



MOBILE COMMERCE INNOVATION:

A CASE FOR RETAILER ADOPTION AND CONSUMER ACCEPTANCE IN NIGERIA

BY

UCHECHUKWU NNENE

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APPROVAL PAGE

This applied dissertation was submitted by Uchechukwu Nnene under the direction of the persons listed below. It was submitted to the University of Hertfordshire Business School and approved in fulfilment of the requirements for the degree of Doctor of Business Administration at the University of Hertfordshire.

Dr Marija Cubric

Principal Supervisor

Dr Birinder Sandhwalia

Second Supervisor

Dr Festus Oderanti

Third Supervisor

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DEDICATION AND ACKNOWLEDGEMENT

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ABSTRACT

The purpose of this research project is to explore the adoption and acceptance of Mobile Commerce (MC) in the B2C retail sector in Nigeria. In an era of ever-evolving technological landscape, MC as a technological phenomenon is trending globally and is said to become a catalyst for economic growth. However, developing nations are yet to fully exploit its vast opportunity. The research examines the antecedent factors, contributions, options and implications of MC adoption in Sub-Saharan Africa with a specific focus on Nigeria. A convergent mixed method research within a case study approach is applied by triangulating customer survey data [N¹ = 392] and 16 semi-structured interview data from managers and senior representatives of 13 retail organisations in Nigeria. This is with the aim to understand the extent to which a holistic value-based MC adoption model, can be used to examine MC adoption and acceptance behaviours from perspectives of organisations and its customers.

The findings reveal that perceived value is a significant and positive predictor of customers' MC adoption. From the organisation perspectives, 22 variables across four main constructs (technology – organisation – environment – other factors) were identified as antecedent factors influencing Organisation MC adoption. In presenting a holistic B2C value-based MC adoption model, the findings revealed concordance between the organisation MC value proposition and customers perceived value; expansion fit between organisation and customer value co-creation and complementarity in MC value realised. Multi-level dyadic trust, which is the level of trust between customer and organisation and vice versa, was a significant and positive predictor of both customers' acceptance and organisational adoption. These findings narrow the research gap and extends the body of knowledge as it expands on the VAM and TOE model. The TOC adoption framework provides students and scholars with creative ways to present future mixed method studies within the MC and technology domain. It presents retailers, practitioners, technology investors and institutional stakeholders with opportunities to adopt process that foster MC growth and ability to reimagine their business models.

KEYWORDS

Mobile Commerce, Mobile Commerce Adoption, Online, Electronic Commerce, Adoption Intention, Innovation, Retail, Technology Acceptance, Business Model, Value-based Adoption, Nigeria, Sub-Saharan Africa.

¹ N = Number of survey participants.

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List of abbreviations

Abbreviation	Description
2G	Second generation network
3G	Third generation network
4G	Fourth generation network
5G	Fifth generation network
AI	Adoption Intention
API	Application Process Integration
B2B	Business to Business
B2C	Business to Consumer
B2G	Business to Government
C2B	Consumer to Business
C2C	Consumer to Consumer
CBN	Central Bank of Nigeria
CFA	Confirmatory Factor Analysis

Abbreviation	Description
DOI	Diffusion of Innovation
EC	Electronic Commerce or eCommerce or E-Commerce
FCT	Federal Capital Territory
GDP	Gross Domestic Product
GSM	Global Systems of Mobile Communication
IDT	Innovation Diffusion Theory
IMF	International Monetary Fund
MC	Mobile commerce or mCommerce or m-commerce
MCA	Mobile Commerce Adoption
MMR	Mixed Methods Research
MMS	Multi-media service
MSM	Mobile social media
NCC	Nigerian Communication Commission
NITEL	Nigeran Telecommunications Limited
PEoU	Perceived ease of use
PoD	Payment on delivery
POS	Point of Sale
PSB	Payment Service Bank
PU	Perceived usefulness
PV	Perceived Value
SN	Subjective Norm
SLR	Systematic literature review
SMS	Short messaging service
TAM	Technology Acceptance Model
TAM2	Technology Acceptance Model 2
TOC	Technology, Organisation, Customer model
TOE	Technology – Organisation – Environment
TPB	Theory of Planned behaviour
TRA	Theory of Reasoned Action
TTF	Task Technology Fit
UTAUT	Unified Theory of Acceptance and Use of Technology
VAM	Value-based Adoption Model
WAP	Wireless Application Protocol
WOM	Word of mouth
WWW	World Wide Web

Chapter 1: Introduction

The case for Mobile Commerce adoption in Nigeria B2C retail sector

Despite phenomenal growth in mobile technologies, mobile commerce (MC) is said to be at a nascent stage in developing economies like Nigeria. Although the topic is fast gaining scholarly interest in Europe, Asia and parts of America, there is still an adoption gap within the African continent. According to Gartner, mobile shopping has risen in prominence especially in recent months as retail turns digital (Baker, 2020). However, MC retail sale still accounted for less than 1% of total sales (\$230.7m of \$25,210m) in 2020 within Nigeria, compared to the rest of the world (Passport, 2021). It has therefore never been more pertinent to understand the reason for such digital divide.

As at March 2021, Nigerian Communication Commission (NCC) estimated that 198.6 million Nigerians subscribed to mobile services, accounting for 96% of the population (although individuals are said to have more than one phone). How does this compare globally? Smartphone adoption continues to rise rapidly in the region, reaching 75% of total connections by 2025, as cheaper devices have become available. It is also said that third generation (3G) network will overtake second generation (2G) in 2019 to become the leading mobile technology in West Africa with fourth generation (4G) now gaining traction in major cities in Nigeria (GSMA, 2020). Another major driver of the mobile evolution is the youth population whom smartphone manufacturers in partnership with online retailers strategically target with affordable smart devices. The youth demographic² is an imperative for growth in the Nigerian market as they represent 62.38% of the population and the most tech-savvy (Statista, 2021).

Over the years, the Nigerian Government has become reliant on oil exports, however with the decline in oil prices and with the world event bringing to the fore, the importance of digital networks and connectivity for economic and social wellbeing, there is the need to consider alternate technological innovations as a means of achieving substantiable and long-term economic growth. Government policies and other growing trends in Nigeria such as: the introduction of cash-less payments by the

² Half of the Nigerian population is less than 19years with median age in 2021 of 18.4 years.

Central Bank of Nigeria (CBN) in 2012, growth in mobile telephony with directives imposed by the Nigeria Communications Commission (NCC) in 2016, instructing major network operators to increase mobile tariffs, the introduction of licensing for Payment Service Banks (PSBs) allowing mobile operators to offer digital financial services In 2018 and more recently in 2020, the introduction of National identification Number (NIN) as part of the National ID Management Commission (NIMC) creates opportunities for an inclusive digital identity ecosystem.

To understand the adoption intention (AI) and value outcomes, within the business to consumer (B2C) retail sector in Nigeria, this research takes on a multi-case study within a mixed methods design. It explores the case of 13 retail organisations and 392 customers within Nigeria. The researcher has been fortunate to gain access to a cross section of retailers including: supermarkets, digital platforms, fashion and apparel, retail pharmaceutical, electronics and appliance retailers. Throughout this research, the researcher has been observing and following these organisations activities over the research period and it is safe to say that the Nigerian economic climate has played a role with these retailers such as, Hera, Vulcan, Ceres, Ares and Hades³ either expanded, devolved or ceased trading in one case recently. Although not part of the study, the research observed how some of these organisations coped during the pandemic⁴. On the other hand, organisations like Vulcan who when we started this research engagement, only had its offline store and the social media page have been forced to set up its mobile enabled website and offer customers the option of home delivery. Similarly, another major super market Ares suggested that they had to intensify efforts to reduce the number of customers that came into their physical store through offering free home delivery on its website and new mobile applications. It should be noted that the mobile application deployment was something the IT and operations department were still evaluating during our field visit. Ceres suggested that sales in the offline stores were significantly affected as its physical stores had to close

³ Names Hades, Vulcan, Ceres, Ares and Hera are Pseudonyms for names of some of the 13-retail organisation discussed in the case study.

