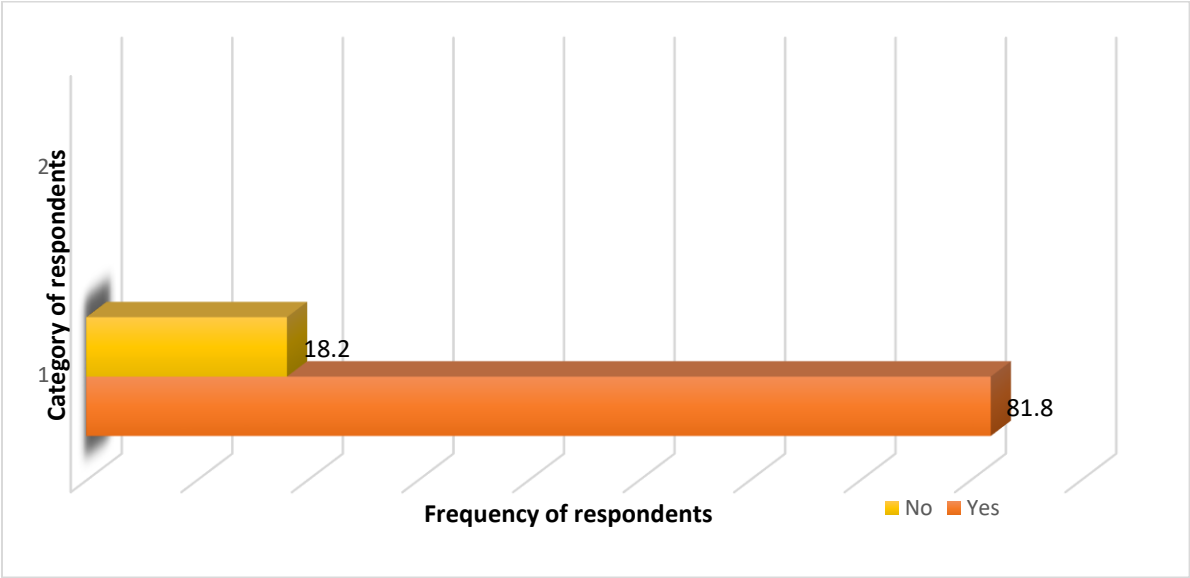


Figure 4.20: Do you engage in mobile money transactions?

The diagram above shows that 50% of the respondents does a pre-booking using mobile internet, 12% engages in paper booking, 13% orders using phone calls, 10% uses desktop internet, 15% uses a mix of sources.

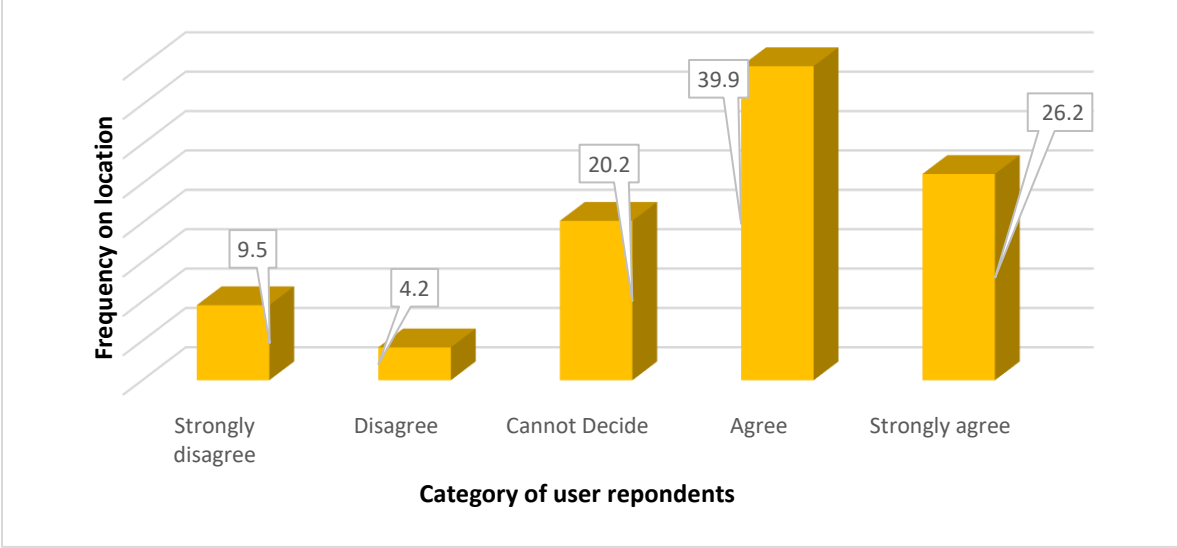


Figure 4.21 :It is useful as it provides information based on location?

The results shows that 9.5% (n=32) of the respondents strongly disagree to the usefulness as it provides informatioin based on location, 4.2% (n=14) disagree, 20.2% (n=68) cannot agree, 39.9% (n=134) agree and 26.2% (n=88) strongly agree.