⁴ The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing global pandemic of coronavirus disease first discovered in 2019 (COVID-19).

its business till further notice following the Government directives. The respondents also alluded to financial strain on their business with unbudgeted spend, logistical challenges with the ports closed as at the time and keeping the business operation operational while satisfying their customers. To reduce the financial impact and risk, very limited items were dispatched without “payment before delivery”. This is a concept we will explore further in the study.

As we look forward, what are the opportunities MC presents for these organisations and the economy post pandemic?

1.1. Research background

1.1.1. Research context

The term “Mobile Commerce” as a phenomenon has been well-studied with over 59,200 hits alone on Google Scholar [accessed April 2021]. The use and application of MC has been applied across varied industries such as financial services, insurance, retail, health, education and others. MC has been one of the focal points of innovation adoption. From research studies over the past two decades, evidence has shown that a rise of wireless internet connectivity, smart mobile devices and high speed fourth generation (4G) and more recently fifth generation (5G) networks continue to provide exciting and challenging ways in which business and consumers seek to adopt such innovation. MC has become a major phenomenon across the globe, accounting for up to 70% of eCommerce (EC)⁵ sales throughout Asia and a third of online sales in UK, US and Germany according to eMarketer. B2C retail organisations need to understand the key factors influencing MC adoption as part of their business strategy. Studies from research suggest that effective adoption and implementation of mobile technology is a potential source of customer value, improved organisational performance and competitive advantage. For example, through immersive online shopping experience (Pentina, et al., 2011); wireless business re-engineering (Varshney & Vetter, 2002); MC payment system (Abdullah, et al., 2012). In today’s digital

⁵ EC is defined as electronic capturing, processing, storage, communication and delivery of information using the information and communication technologies (Goyal, et al., 2017).

economy, MC is one of the important contributors with mobile contribution to global Gross Domestic Product (GDP) amounting to \$4.2trillion in 2019 and expected to reach \$4.9trillion by 2025 (GSMA, 2020).

In Sub-Saharan Africa, countries like Nigeria, few empirical studies have explored adopting MC as an innovative opportunity (if any) to improve business performance. One recent study by Ejemeyowwi and Osabuohien (2020) investigated the relevance of mobile technology adoption on inclusive growth in 15 West African countries using world development indicators from 2004-2015.

The situational context of the study is further expanded below to demonstrate the significance of the research.

1.1.2. Nigeria in context

The section presents the environmental context. The “reality” of digital mobile adoption with a focus on the retail sector in Nigeria. The economic and technological background, areas of opportunity and challenges to MC adoption in the Nigerian B2C retail economy is discussed.

The section introduces the global mobile market, the size and importance in today’s ever increasing digital world. The Nigerian economy, the Nigerian retail context and evolution of MC is explored. A summary conclusion is also presented.

1.1.2.1. *The global mobile market*

The world has never been more connected than it is today. According to GSMA, 67% of the world’s population are connected to mobile services with 5.2 billion subscribers at the end of 2019 (GSMA, 2020). This relates to people who have used internet services on a mobile device as shown in Figure 1-1. The number is expected to rise again to 5.8 billion by 2025. While the number of mobile internet users continues to experience growth with 3.8 billion people globally (49% of the population) now and 5.0 billion (61% penetration) anticipated by 2025 using mobile internet and getting online. However, the growth has not been equally distributed. While three quarters of the population are connected to

the mobile internet in North America and Europe, penetration is as low as 26% in Sub-Saharan Africa with the expectation that this is to rise to 39% (GSMA, 2020); with a third coming from Nigeria.

With the mobile phone penetration rate nearing saturation in Europe (85.5%) and North America (83.3%), there lies opportunities within Sub-Sahara Africa (45%) to expand mobile application usage and the services it can offer.

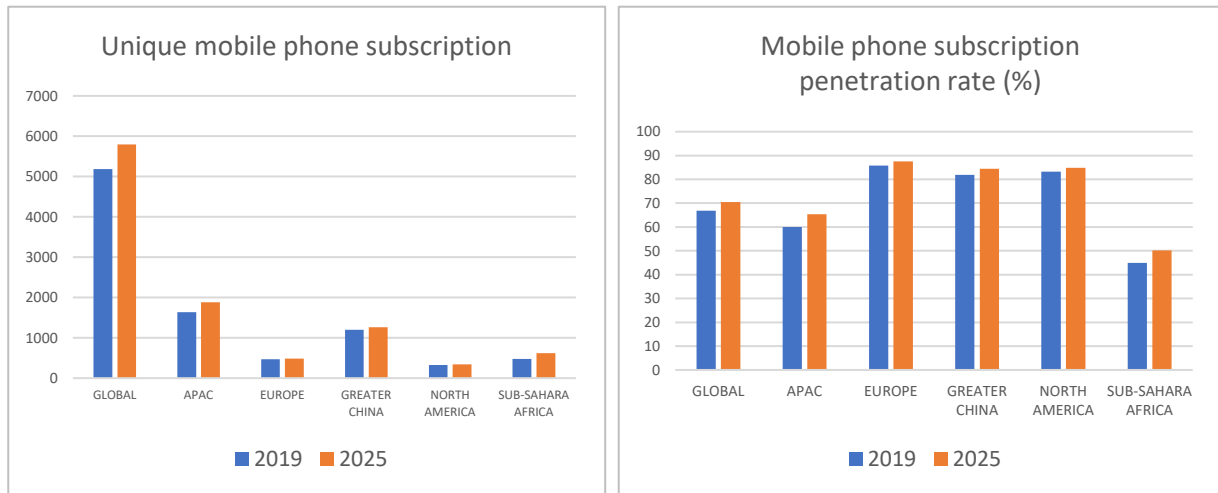


Figure 1-1: Mobile phone subscription and penetration rate to Global population 2019 – 2025 (predictions)

Source: GSMA, 2020

Smart phone adoption is said to rise, with four in five connections globally to be by smartphones by 2025; smartphone connections in Sub-Saharan Africa is expected to nearly double, fuelling most of the growth with the top three markets in Sub-Sahara Africa: Nigeria (154m); South Africa (73m) Kenya (47m) (GSMA, 2020). Smartphone penetration growth in Nigeria has stemmed from new entrants to the market such as Xiaomi, Huawei, Infinix etc. that have provided a greater choice of newer devices at varying price points and ranges tailored to meet user needs (for example, dual sim phones) (Bertille Guitton, 2016; GSMA, 2020). This therefore creates opportunities to support new customers and re-imagine business models.

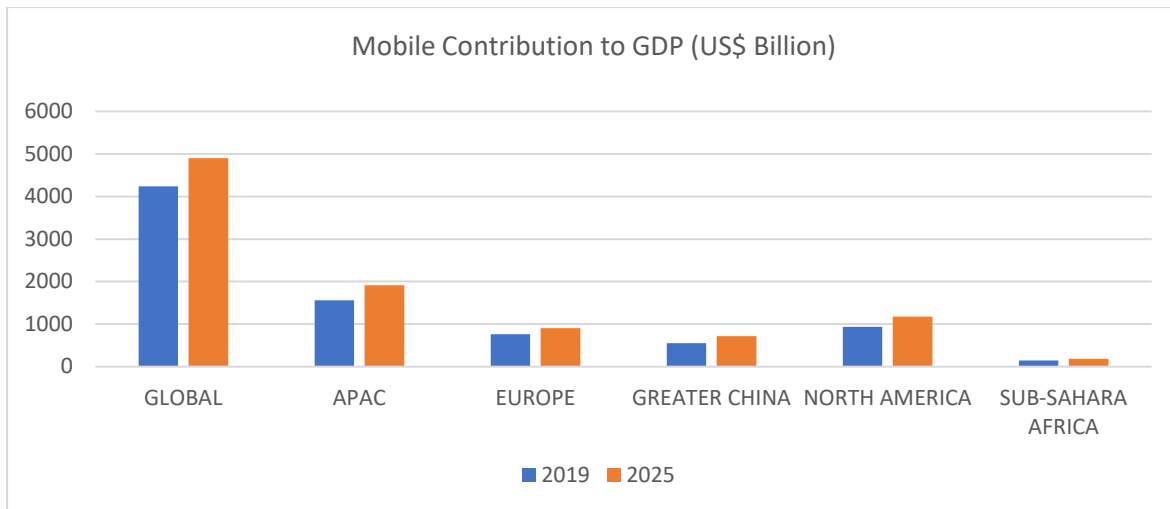


Figure 1-2: Mobile Contribution to GDP (US\$ Trillion) 2019 – 2025 (predictions)

Another interesting global trend is the mobile contribution to GDP with global contribution standing at \$4.24 trillion in 2019 and expected to rise to \$4.9 trillion by 2025. As can be seen in Figure 1-2, the disparity in GDP between Asia Pacific, Europe and Sub-Sahara Africa is wide; \$144B in 2019 and \$185B by 2025. As smart phone subscribers increase, the research posits that this presents government, retailers and other stakeholders’ opportunities to expand mobile GDP contribution, through further mobile enabled consumer spending and customer shopping.

1.1.2.2. Nigerian country overview

1.1.2.2.1. Nigerian economy

Nigeria is considered a developing economy despite a population of 206.1 million and GDP of \$429.4 billion per capita in 2020 (IMF, 2021). Its main commercial cities are Lagos (West), Port-Harcourt (South) Kaduna (North) and Abuja (Centre). Once considered the “giant of Africa” as the most populous country in Africa and one of the largest producers of oil. The recent oil price crash and growing global pressures to explore sustainable, renewable and greener energy imply a highly uncertain outlook for global oil demand; more so, other economic factors highlighting the need for Nigeria to diversify its economy more than ever. However, diversification still seems to remain largely elusive and growth trends uneven. The path Nigeria chooses now will have implications for decades to come. The Nigerian government aspires to diversified sources of growth (with commerce a

potential option) with the launch of the economic recovery and growth plan (ERGP) and Vision 2020. In 2019, Figure 1-3 showed green shoots of recovery experienced with annual real GDP growth measured at 2.3% from the previous year, however the impact of the pandemic reveals a downward trend in 2020 and diversification still seems to be largely elusive and growth trends uneven.

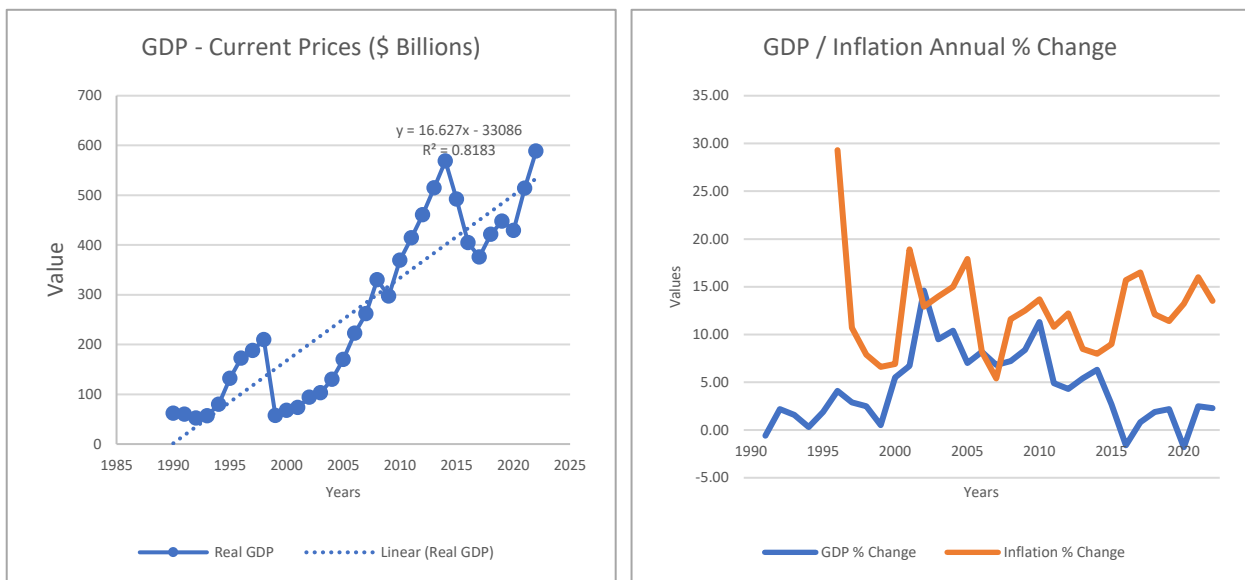


Figure 1-3: Nigeria GDP growth to inflation rate 1990 – 2022 (forecast)

Source: IMF data mapper, 2021

Nigeria needs to learn from the diversification experience of its peer countries. Malaysia, Indonesia and India used to bear a remarkable resemblance, in terms of the structure, culture, economy and economic policies to today’s Nigeria. For example, Malaysia in the 1960’s, Indonesia and India in the 1980’s was similar to today’s Nigeria (Ree, et al., 2021). Based on GDP per capita, all three countries trailed behind Nigeria before the 1980’s, but overtook it one after another following reforms with technology innovation playing a critical role in their growth.

1.1.2.2.2. The evolution of mobile telephony and MC in Nigeria

Another interesting background is how mobile telephony and MC has evolved and can be traced back to the deregulation of the telecommunication industry from 2001 with the launch of wireless network service providers. Before the advent of Global Systems of Mobile Communication (GSM), Nigerian

environment struggled with barely 500,000 telephone fixed lines as at the end of 2001, which was provided by the then Nigerian Telecommunications Limited (NITEL). The first GSM network provider was ECONET (now Airtel), formally launched in August, 2001 with MTN Nigeria following suit almost immediately, with licencing of 2 other GSM networks in 2001/2002, which brought about a shift in the way people communicate. These networks were launched under the 900 and 1800 MHZ spectrum. The subsequent introduction of per second billing by Globacom, unique tariffs and other packages brought about healthy competition and transformation of the Nigerian telecommunication industry. As a result, generations skipped the desktop computer due to the lack of fixed land lines, avoiding costs of a computer and jumping straight to mobile phones.

Nigeria boasts one of the largest growing mobile phone markets with about 198 million mobile cellular phone subscribers as at July 2020 (NCC, 2020) representing 96% penetration rate. Wikipedia 2018 ranking for smart phone usage shows a penetration rate of only 13% with 25.6m smartphone users and more recent findings vary to up to 40million (20% penetration) creating potential for further growth as predicted by GSMA to reach 154m user by 2025. This statistic creates opportunities for various sectors in Nigeria including retail. The key driver for this upward trend, could be attributed to:

Limited fixed line access - One of the underlying growths of mobile phone usage in Nigeria was the limited penetration of fixed line (ADSL) telephone networks. The adoption and use of the fixed-phone communication were the preserve of the rich due to the prohibitive installation cost. It was common sight to see long queues at phone booths where unit cards were used. In most homes then, the fixed-phones was locked as a means of controlling usage due to the high and sometimes irregular phone charges.

Pre-paid service - The emergence of mobile phones opened users to the opportunity to voice and short messaging service (SMS) communication delivered as a prepaid system where customers load 'credit'⁶ onto the phones, an innovation that completely revolutionised the Nigerian

⁶ The concept of "loading credit" is a term used to describe the top up of Pay-as-you-go phone credit.

telecommunication industry. Once that credit unit airtime is keyed in, the user will enjoy air time ‘credit’ from the operator. This negates the need for credit-checking as the operator avoids any loss and allows the consumer to still have financial control over what their mobile phone usage outlay. The network operators have now extended this service to not only airtime but data and Wi-fi services.