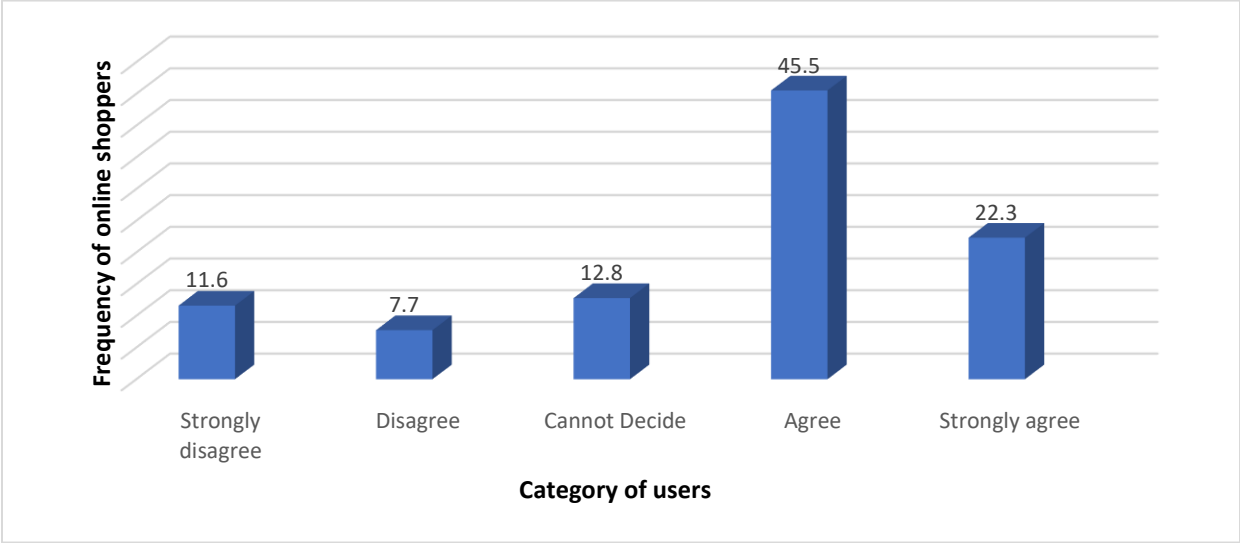


Figure 4.22: Mobile phone technology provides flexibility in shopping for products and services online?

The results shows that 11.6% (n=39) of the respondents strongly disagree to the flexibility in shopping for products and services online using mobile phone, 7.7% (n=26) disagree, 12.8% (n=43) cannot agree, 45.5% (n=153) agree and 22.3% (n=75) strongly agree.

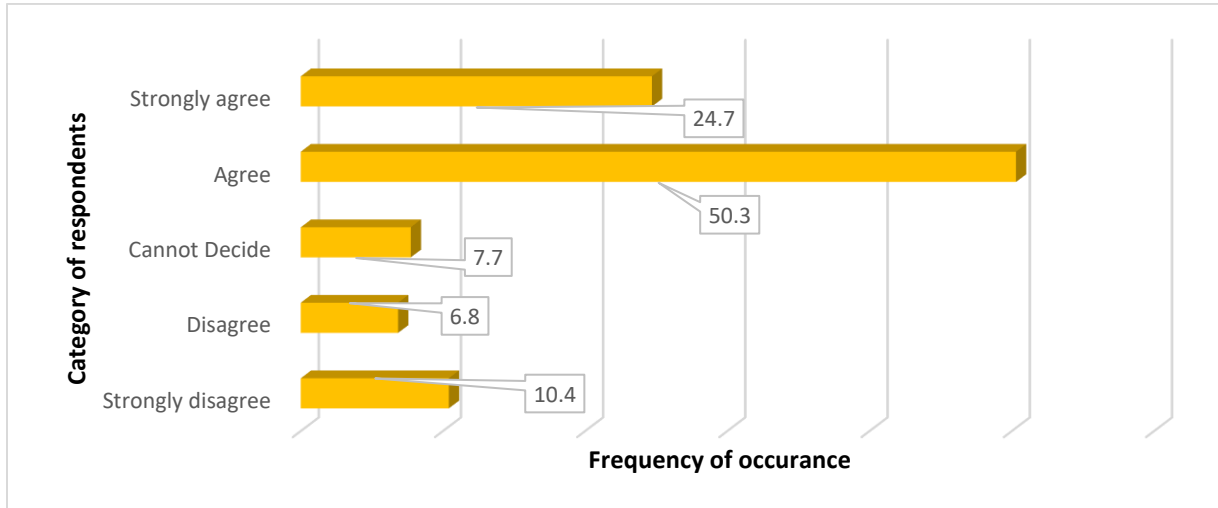


Figure 4.23: **Mobile phone technology can be useful to buy a range of products and services on the Internet?**

The results shows that 10.4% (n=35) of the respondents strongly disagree to the usefulness to buy a range of products and services on the internet using mobile phone, 6.8% (n=23) disagree, 7.7% (n=26) cannot agree, 50.3% (n=169) agree and 24.7% (n=83) strongly agree.

4.5 Inferential statistics

4.5.1 Cronbach Alpha

To further authenticate the quality of the survey and its comparable factors, the Cronbach's Alpha test was administered to the questions using SPSS software. The coefficient was designed from 14 questions relating to the core factors that impact the African wax-prints.