Mobile network operators – The introduction of other Global System for mobile communication network providers such as Etisalat, reformed ECONET (Airtel Nigeria) and Globacom Nigeria Limited brought about huge transformation in the Telecom industry. Each Network providers has its own unique tariffs and packages creating greater competition within the market and providing value to subscribers. This has been further fostered by the directive of the NCC in November 2016, mandating larger mobile operators, increase mobile data tariffs to provide a level-playing field for all operators in the market (GSMA, 2017).

Figure 1-4 shows the size of the Nigerian Mobile network market as of March 2021. The mobile network market in Nigeria is dominated by four GSM operators who hold the clear majority of the subscription base. In March 2021, the number of mobile subscribers was 195m (ITU, 2021). Nigeria’s largest operator has been MTN (a subsidiary of South Africa’s MTN Group) which has been operating in Nigeria since 2001 and currently holds a market share of 39% with 77.3m subscribers. Nigerian owned Globacom has been active in the market since 2003 and as at 2021, had 54.2m subscribers, which represented 28% of the total domestic mobile market. Airtel (a subsidiary of India’s telecom conglomerate, Bharti Airtel) is the 3rd largest player with 51.4m subscribers representing 26% of the market. Etisalat (now 9Mobile) is the fourth largest operator, following the acquisition of a digital mobile licence in 2007. It currently has 12.7m subscribers representing 7% of the market.

Table 1-1: Nigerian Mobile network market share – March 2021

Mar-21	Airtel	9mobile	Globacom	MTN	Total
Subscribers (millions)	51.4	12.7	54.2	77.3	195.6
Percentage (%)	26.20%	6.70%	27.60%	39.50%	100.00%

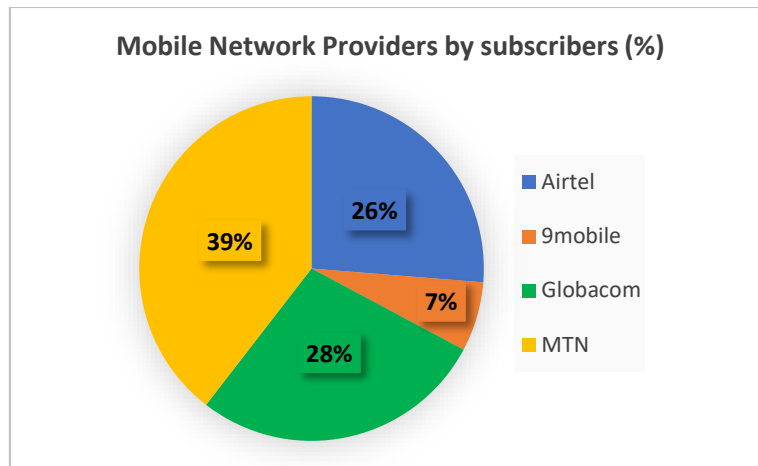


Figure 1-4: Nigerian Mobile network market share as at March 2021

Cheaper mobile phones - The first set of mobile phones sold in the Nigerian market at the inception had limited features and costed a fortune for the average Nigerian. Most of the handsets could only be used for voice calls and SMS. Gradually, as the mobile phone manufacturing industries improved on features of the phones being produced, so was Nigeria benefiting from this, and now the mobile phone market in Nigeria has become very competitive, with many relatively affordable smart mobile brand imports especially from China. Major brands available in most retail outlets in Nigeria includes the likes of Tecno, iPhone, Samsung, Huawei, Gionee, Innjoo, Itel, Infinix, Nokia, Sony Xperia, and LG.

Connectivity - According to GSMA (2020), in Sub-Sahara Africa, 3G overtakes 2G in 2019 and 4G overtakes 2G by 2023 as highlighted in red and orange respectively in Figure 1-5 below. It is expected that 3G will remain the dominant technology even with the trial of 5G in Nigeria, Gabon, Uganda and Kenya for the foreseeable future. However, even the 3G and 4G connectivity in Nigeria is unstable and there are several locations in the country (for example in rural areas) where the mobile networks cannot be reached. There is therefore that gap not only between developed and developing countries like Nigeria but further urban - rural divide within states. Even in large cities, as a result of power outages, the network is not always available. More needs to be done by the Government by way of

licensing agreements with the operators to ensure that businesses and consumers benefit from an optimal mobile broadband experience, based on technology-neutral spectrum⁷.

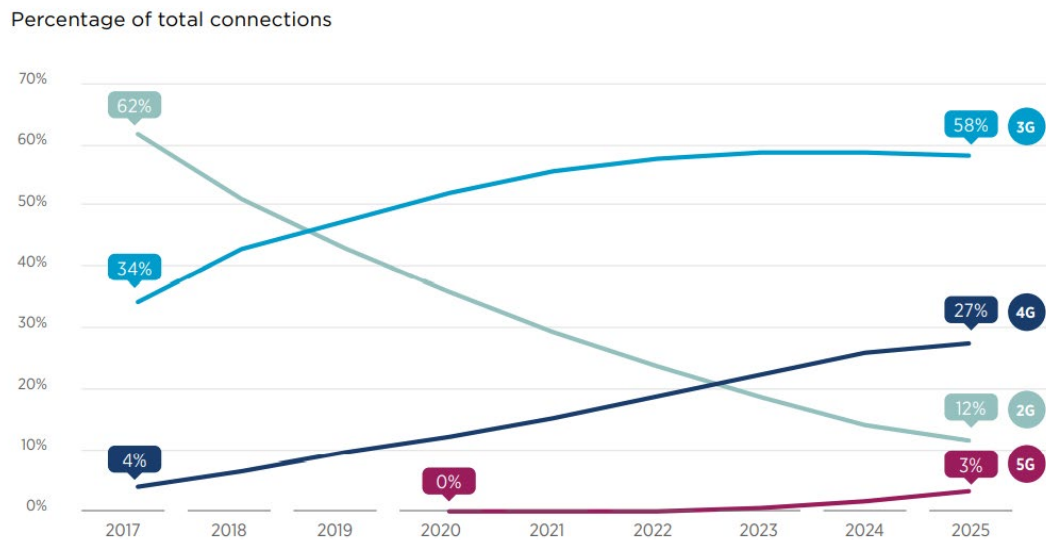


Figure 1-5: Percentage of total Network connections in Sub-Saharan Africa (source: GSMA 2020)

Nigerian cash-less policy - As at January 2012, the Nigerian Government first introduced cashless policy through the CBN in Lagos State and it was eventually rolled out on 1st July, 2014 across the rest of the 36 states and Federal Capital Territory (FCT). The new policy on cash-based transactions (withdrawals and deposits) in banks, aimed at reducing the amount of physical cash (coins and notes) circulating in the economy, as well as encouraging more electronic-based transactions such as payments for goods, services, transfers, etc. (CBN, 2021). This saw the evolution of EC in accelerating the retail industry in Nigeria, providing more businesses access to flexible and electronic means to transfer capital resulting in online retail boom from 2015. However, the adoption technology such as MC is considered to be in its infancy when compared to other developed economies. Retailers already operating through the World Wide Web (WWW) are becoming more aware of purchases made through mobile devices, particularly through mobile phones.

⁷ Spectrum is a range of electromagnetic radio frequency that wireless signals travel to enable mobile communication often issued by Government. Technology neutrality in spectrum management is the process of replacing spectrum bands (i.e., old GSM with 4G and 5G) in a manner considered timely and cost effective as part of the licensing agreements in countries.

Other trends shaping the mobile economy – Digital payments and broader financial services provide opportunity for growth such as Kenya’s M-Pesa mobile money. In October 2018, the CBN issued a new regulatory framework for the licensing of Payment Service Banks (PSBs) allowing mobile operators to offer digital financial services. This provides opportunity for further financial inclusion. For the majority of people in Sub-Saharan Africa, the lack of a verifiable identity and address remains a major barrier to participating fully in the digital economy. Trust is crucial to the successful development of an inclusive digital identity ecosystem. The latest drive is the introduction of National identification Number (NIN) as part of the National ID Management Commission (NIMC) of Nigeria in collaboration with the World Bank to develop an ecosystem that can provide a wide range of services, including social welfare, financial inclusion, digital payments etc. (NIMC, 2021).