Table 4. 1: **Reliability statistics**

Section	Number of Items	Cronbach's Alpha
Technological Modernisation	4 of 4	.699
Consumer Demand	6 of 6	.784
Network Chains	4 of 4	.901
Overall	14 of 14	≈ .795

The table above shows reliability quotient of the survey was 0.795. This value indicated that the result attained sufficient reliability as Cronbach (1990) specified with a value of 0.70 and higher for confident reliability. However, the value 0.795 supersedes the expected minimal value of the reliability test and the questionnaire has an acceptable level of inter item consistency.

4.6 Correlation Table

Table 4. 2: Correlation Table

		Technological Innovations H1	Consumer Demand H2	Network Chains H3		
Technological Innovations H1	Pearson Correlation					
	Sig. (2-tailed)					
	N	333				
	Pearson Correlation	.568**				
	Sig. (2-tailed)	.000				
Consumer Demand H2	N	331	332			
	Pearson Correlation	.251**	.269**			
	Sig. (2-tailed)	.000	.000			
	N	333	332	336		
	Pearson Correlation	.252**	.242**	.853**		
Network Chains H3	Sig. (2-tailed)	.000	.000	.000		
	N	333	332	336	336	
	Pearson Correlation	.226**	.252**	.979**	.840**	
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	333	332	336	336	336
Network Chains H3	Pearson Correlation	.232**	.230**	.812**	.959**	.805**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	333	332	336	336	336

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

The above table shows that there is a correlation between all the factors which positively influence the business success of African wax-print. See appendix A for further details

4.7 Testing of hypothesis

The traditional approach to reporting a result requires a statement of statistical significance. A p-value is generated from a test statistic. A significant result is indicated with "p < 0.05". These values are highlighted with a*.

Chi-square test was performed to determine whether there was a statistically significant relationship between the variables (age, vs. years of trading). The null hypothesis states that there is no association between the variables. The alternate hypothesis indicates that there is an association.

Table 4. 3: Chi-square test

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	94.426 ^a	8	.000

The result on age and the question “how long you been trading \ using African wax-prints” shows the (p-value = 0.001). This means that age (p<0.001) significantly influenced years of trading African wax-print on how respondents viewed their clarity regarding their goals and objectives for their wax-print business.

4.8 Summary

The interpretation of the results revealed the significant findings to the hypothesis presented. The key findings revealed that the respondents are in agreement that the strategic force of m-commerce (technological innovations, customer demands and network chains) positively influences the business success of African wax-prints. The result of the Chi-square tests revealed a significant influence between age, gender, education and trading of the respondents. The next chapter discusses the results which are presented in this chapter.

CHAPTER FIVE

Discussion of Results

5.1 Introduction

The current study explored the impact, possibilities, and benefits of using m-commerce on the business success of African wax-prints in Enugu, Nigeria. The study reports the findings based on 384 respondents. A total of 336 participants suggested that ease of use the transactions and reduction loss of money among the traders were among the main factors that linked customers to retailers through m-commerce. These findings are in consistence with the finding of Liébana-Cabanillas et al. (2014) who observed that m-commerce has a positive effect on the business success of African wax-prints in Enugu, Nigeria. This chapter discusses the presentation of findings in details.

5.2 Summary of main findings

The socio-demographic characteristics of the respondent's shows that the results have a larger percentage of females who participated in the survey compared to that of the male counterparts. The statistics presented a positive view on the cooperation and the willingness of the respondents to promote the strategic factors of m-commerce to the business success of African wax-print. The results inferred from this study promotes the ease of transacting business in a modern and more flexible ways to accommodate consumers of different categories and class.

5.3 Details of the findings

This study was carried out in Enugu, the South-Eastern part of Nigeria. It explored the business impact, possibilities, and benefits of using m-commerce on the business success of African wax-prints. Evidence showed that m-commerce was a fast and evolving industry that is currently revolutionizing the traditional business processes and impacting the value stream of an end to end communication amongst users which reduces cost and increases convenience to the consumers and the retailers. However, m-commerce has created a positive impact on how communication and information could exchange interchangeably, 24/7 business support and a cradle of competitive advantages for individuals, organisations and industrial sectors in Enugu, Nigeria. Furthermore,

m-commerce leverages on the interpersonal communication explanation made by Hofstede (1985) on the degree of individualism as a key feature in the value system. An understanding of the endless role played by the strategic factors of m-commerce would improve the value streams by integrating a firm social relationship and acceptance from the retailers to the consumers of African wax-prints within Enugu environment and across Nigeria.

5.4 The Discussions

5.4.1 On the Technological Innovation

The study by Lu (2014) supports the continual technological innovations, upgrades of systems, devices and existing application. The results from that study indicated that update of technologies and innovation infers that the retailers accept innovation which drives the strategic factors of m-commerce technologies. The results from this study show that the majority of the respondents 78.0% ($n=262$) had access to mobile smartphone. Hence, this approach supports the readiness to upgrade mobile technological devices (Aldás-Manzano, Ruiz-Mafé, Sanz-Blas (2009).

The exploration of newer opportunities of products and services is the inclination of an individual to personal upgrade (Aldás-Manzano et al., 2009). This study indicates the majority of the respondents have the potential to seek uniqueness, unrestrained inquisition (Bhatti, 2007) with an individual innovativeness to assume IT modernism (Agarwal and Prasad, 1998). In general, personal keenness and upgrade is key and has a positive impact on in the adoption of novel technologies such as m-transaction and m-payment (Aldás-Manzano et al., 2009; Kim et al., 2010).