1.1.2.3. Nigerian retail sector

In Nigeria, the models of MC include those where organisations commercial transactions take place with consumers (B2C); commercial transactions between organisations and other business organisations (B2B); consumers transact directly with other consumers (C2C); consumers initiate trading with businesses (C2B); and transactions with government (B2G). Agwu and Murray (2015) stipulate the only well-developed form of EC in Nigeria are B2B and B2C. There are different categorisations of EC which can be extended to MC (Combe, 2006; Chaffey, et al. 2009). However, as the study will be focusing on the B2C retail, let’s examine this in the context of Nigeria.

1.1.2.3.1. Business to Consumer (B2C) retail in Nigeria

Various scholars have explored the adoption of transactional B2C MC (Khalifa and Shen, 2008; Wong and Hsu, 2008; Yang et al. 2012). In the B2C context, the key to success is being able to fulfil customers’ expectations in terms of what they want, when they want it, and how they want it, all at the lowest cost (Kim, 2014). The B2C market has the highest profile of mobile based e-business (Combe, 2006) with some well-known global brands that include Amazon, E-bay and Alibaba. However, the Nigerian

retail sector can be broken into two main categories: Informal retail and formal retail (in store and online).

Informal retail sector:

The Nigeria's informal retailing channel is said to be worth billions of naira accounting for over 90% of the overall retail market (Passport, 2021). This creates a serious issue with significant tax revenue losses / shrinkage and unaccounted GDP revenue.



Figure 1-6: Photo of street retail in Nigeria (close to disused rail line)

The products affected include groceries, furniture, music, drinks, personal, beauty and health products. The main distribution channel for this type of retail is on Nigerian streets by hawking in slow moving traffic or setting up a tabletop store. The example Figure 1-6 show a typical street market where used apparels are bought and sold. This appeals mainly to the low income and middle-class consumers especially for its convenience and close proximity to homes. This creates challenges for the main retail channels as sales are lost. Similarly, consumers have little or no protection as such sales are transient in nature. Studies suggest a slight decline in the informal market as a result of state governments clamp down through city sanitization and urbanisation agenda as well as growth in the formal sector (Passport, 2021).

Formal retail sector:

The formal retail sector over the last two decades has experienced tremendous growth with distribution chains, hypermarkets and retail outlets which can be sub-divided into two categories: store based or non-store based (this includes online EC, MC, vending machines etc.). Nigeria is experiencing a shift to a more sophisticated structure as organised retail continues to gain ascendancy, with store-based retailing said to rebound strongly during 2021 and remain robust for the remainder

of the forecast period following the pandemic, as consumer confidence is revived (Passport, 2021). Store-based retail continues to reflect an evolving economy as standards of living improve. More than ever, the Nigerian consumer is interested in a decent shopping environment, neatly-arranged and labelled commodities and the experience that goes with buying at an organised retail outlet (BusinessDay Research and Intelligence, 2015).

Table 1-2: Nigerian Retail Sales by Category – NGN Billion - 2020

Category	Category Value	Current Year Growth	% CAGR {Historic}	%CAGR (Forecast) - 2025
Store-based Retailing	8,771.30	-5.5	4.6	12.8
Grocery Retailers	5,385.00	-5.1	5.3	12.6
Non-Grocery Specialists	3,291.50	-6.1	3.4	13
Mixed Retailers	94.8	-9.8	5.6	16
Luxury Retailing	12	-8.9	4.7	-
Non-Store Retailing	149.1	0.9	17.8	16.7
Direct Selling	24.2	-10.7	1.9	10
Vending	0.2	-18.1	2.7	13.6
EC	124.6	3.5	23.4	17.8
Mobile EC	81.6	6.8	18	19.2

Table 1-2 shows the breakdown of retail sales value (excluding sales tax) in Nigeria (NGN Billion) by store-based and non-store retailing. This shows an overwhelming reliance on store-based retail as a contributor to GDP in 2020.



Figure 1-7: Photo of Mega Mall in Ikeja, Lagos Nigeria.

Our research shows that the retail value sales of hypermarkets fell by 13% to NGN56 billion and similarly, that for department stores fell by 12% to NGN67 billion during 2020 during 2020 (Passport, 2021). This could be attributed to many of these hypermarkets and departmental stores located in the larger city shopping malls, and these were particularly

affected by restrictions on movement during the early stages of the pandemic. Figure 1-7 shows an example of a mega mall in Lagos, housing major brands such as Tommy, Samsung, Mini So etc. The non-stored based retail channel continues to see the growth in popularity of EC, as mobile device ownership including smartphones continues to grow; investment in internet retail increases. Online retail is experiencing continued growth with major online platforms such as Jumia and Konga dominating the market. According to Euromonitor International (2020), the impact of Covid-19 led to a significant slowdown in overall retail sales, as a result of disruption to the supply chains, deliveries and physical store lockdown. However, the eCommerce retail sales value rose slightly by 4% to NGN125 billion during 2020, with Jumia Technologies AG leading the sector with a 64% market share. The slight increase was led by mobile sales with two-thirds of EC sales driven via mobile device, with an increase of 7% to NGN 82billion during 2020. However, when compared to MC, retail sector sales only represent less than 1% of sales in 2020 and forecasted by 2025 to only represent 1.14% of total sales as shown in Figure 1-8. These statistics don't make for good reading, even with the increased popularity of food delivery apps such as Jumia foods, Pizza hut and Chicken republic (Euromonitor International, 2020). The growth could be attributed to the growing population of tech-savvy millennials and young adults, more likely to use their phones to purchase goods and services. So, more needs to be done by retailers to buck this trend, with potential to expand MC by making customers more comfortable to shop and make purchases on their device.

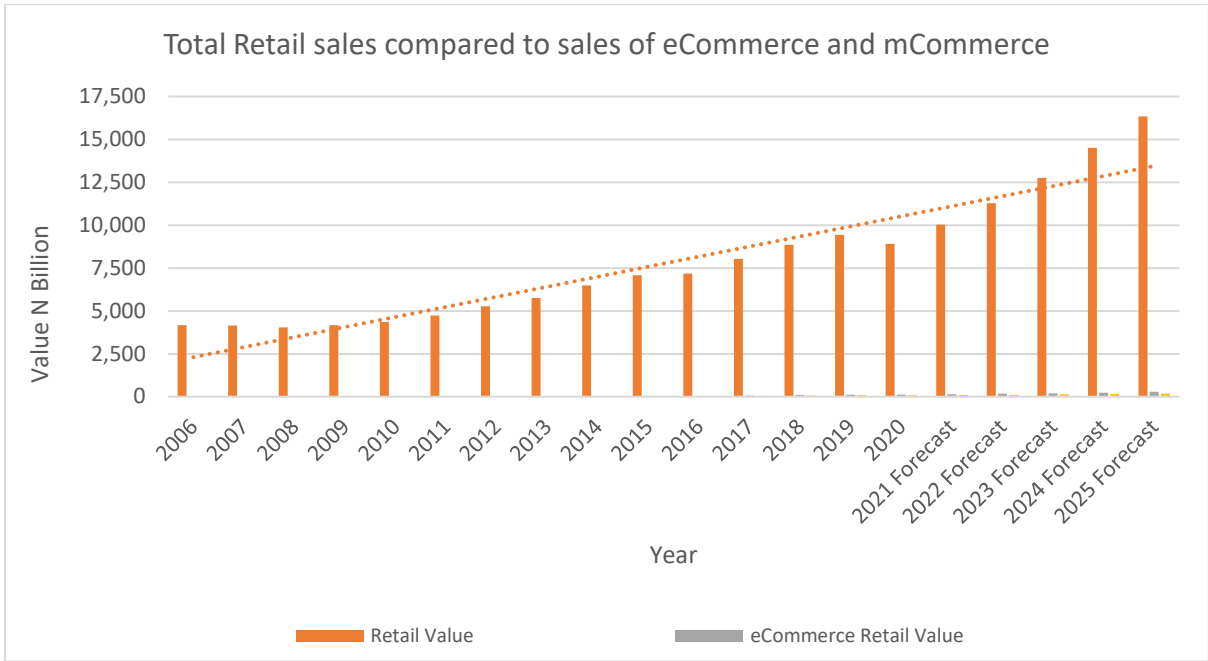


Figure 1-8: Market Size: Nigeria Retail sales (including EC and MC) 2006 – 2020; 2021 – 2025 Forecasts

When examined within a global context and compared (actual sales) to other regions, we can see from Figure 1-9 that Sub-Saharan Africa (including Nigeria) is lagging behind compared in terms of MC related sales. This further supports the case to bridge the digital divide through MC adoption within the retail sector in Nigeria.