In this study, not all the retailers had fully embraced the technological modernization owing to the differences in the graphical user interface of personal keenness and upgrade. Hence, this was very surprising as most of the respondents reported to have been using mobile phones in their transactions. Nevertheless, these results are similar to those obtained by (Liébana-Cabanillas et al., 2014).

This study further revealed that most the retailers preferred personal keenness and upgrade because of its customizable flexibility and would encourage customers to engage in m-commerce. This indicates the use of technological modernization in the business success of African wax-prints in Enugu may be strongly influenced by the flexibility of the financial application as compared to

ease of use of the application. This study also showed that most retailers had adopted technological modernization because of its convenience and simplicity. This is because, with the use of m-commerce application, access to pictorial data and other information can be done at any time with only the access to internet being the possible limitation. The usefulness of technological modernization has the right potential to reduce the turn-around and throughput time, and also save operating cost for the retailers. This study further explained the performance and the success of a business which can be assessed on the costs savings. This means that by reducing running variable costs among Africa wax-prints, retailers could increase the returns through the adoption of technological modernization, thus leading to the establishment of economic growth.

Furthermore, the use of technological modernization among the customers also reduces their time of decision on the descriptive features of the African wax-print. This study also showed that among the Nigerian retailers, issues of privacy and security were major concerns that could affect the linking of the local retailers to the customers.

However, this was shown that it did not significantly affect the usefulness of m-commerce. The levels of knowledge of the respondents may have also played an important role in the wide use of m-commerce. Most of the respondents were university graduates. Therefore, this suggests that learning and knowledge may be key factors in the use of m-commerce (Kalinic and Marinkovic, 2016).

5.4.2 On Consumer Demand

The result of this objective is supported by previous studies carried out by Schierz et al. (2010) and Wang and Li (2012) who identified ubiquity as the most important quality of mobile technology and m-commerce combined. This promoted the association that propelled the unlimited access to the remote wireless mobile connectivity (Kim et al., 2010). On the other hand, the study carried out by Limayem et al. (2000) and Kuo and Yen (2009) made a positive contribution directly and indirectly on quality perception on the “attitude and intention to use” a personal innovativeness and adoption of novel technology.

Further studies indicated the insignificance of perceived usefulness on personal innovativeness (Varma Citrin et al., 2000). Perceived usefulness greatly influences the adoption of new

technologies. It further described the accuracy of a system and its enhancement to promote task execution (Davis, 1989). Further studies inferred that internet search provides unlimited information, promotes comparative internet purchases and enables convenient procurement (Vijayarathy, 2004). In general, the usefulness of consumer demand on flexible market makes it easy to arrange with the suppliers without going to their shop or travelling to the depot. According to Anckar and D'Incau (2002), consumer demand has the potential to affect the strategic values of both the suppliers and the retailers. This study further showed that cost of running and maintaining consumer demand on flexible market was one of the major factors that may have affected the usage and adoption. This study showed that while most of the respondents were on-prepaid billing system and spend a maximum of N5000 on the usage of internet, consumer demand on flexible market potentially reduce the running costs and loss of monetary transactions.

This is in line with the finding of Boadi et al. (2007). According to these authors, the adoption of m-commerce in some parts of Ghana led to the reduction in the running cost such as its fuel use, advertising, and travel allowances. On the other hand, Mark and Lei-da (2004) observed that the participation of customers in m-commerce may have financial and cost implications which may influence its adoption.

Previous studies suggest that internet shopping usage and adoption has not been quick (De Haan, 2000). On the other hand, this study shows that there has been an increase in the adoption and use of internet shopping thus creating a flexible market for both the retailers and customers. Although this is in contrast to the finding of De Haan (2000), current finding by Malik et al. (2013) indicate that online shopping has been projected and expected to become an important tool in the markets. This, therefore, suggests that there is room for the development and advancement of the technology. In achieving this, its expansion may also have implications on the flexibility and revenue generation for the retailers.

This study indicates that most retailers were willing to encourage their customers to adopt and use internet shopping apps. This means there is a potential on customers to make use of internet shopping, there is need create awareness about the application in order to increase its usefulness. Increasing awareness may also influence the adaptability of the tool. Once this has been accepted

among the customers at their convenience, chances on the market demands and flexibility may increase thus improving the returns for the retailers.

In the current study, a large number of the retailers indicated to have been using internet shopping. On the other hand, this suggests that not much has been known about the perception of customers towards the adoption of m-commerce. While the respondents cited security and other challenges encountered with online application as some factors that may influence customer preference, others have observed that internet may also be a key issue that may influence its adoption (May, 2001) thus affecting the flexibility of market creation for retailers.

5.4.3 On Network Chains

Previous studies by Cheng et al. (2006), Kim et al. (2010) and Ha et al. (2012) focused on internet innovation which were mentioned as internet banking, m-payment and m-banking respectively. The combined usefulness of these new technologies contributes to the direct effectiveness of mobile money. Similarly, the study by Shin (2009) shows that self-efficacy and personalisation are significant elements in the mobile environment where several factors multitask on the background to give results to the user. Another study showed the motivations on location information based mobile services and personalized messages (Ho, 2012). This is a significant and positive association where the consumer can engage with the internet for both personal and business purposes. They could spontaneously source information's based on their independent locations on how and where to locate specific retailers of a particular product.

Since mobile wireless devices have become part of everyday core activities in the business environment, this created several opportunities to directly contact the consumers (Balasubramanian et al., 2002). It is surprising on the up close of the role of network chains at the heart of its innovation with the collaboration of technological interface, its results get to answers for about the marketing solutions (Davis-Taylor, 2012). Adverts provide consumers with the key information they are concerned in. This medium gives the retailer/ marketer the edge to build a new dimension in customer relationship.

The factors that were also associated with this development are associated with the wide use of internet which is rapidly increasing between the retailers and the consumers. The view of Pavlou and Stewart (2000) on the role of network chains using interactive technologies and continuous improved apps supports the objective of this study but although not all the consumers might like the app activities through the wireless mobile device, this approach might limit the chances of the retailer (Robins, 2003). In network chains, new and improved technology and time of execution are very important factors. Therefore, older equipment or apps will likely give a network glitch to the user while timely response to demands may lead to slow market response (or supply) and losses for the retailers.

The results from the current study suggest that the adoption of the features of network chains can be a useful communicable tool in enhancing the relationship between the suppliers, retailers, and customers. This agrees with the findings of Ankar and D'incau (2002) who pointed out that online shopping is effective in marketing as it provides location-based information for the consumer to choose where best to search for products (African wax-prints) within a specific location.

Furthermore, this supports the study of Aldás-Manzano et al. (2009) who emphasised on low prices, convenience time saving, assortment range and variety while Misonzhnik (2011) emphasis the improvement of in-mall experience for consumers. Lastly, strategic factors of m-commerce inferred from Chapter 2.3 can provide individuals and organisations (companies) the leverage, convenience and minimal risk free access to vital information from different users at place and time from their respective location (Financial, 2004).

5.5 Summary

This chapter discussed the results from previous chapter. The discussion was based on detailed inference of the summary and details of the findings, the secondary objectives and the hypothesis testing. Positive and negative attributes were drawn from other relative studies which have similar contributions to the key points that were discussed. The next chapter would discuss the conclusion and recommendation of the study.

CHAPTER SIX

Conclusions and Recommendations

6.1 Introduction

This chapter presents the conclusion and recommendation of the study. The purpose of this study was to investigate the impact of m-commerce on the business success of African wax-prints. The study discovered that the strategic factors of m-commerce have a positive effect on the business success of African wax-prints in Enugu, Nigeria. The study provides areas for further studies and development.

6.2 Conclusion

The results on the Chi-square test conclude that the measure of sampling adequacy shows a consistent positive relationship. There is an association between age and trading \ using African wax-print was observed, ($\chi^2 (8) = 94.426, p < 0.001$). Furthermore, the correlation result inferred a strong correlation of 0.568 associated to the direct linking of Technological Modernization, 0.853 of Consumer Demands on a flexible market and 0.805 on the role of Network chains in relation to African wax-print. Therefore, from the results obtained, m-commerce has a positive impact on African wax-print.

6.3 Implication of this research

This study has explored the impact, possibilities, benefits and the challenges of consumers and retailers on adopting m-commerce on the business success of African wax-prints in Enugu, Nigeria. It examined the application of strategic factors of m-commerce between the consumers and retailers on the flexible market for consumers of African wax-prints.

6.3.1 Theoretical Implication

The traders and retailers is driven by the acceptance of m-commerce as major prerequisites to mobile technology because of the ease of its use and communication which creates a flexibility on the flow of information (internet) for different purposes (Malik et al., 2013). For the purpose of this study, the technological contribution on professional development created the atmosphere for further development of m-commerce in other relative fields. The statistics on the general social impact and use signifies the ease of use and the perceived usefulness by the respondents.

A study by Yang (2005) have inferred that the application of Technological Acceptance Model examines relative realistic results compared to other studies across the world. Personal innovativeness and the ease of use significantly influenced the self-efficacy with a minor effect on the perceived usefulness. The necessary skills to adopt the use of m-commerce lies in the influence and readiness of the public to adopt the use of this services in the nearest future and recommend them to their users and associates (Kalinic and Marinkovic, 2016).

6.3.2 Managerial Implication

Business sponsors may benefit from these suitable tactics for the professional development of m-commerce applications and enactment in the consolidation of a long-term relationship with its users and potential associates. M-commerce campaigns on marketing which must take into account to observe the social influences based on social networks and viral publicizing to create a promotable environment to foster the adoption of m-commerce and influence the consumers' intention to use the application. This study has a significant effect on social influence on her consumers'. Individuals and private organisations should partner in developing a consolidated app that would be aimed at integrating the needs of the consumers who would readily recommend other users and associates especially clients or consumers who demonstrate features of a change champions.

Developers of mobile applications should integrate mobile services and marketing techniques in the activities that simplifies awareness to ease the reach of the possible user. Consumer behavior should be supported by m-service to engage the values, image and personal notions of the user to advance their work presentation in the execution of business tasks and strategies. Businesses need the right tools and emphasis to substitute into the value stream development of m-commerce through the transforming of existing business models to produce a sustainable economic advantage model that can revolutionize businesses that operates on m-commerce platforms.