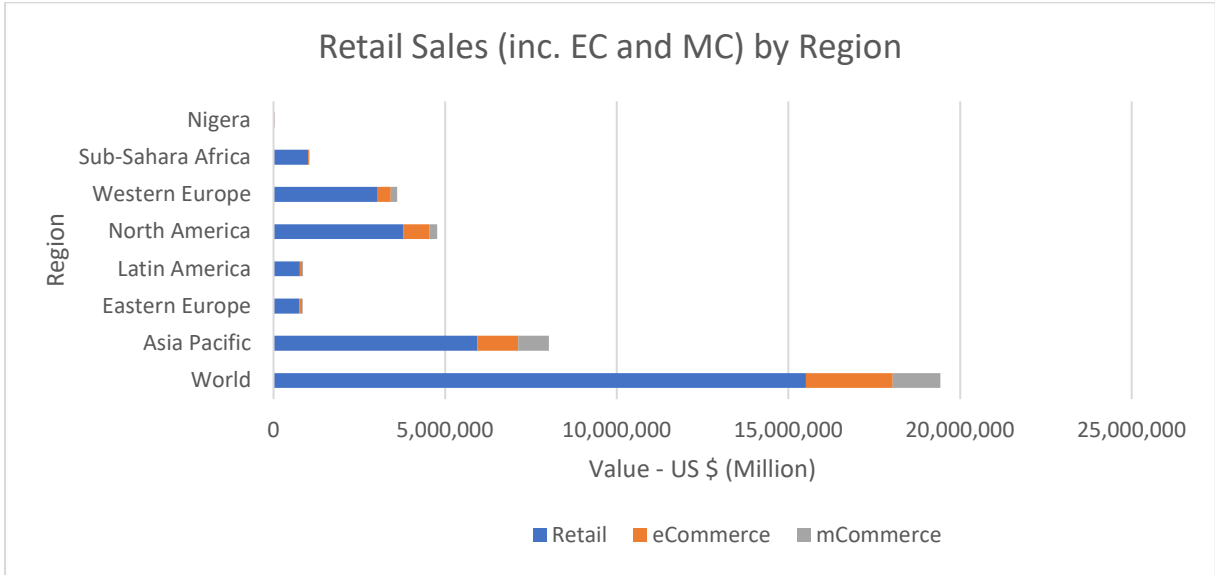


Figure 1-9: MC and EC sales by region - 2020 (\$USD Million)

1.1.2.3.2. Opportunities and challenges facing Nigeria retail

Opportunities in the retail sector has seen a retail market resurgence in recent years, following the growth in consumer spending fuelled by population growth and the rise in middle class which accounted for 30% of the population (Ncube et al., 2011) as well as more sophisticated shoppers. The introduction of cash-less economy is encouraging more digital forms of transacting. The Government backing of the Consumer Protection Act introduced on 5th December 2018 aimed to protect the rights of consumers (Udofa, et al., 2018) can further foster B2C relationships.

The retail trade (excluding wholesale) contributed an estimated 8.920T Naira in GDP in 2020 to the economy, showing a %CAGR of 4.6% from previous years. This can be attributed to the rise in mega stores, malls, multibranch stores and the growth in online retail across major cities in the country. The adoption of e-payments by retails following CBN guidelines on Point of Sale (POS) card acceptance services and awareness for a cashless society. Evidence shows a slight shift in dial from a fragmented shopping to a tiered retail ecosystem.

Some of the challenges Nigeria needs to address, in fostering innovative technology environment, is its incessant power outages, meaning that organisations have to rely on alternative sources of electricity to run their business and IT infrastructure. Although there has been moves towards mobile broadband networks, the rate of access to high-speed internet connectivity (4G and 5G) is lower in Nigeria compared to developed economies (GSMA, 2020). 3G or 4G comparable network speeds are typically only available in larger cities of Nigeria. Another challenge facing businesses include the access to finance and provision of affordable mobile broadband services. Part of this has been recognised by the Government issuing a directive, by the NCC in November 2016, mandating these larger mobile operators to decrease mobile data tariffs.

Other issues affecting business climate is that of insecurity and safety of the citizens, which has been a key area of concern for the Government following the advent of Boko Haram⁸ and its insurgence in the Northern part of the region. Also, the growing threats of Fulani herdsmen attacks have significant impact on the socio-economic development of Nigeria (Davidson, 2019). Other challenges that have continued to hold down the growth of the economy especially operators in the retail segment, include harsh business environment, inability to access capital at affordable rates, lack of access to sizeable land in the right location and multiple taxation among others. These challenges are also faced by offline retail, with some creating potential opportunities for MC to thrive.

1.2. Problem statement

Businesses can no longer afford to ignore MC especially in developing economies like Nigeria where majority of the population has grown up on mobile device and overlooked the personal computer (PC) technology due to lack of home broadband and landline network access. Smart phone penetration rate in Nigeria is expected to reach 75% by 2025. The highest in the Sub-Saharan continent.

Studies on MC adoption have been considered either from the context of an individual (Wu & Wang, 2006; Maity, 2010; Ajax and Irfan, 2012) or an organisation (San-Martin et al., 2012; Winnie et al., 2014). These studies rarely provide a holistic view by examining the adoption process and user acceptance of MC across the B2C value chain. The mere adoption of MC does not necessarily imply that the innovation is adding value to the organisation. Instead, the innovation must be incorporated within the organisation, ensuring continued use by consumers to realise the anticipated benefits of its innovation (Hameed et al, 2012). Thus, pointing to the untapped potential of MC technology innovation.

The Nigerian retail sector has witnessed significant growth in consumer spending fuelled by population growth and the rise in middle class that accounted for 30% of the population (Ncube et al.,

⁸ Extremist Jihadist group creating terror and insurgence across the North Eastern part of Nigeria. Boko Haram translates as “western education is forbidden”.

2011) with customers that are more sophisticated shoppers. The retail trade alone contributed an estimated \$25,210 million in GDP in 2020 to the economy, with MC accounting for less than 1% at \$230 million (Euromonitor International, 2020). One view is that this growth is attributed to the rise in mega stores, shopping malls, multibranch stores, however supported with also a growth in online retail across major cities in the country. However, the MC contribution to overall online retail is significantly lagging behind and shows great potential. Notwithstanding, the environmental challenges (for instance, the lack of infrastructure, electricity shortages, poor rail and road networks, traffic etc.), adding to the cost of doing business, Nigeria is seen to be a compelling proposition for investors, given her large population estimated at 206 million (IMF, 2021).

So, the research posits that these problems are central to the value proposition of MC within the Nigerian retail sector.

1.3. Aims and objectives of research

The overall aim of the study is to expose the antecedent factors to MC retail adoption and consumer acceptance, highlighting its value creation potential within the Nigerian B2C retail sector. To this end, the research objective is summarised below.