6.4 Limitation of the study

The context of this study was measured in Enugu, Nigeria. This study does not cover all the issues that m-commerce is likely to raise because the sample is limited to only consumers, retailers and traders of wax-prints in Enugu-North Local Government Area of Enugu State, Nigeria.

6.5 Recommendation to solve the research problem

The information obtained from this study can contribute sufficient intelligence for individuals and organizations to create a friendly mobile platform that can integrate all possible consumer assist options to locate the retailers, view varieties of the wax-print, issue payments and communicate actively to other consumers, distributors and manufactures of African wax-prints on how they can improve on the product of the wax-prints and the internal distribution of the wax-prints directly from the consumers wireless mobile device within Nigeria with the less involvement of a third party agent.

6.6 Recommendations to solve the future problem

In the future, relative or independent studies can be considered in other regional parts of Nigeria with the ease of incorporating their unique accepted African-wax print. Lastly, since the technology of m-commerce is a fast and evolving innovation tool in the industry, the opportunities for future research are limitless. Further research can be considered in researching other aspects of m-commerce such as m-logistics and m-advertising to improve the consumer experience in Nigeria.

6.7 Summary of the study

This section presents an overall summary of each chapter in this study.

Chapter 1 discussed the origin, the trends of African wax-prints and the transformation of our day to day activities with the use of mobile technology and mobile applications. Chapter 2 discussed the literature review of the study. Chapter 3 discussed the research methods in details and its application to the study. Chapter 4 presents the significant findings of the study which is linked to the strategic factors of m-commerce. Chapter 5 discussed the results of the findings from the previous chapter. Finally, Chapter 6 concludes the positive effect of the strategic forces of m-commerce, the implication and the limitation of the study. Recommendable resolutions to the problem have multiple steps in achieving an attainable solution to the study while the opportunities in adopting a seamless development of an independent mobile application to cater for a specific need to integrate all interested stakeholders.

NOTES

1. *African (Textile)*

This is the textile imported from Europe, India since the 1870's up until the establishment of local factories around the African continent

2. *African wax-prints*

This is the textile manufactured within the African continent. This has the European and African blend and it is highly influenced by the direct provincial territories, which the wax-prints communicate their culture in an acceptable manner.

3. *Mobile Technology*

This is the device that consists of smartphones and tablets which serves as a mobile medium of communication.

4. *E-commerce*

This is the application which facilitates the extensive communication between desktop and laptop computers. It is primarily powered by the Web browser and also known as electronic commerce.

5. *M-Commerce*

This is the application which facilitates the extensive communication on the mobile devices.

These consists of different packages:

- i. m-commerce (*m-shopping, m-advertising, m-banking, m-booking, m-ticketing, m-banking, m-logistics*)
- ii. m-social (*WhatsApp, Facebook, Instagram*)
- iii. m-entertainment (*m-games*)
- iv. m-services (*m-health, m-education*)

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Appendix A: Table

		How long have you been trading \ using African Wax-Prints?			Total	
		2 - 5 years	6 - 8 years	More than 10 years		
What is your age bracket?	20 - 24	Count	73	11	6	90
		% within What is your age bracket?	81.1%	12.2%	6.7%	100.0%
		% within How long have you been trading \ using African Wax-Prints?	60.8%	28.9%	5.3%	33.1%
		% of Total	26.8%	4.0%	2.2%	33.1%
25 - 34		Count	38	18	69	125
		% within What is your age bracket?	30.4%	14.4%	55.2%	100.0%
		% within How long have you been trading \ using African Wax-Prints?	31.7%	47.4%	60.5%	46.0%
		% of Total	14.0%	6.6%	25.4%	46.0%
35 - 44		Count	6	4	32	42
		% within What is your age bracket?	14.3%	9.5%	76.2%	100.0%
		% within How long have you been trading \ using African Wax-Prints?	5.0%	10.5%	28.1%	15.4%
		% of Total	2.2%	1.5%	11.8%	15.4%
45 - 54		Count	1	2	5	8
		% within What is your age bracket?	12.5%	25.0%	62.5%	100.0%
		% within How long have you been trading \ using African Wax-Prints?	0.8%	5.3%	4.4%	2.9%
		% of Total	0.4%	0.7%	1.8%	2.9%
Above 55		Count	2	3	2	7
		% within What is your age bracket?	28.6%	42.9%	28.6%	100.0%
		% within How long have you been trading \ using African Wax-Prints?	1.7%	7.9%	1.8%	2.6%
		% of Total	0.7%	1.1%	0.7%	2.6%
Total		Count	120	38	114	272
		% within What is your age bracket?	44.1%	14.0%	41.9%	100.0%
		% within How long have you been trading \ using African Wax-Prints?	100.0%	100.0%	100.0%	100.0%
		% of Total	44.1%	14.0%	41.9%	100.0%

Appendix B: QUESTIONNAIRE

Section A - BIO-DATA

1. What is your gender Male Female
2. What is your age bracket? Below 24
 25-34
 35-44
 45-54
 Above 55
3. What is your highest level of education :
 No formal education
 Basic education
 Secondary education
 University level
4. Professional status :
 Unemployed
 Employed
 Student
 Retired
 Other (Pls specify) ___
5. Household size :
 1 person
 2 people
 3 people
 4 people or more
6. Marital status :
 Single
 Married
 Divorced
 Widowed

Section B – AFRICAN WAX

7. For how long have been trading African Wax-Prints?
 2-5 years
 6-8 years
 More than 10 years
 More than 20 years
8. How do you source the African Wax-Prints
 Desktop internet
 Mobile internet
 Paper booking
 Phone calls)
 A mix of sources
9. How much do you earn annually in the trade
 Between N250K to N750K
 Between N751K to N1 million
 Others (Pls specify_____)

Section C – Strategic Factors

Mark X against the following numbering to answer the following:

- Strongly disagree** as 1
Disagree as 2
Cannot decide as 3
Agree as 4
Strongly agree as 5

Technological Modernisation

I am curious about how new mobile phone technologies work	1	2	3	4	5
I am generally quick to use newer models of mobile phone devices	1	2	3	4	5
I have a favorable attitude towards mobile technology oriented products	1	2	3	4	5
I am knowledgeable about M-Commerce (internet commercial transactions on a mobile phone	1	2	3	4	5

Consumer Demand

Mobile phones have the needed features to make online purchases	1	2	3	4	5
Mobile phone technology is sufficiently fast enough to do online transactions	1	2	3	4	5
It is easy to search for products and services online using mobile phone technology	1	2	3	4	5
It is easy to pay for items purchased online using mobile phone technology	1	2	3	4	5
. It is easy to navigate websites on the mobile phone	1	2	3	4	5
Mobile phones' displays are sufficiently clear and understandable.	1	2	3	4	5

Network Chains

Using mobile money improves my work performance, my productivity and effectiveness in my work.	1	2	3	4	5
It is useful as it provides information based on location	1	2	3	4	5
Mobile phone technology provides flexibility in shopping for products and services online	1	2	3	4	5
Mobile phone technology can be useful to buy a range of products and services on the Internet	1	2	3	4	5

Adopted from Byramjee et al., (2010)

Section D - Network chain

10. Type of mobile device?

- Ordinary phone
- Smartphone
- Tablet

11. How much do you spend on internet monthly?

- Less than N500
- Between N500 - N999
- Between N1000 - N4999
- Between N5000 - N9999
- Over N10 000

12. Do you use the internet on your mobile device?

- Yes
- No
- Not Sure

13. What do you use your internet for?

- Personal
- Business related
- Both
- Others (Pls specify) _____

14. Do you engage in mobile money transactions?

- Yes
- No
- Not Sure

15. Have you ever encountered money loss via mobile transactions?

- Yes
- No

16. How private do you consider information on you mobile device?

- Very private
- Somewhat private
- Not private

17. How do you find using mobile transactions and other applications?

- Easy
- Difficult
- Others

18. What benefits of mobile money transactions did you observe?

- Convenience
- Easy and instant transfer
- Others (Pls specify) _____

19. What problems, if any, have you encountered with mobile application

- Fraud
- Slow network challenges
- Others (Pls specify) -----

20. Would you introduce someone to use mobile money transaction to purchase African Wax-Prints

- Yes
- No

21. Does the use of mobile help you save cost?

- Yes
- No

22. Would you be interested in contributing to develop/deliver knowledge on flexible software application?

- Yes
- No

Thank you for your time and your patience

Appendix C: Work Plan

Details	2017																							
	June				July				August				September				October				November			
Concept Note, proposal, submission and approval																								
Conducting of test pilot survey																								
Actual data collection																								
Data analysis and interpretation (data presentation)																								
Communication of findings																								
Drafts and Submission of final report																								

Appendix D: Budget

	Items	Quantity	Units	Unit price (Rands)	Total (Rands)
1	Printing papers	4	Reams	49	196
2	Pens (assorted)	1	12	4.50	54
3	Paper pad	2	6	23	46
4	Document files	1	Piece	42	42
5	Flash USB disk	1	piece	130	130
6	Typing services	1	30	22	660
7	Printing services	4	110 pages	2.50	1100
8	Binding services	4		75	300
9	Proof reading / Editor	1	110 pages	35	3850
10	Test run printing	1	110 pages	2.50	275
11	Internet services	180	days	799	4794
12	Transportation to Nigeria	6	flights		29 842
13	Transportation within Nigeria	21	days	480	10 080
14	Meal allowance	28	days	110	3 080
15	Supervisors allowance	2	persons	3500	7000
16	Corrections reprint	2	114 pages	2.50	570
17	Travelling cost	1	person	1050	2100
18	Accommodation and food	7	days	400	2450
19	Internet	1	3GB	299	299
	TOTAL				66848

Appendix E: Letter of Introduction

University of KwaZulu-Natal,
Westville Campus.
University Road, Westville 3600.
New Residence C-3-31
Durban, 4001. South Africa.
15th May, 2017.

The President,
ECCIMA Secretariat Complex,
Old Trade Fair Complex,
Enugu, Nigeria.

Dear Sir \ Madame,

Re: Letter of Introduction and permission for Data Collection.