Objectives:

1. To review the literature exposing the scope, main themes and theoretical perspective of MC adoption studies in the retail sector.
2. To examine the MC adoption process, identifying factors influencing organisational adoption and identifying potential MC value outcomes (if any), within the Nigerian B2C retail context.
3. To Identify factors influencing customer MC adoption behaviour intentions within the Nigerian B2C retail context
4. To develop an integrated conceptual framework and enable a holistic approach to MC adoption from both the business and consumer's perspectives.

1.4. Research questions

Based on the research objective in section 1.3, the following research questions have therefore arisen:

1. What are the determinants of Organisations MC adoption intention in the Nigerian B2C retail sector?
2. What are the potential drivers influencing perceived customer value and MC adoption intention and how significant are they in the Nigerian B2C retail sector?
3. To what extent can Nigerian retail organisation leverage MC to create customer value and positively impact organisational performance?
4. How can an integrated conceptual framework be developed as a holistic approach to explain MC adoption from both the business and consumer's perspectives?

The research proposition stipulates the following:

- The greater the match between *organisations assumed customer value* and *customer perceived value* of MC adoption, the more likely *customers' acceptance*.
- **Organisation adoption** of MC, has the potential to *create customer value, enhance organisation performance and drive economic growth*.

1.5. Research purpose and contribution

1.5.1. Purpose

The researcher's interest in MC adoption studies stems from the growing influence digital technology such as MC seemingly has on transforming individual, business and overall economic dynamics globally. The ongoing digital transformation through increased adoption of mobile technologies is resulting in the creation of global markets linking buyers and sellers together while defining new ways of transacting across channels through value offering, value creation and value delivery (Goyal, et al.,

2017). Customers are becoming more demanding and looking for new ways of enhancing their retail experience. Organisations are having to look at innovative ways of meeting the needs of their customers. Organisations need to consider new and sustainable business models (Oderanti, F.O. and Li, F., 2016), aimed at supporting customer MC adoption and acceptance. However, evidence from the literature suggest there is a huge gap regarding MC adoption and growth between developed economies and developing economies like Nigeria. MC adoption studies especially at organisation level in certain regions is still at a nascent stage, with most studies concentrated on developed economies across Europe, Central and East-Asia and North America.

The understanding of empirical factors influencing MC adoption by retail providers and their customers within the Nigerian context, hold significance as an important area of enquiry. Analysis of the literature has shed light on MC adoption and acceptance theories, like Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975), Theory of Planned behaviour (TPB) (Ajzen, 1985), models and frameworks on individual consumer adoption behaviour Innovation Diffusion Theory (IDT) (Rogers, 1985), Technology Acceptance Model (TAM) (Davis, 1989), TAM2 (Venkatesh and Davis, 2000) and mixed conceptual frameworks around organisation technological factors; Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) and Diffusion of Innovation (DOI) (Rogers, 1995) and Technology – Organisation – Environment (TOE) (Tornatzky & Fleischer, 1990).

The purpose of this empirical study seeks to enhance the body of knowledge, by presenting researchers with a new and novel way of exploring MC adoption theories across B2C. It introduces a fresh perspective on MC adoption, building on theories and constructs through the development of a multi-level holistic framework for organisations adoption and individuals' acceptance. It also aims to present practical direction for retailers, practitioners, government and other stakeholders by presenting findings and recommendations of Nigerian MC retailers' adoption and consumer acceptance.

1.5.2. Contribution and significance

The research contribution to theory and practice is highlighted in the following areas:

First, the study presents an updated state of MC adoption perspective across regions, economic classification, methodological and theoretical lens. Significance lies in elaborating the broad perspectives and statistical overview of the selected literature; including related research themes, methodology, and locations. The level of disparity in cross regional studies is important to identify under-researched geographies.

Secondly, since the phenomenological inquiry into MC adoption is not new and has been applied in different business domains from retail, financial technology, health care and schools, the research aims to build on and extend the value-based adoption model (VAM) and TOE theory by expanding beyond the benefits and sacrifice model and exploring “Other” organisational factors respectively, providing specific insight into individual and organisation level adoption within the Nigerian context.

Thirdly, by presenting a holistic multi-level adoption framework, the study offers contributions to organisations seeking to adopt MC as part of their business model and expands on the number of organisation MC adoption studies.

Fourthly, to present a holistic approach to MC adoption framework from both organisation and consumer perspectives through the development of a joint display in a mixed methods case study research using its value-based Technological, Organisation, Customer (TOC) model⁹. The use of a circular joint display has been described as “innovative” as the joint displays connects empirical results to theoretical models (Fetters, et al., 2013), determinants and value potential of MC adoption across the B2C retail value chain.

Finally, the mixed method technique (i.e., utilizing joint display) deployed for this study is innovative because it allows for a better understanding into how value plays a pivotal role in influencing

⁹ TOC model is inspired from the joint display using the TPACK model (Bustamante, 2019)

organisations MC technology value proposition, customer value perception of MC and value outcomes. The discrepancies between customer MC value expectation and organisations value offering, allows management to pay attention to the gaps (possible areas of expansion) to improve their overall MC value offering and business model. For practitioners, the level of concordance between the organisation and customer perspective on MC innovation, identifies important business process, policy and regulatory considerations. Additionally, consideration of the results of these studies can influence the general retail and economic environment in Nigeria.

1.6. Research methodology and design

This study adopts a pragmatist philosophical paradigm. The investigation is split into three sections as defined in the conceptual framework. The first part quantitatively examines whether the six dimensions of individual antecedents to adoption; innovativeness, customer involvement, trust, perceived benefits, perceived costs and perceived value influence customer adoption intention behaviour. Secondly, by applying a deductive approach, the study qualitatively explores whether the three major constructs; Technology, organisation and environmental factors influence organisation adoption intentions in Nigeria. Finally, applying a mixed methods design, the research examines how a MC value-based model influences the consumer and organisation adoption intention and value outcomes in Nigerian B2C.

1.7. Research outline

The research outline follows the case for MC adoption offering a unique opportunity to consider consumer and organisation behavioural adoption intentions within the context of retail sector; it is however, situated in the wider context of the Nigerian environment and its complexities of doing business within a developing economy.

Chapter one sets the scene of the study by describing the case for MC adoption and acceptance within the Nigerian B2C retail sector. It presents the research and localization context, laying out the problem statement of 'MC adoption' (Rogers, 2003) phenomenon and its value creation potential (Ngai &

Gunasekaran, 2007; San-Martin, et al., 2016; Liébana-Cabanillas, et al., 2017). It puts the whole inquiry into context by outlining the research purpose, aims, objectives and research questions having identified relevant literature research and methods to be employed to deliver on the objectives.

Chapter two critically analysis MC adoption literature. It defines MC and critical examines MC adoption studies by region, as well as methodologies and theories applied in MC adoption research. It considers the MC innovation (Christensen, et al., 2016) and how it impacts an organisations business model (Teece, 2010; Osterwalder & Yves, 2010). The chapter critically assesses the organisation level adoption intention theories and individual level adoption intention theories and variables following a systematic literature review (Kitchenham, 2004).

Chapter three presents the theoretical framework that underpin the study. The formation of a conceptual framework, suitability of MC adoption within the context of the business model, examination of MC as a technology innovation, business level adoption factors (business capability), consumer level adoption factors (consumer segment) and the business value flows from value proposition, value perception and value expectations are presented.

Chapter four describes not only the research methodology used, but also the challenges of carrying out field research in Nigeria within a case study approach. The chapter explains the pilot study and explores the various research methods adopted in developing particular insights into aspects of organisation adoption and consumer acceptance. The data collection approach is specified, followed by tools and techniques used to analyse the qualitative and quantitative data, the mixed methods approach used to integrate data. The research limitations and ethical considerations are considered.

Chapter five provides a critical analysis of the 392 quantitative customer survey results. First a descriptive analysis of the respondent's statistics is presented, followed by an assessment of the level of reliability and validity of the data. The research hypothesis of the MC adoption variables from the individual customer perspective is then tested to determine the level of significance of the structural model. A discussion on the finding is then presented as well as implications for practice and theory.