My name is Arinzechukwu Dennis Obiora with Passport Number A09402057. I am currently in my final year with students' registration number 213570638 in the discipline of Masters of Business Administration with the *Graduate School of Business and Leadership, University Of KwaZulu Natal, Durban, South Africa.*

I am undertaking a research study on *The Investigation of Mobile Technology "M-Commerce" On African Textile: A Nigerian Case Example.*

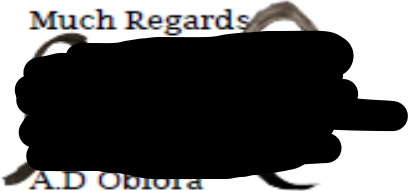
In this regard, I am kindly requesting for your support in terms of time and permission to carry out my study with the local organization of businesses in Enugu.

This is intended to investigate the possible effect of *Mobile Technology and "M-Commerce"* of addressing the challenges of local businesses are facing with the distribution of African Textile within Enugu, Nigeria.

This study can be fully developed to be a sustainable socio-economic solution in Enugu (and Nigeria at large) that will ease the logistics in local distribution and possibly reduce the hardship in the country.

Thank you for your cooperation.

Much Regards



A.D Obiora

+27 (0) 84 389 4028

Appendix F: Research Permit



ENUGU CHAMBER OF COMMERCE, INDUSTRY, MINES AND AGRICULTURE

(MEMBER OF NIGERIAN ASSOCIATION OF CHAMBERS OF COMMERCE, INDUSTRY, MINES & AGRICULTURE)

SECRETARIAT:
Old International Trade Fair Complex,
Abakaliki Road, Box 734 Enugu, Nigeria.
Tel: 234 (042) 290481, 234 (0) 7036709103.
Email: enuguchamber@yahoo.com.
www.enuguchamber.org.

1st May, 2017

TO WHOM IT MAY CONCERN

APPROVAL FOR THE PERMISSION OF DATA COLLECTION

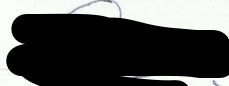
This letter is a confirmation that Mr. Arinzechukwu Dennis Obiora with Passport Number A09402057 and students' number 213570638 has been granted permission to collect data as part of his MBA study at the Graduate School of Business and Leadership, University of Kwazulu Natal from different business organization and environments in the Enugu jurisdiction of Nigeria.

The sourced data and analysis will be used by him in completing his MBA dissertation or to publish his findings in research journals.

Your kind assistance in providing the above mentioned with the approved ethical clearance and other necessary documentation will be most appreciated.

Should you have any queries in this regard, kindly contact me on +234(0)7036709103.

Yours faithfully,
ENUGU CHAMBER OF COMMERCE


Amaechi Agwu
For: Director General

Rev. Surv. Ugochukwu Chime (President)
Pharm. Emeka Udeze (1st Deputy President), Sir. Emeka Nwandu (2nd Deputy President)
Sir Chijioke Mbagwu (VP Treasury), Barr. Jasper Nduagwu (VP), Lady Claire Asogwa (VP), Engr. Nonye Osakwe (VP), Dr. Emma Nwankpa (VP), Sir. Odeiga Jideonwo (VP), Sir. Emeka Okereke (Director General)

Appendix G: Ethical Clearance



1 February 2018

Mr Arinzechukwu Obiora (213570638)
Graduate School of Business & Leadership
Westville Campus

Dear Mr Obiora,

Protocol reference number: HSS/1191/017M

New Project title: The investigation of the impact of mobile technology "m-commerce" on the Business success of African Wax-Prints: A case of Enugu, Nigeria

Approval notification – Amendment Application

This letter serves to notify you that your application for an amendment dated 31 January 2018 has now been granted **Full Approval** as follows:


- **Change in Title**

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. **PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years**

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully


.....
Professor Shenuka Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

Cc Supervisor: Dr Bibi Z Chummun
Cc Academic Leader Research: Dr Muhammad Hoque
Cc School Administrator: Ms Zarina Bullyraj

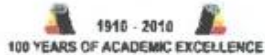
Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 280 3587/8350/4557 Facsimile: +27 (0) 31 280 4609 Email: ximbap@ukzn.ac.za / snymann@ukzn.ac.za / mohunp@ukzn.ac.za

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Appendix H: Turnitin Report

THE INVESTIGATION OF THE IMPACT OF MOBILE TECHNOLOGY "M-COMMERCE" ON THE

ORIGINALITY REPORT

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SIMILARITY INDEX

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"Analysis of the Consumer Preferences toward M-Commerce Applications Based on an Empirical Study", 2006 International Conference on Hybrid Information Technology, 2006

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Appendix I: Editors Certificate



HOUSE NUMBER 12 BLOCK NN

SOSHANGUVE

0152

18 February 2018

To whom it may concern

REF: PROOF OF EDITING

This letter serves to confirm that a mini-thesis entitled "*The investigation of the Impact of Mobile M-Commerce on the Business Success of African wax prints: A Case of Enugu, Nigeria*" by AD Obiora (student number 213570638) intended for submission to the University of KwaZulu-Natal has been edited by me. Should any additional information be required in this regard, please do not hesitate to contact me through phone call or email.

Yours faithfully

A black rectangular redaction box covering the signature area.

Ndhlovu Emmanuel (Research Consultant and Editor)

matahemanu@yahoo.co.uk

+27731458524

BA Hons, BA Hons, MA, PhD Candidate