Chapter six presents a thematic analysis of the qualitative findings of the 13 organisations used in the study. The chapter further examines organisations MC adoption intentions, the classification of MC applications and process of adopting these applications by the retail organisations in Nigeria. The chapter then goes on to present the antecedent factors to MC adoption analyses including elements of customer involvement, customer co-creation and MC adoption outcomes.

Chapter seven examines the evidence from the mixed methods case study by applying a joint display analysis (JDA). The level of MC market fit, the technology value proposition, the trust level mechanism, the level of MC value co-creation fit as well as the level of value expectation to value realization fit between the organisations and its customers is discussed. The chapter presents an assessment of the meta-inference findings and an in-dept explanation of the results from the joint display.

Chapter **eight** provides a concluding end the MC adoption research in Nigeria. It highlights the contributions to theory, implication for practice, limitations and recommendation for future studies. It also presents the researchers learning, reflection and reflectivity.

1.8. Summary

This section provides the research background, highlighting the problem statement. It summarises the aims, objective and research question. It highlights the research purpose, significance of this study and the contributions of the research to existing literature and practice. It outlines the research topics that readers can expect in the following chapters.

Chapter ends

Chapter 2: Literature review

2.1. Introduction

This chapter critically analyses the literature drawing upon an initial systematic review of peer reviewed publications from 2000-2017 to establish a conceptual framework for the research, and further built on additional literature to support an understanding of the past trends and future directions of MC in the global business landscape. The literature review forms part of a continuous process, while building evidence from reliable sources comprising academic research papers, empirical studies and peer review papers.

The section starts with the definition of MC appropriate for this study and a breakdown of MC applications, followed by a summary of the systematic literature review (SLR) of MC adoption in retail. The section ends with a thorough examination of the reasons why organisations choose to adopt MC as part of their business model, including a review of factors that influence organisation adoption and individual MC acceptance.

2.2. Mobile Commerce (MC) definition

Definitions of the term MC refers to the ability to conduct wireless commercial transactions anywhere using mobile applications in mobile devices (Shih and Shim, 2002; Yang, 2005; Ngai and Gunasekaran, 2007a). Many scholars suggest MC means not only mobile device communications but also the infrastructure that supports both devices and enterprise applications (Shih and Shim, 2002) as well as any transaction (such as data entry and purchasing) or content delivery (such as reporting or notification) with monetary value that is performed through mobile network and device (Clarke, 2008). This implies the need for its ability to support consumer engagement, and social interactions, not solely the transactional aspects; as savvy consumers are now using their mobile devices to support the buyer decision-making process from pre-purchase research to post use.

Various scholars have viewed MC an extension of EC, which is online retail (Kurkovsky, 2006; Li and Lv, 2007; Chong et al., 2012) but it also has been viewed by some to be a subset of EC (Ngai and Gunasekaran, 2007b). While some of the features are similar, there are differences in terms of the number of users that have access and its (anywhere, anytime) ubiquitous nature. MC is somewhat distinct from EC. MC is more than just a simple evolution of EC but fundamentally different (Zhang, et al., 2012). MC has also served as a trigger for new industries and services, or helped existing ones grow, including: mobile money transfer, mobile banking, contactless and mobile payment applications, location-based services, mobile marketing, augmented reality and more.

The adoption of MC can serve as a basis for value creation in any economy. A working definition for this research is therefore adopted as:

MC is information and economic exchange by means of mobile internet and wireless connectivity, supported by mobile devices and connected applications anywhere and at any time used to facilitate commerce.

The next section provides an overview of MC information and economic exchange related applications.

2.2.1. Mobile commerce application

The first MC technology was delivered in 1997 when the first two mobile-phone enabled Coca-Cola vending machines were installed in the Helsinki area in Finland. The machines accepted payment via SMS text messages. This evolved to other services such as the first mobile phone banking service launched in 1997 by Merita Bank of Finland (now Nordea) using SMS. In early 2000's (Wireless Application Protocol) WAP-enabled mobile phones was launched that offered business the opportunity to interact with their customers through email, multimedia messaging service (MMS) (combination of WAP and SMS). Since the launch of the iPhone in 2007, MC has evolved further from SMS systems and into actual applications.

The usage of MC applications has been classified by different scholars such as Varshney and Vetter, 2002; Mahatanankoon et al., 2005; Ngai and Gunasekaran, 2007. Mahatanankoon et al. (2005) used confirmatory factor analysis (CFA) to validate the five classifications of mobile applications into: content delivery, transaction based, location based, emergency assisted and entertainment applications. Similarly, Li et al. (2008) proposed four classifications of wireless web services: communication, transaction, information and entertainment services; with entertainment and communication scoring highly and transaction services scoring low in adoption and use. Findings from the studies reveal similar classification with a focus on retail and identifying any advancements in new retail related MC applications (see Table 2-1). Applications relates to mobile communication, decision support applications, content delivery, mobile payment application, location-based applications, mobile shopping, mobile marketing, advertising, social network, entertainment activities, mobile shopping assistants. However, other applications that extended this classification include mobile Customer Relationship Management (mCRM) that utilises mobile media for the purposes of managing customer relationships (Lee and Jun, 2007) and Mobile Supply Chain Management (mSCM) that uses wireless devices, sensors, positioning locators to enhance existing supply chain mechanisms (Youqin et al., 2013).

Table 2-1: Classification of MC applications

MC Applications	Examples	References (Authors)
Mobile communication	<ul style="list-style-type: none"> • send and receive SMS • send and receive multimedia messaging service (MMS) • send and receive emails • Receiving time sensitive information (e.g., discount tickets, sales, financial information, etc.) 	(Mahatanankoon, 2007; Li et al., 2008; Emmanuel and Muyingi, 2010; Chen et al., 2011; Shareef et al. 2017)
Decision support applications	<ul style="list-style-type: none"> • application to help consumers make decisions on perceived ethical value • persuasive technologies 	(Chong et al. 2012)
Mobile payment	<ul style="list-style-type: none"> • Electronic payment in physical store • financial transactions between consumers and businesses 	(Chen et al., 2011; Chung and Holdsworth, 2012; Chan and Chong,

MC Applications	Examples	References (Authors)
	<ul style="list-style-type: none"> classified into proximity payment or remote payment mMoney as a form of mobile-enabled localised banking payment system mobile wallet and Near field communication (NFC) credit card payment readers Point of sale (POS) mobile payment services Closed loop payment app e.g., Starbucks app, carrier billing e.g., text to pay; card readers e.g., Square 	2013b; Moshkovich, 2013; Emmeline, 2016; Apanasevic et al., 2016; Köster et al., 2016; Osakwe and Okeke, 2016; Hillman and Neustaedter, 2017)
Content delivery (Information searching)	<ul style="list-style-type: none"> Searching for specific information on internet, using search engine Using MC to surf and search for information online Performing mobile search 	(Mahatanankoon et al., 2005; Chen et al., 2011; Chung and Holdsworth, 2012; Chan and Chong, 2013; Murillo, 2017)
Location-based applications	<ul style="list-style-type: none"> Receiving location sensitive discount tickets Tracking the location of products and services Global positioning system (GPS) Location-based promotions Location-based mobile coupons 	(Lu and Su, 2009; Chen et al., 2011; Persaud and Azhar, 2012; Kiseol and Hye-Young, 2012; Chan and Chong, 2013a)
Mobile shopping	<ul style="list-style-type: none"> Shopping for goods on the internet buying products from physical shops shopping through MC retail applications or “mobile apps” M-shopping services on websites Mobile sales comprises m-retailing, m-ticketing, m-reservations and m-auctions information based (i.e., product availability for pickup) and transaction based (i.e., shop, place an order, make purchase 	(Mahatanankoon et al., 2005; Yu-Jen, 2009; Kiseol, 2010; Chen et al., 2011; Kiseol, 2012; Kiseol and Forney, 2013; Wang et al., 2015, David and Michael, 2014; Huang et al., 2016; Parker and Wang, 2016; Natarajan et al., 2017)
Mobile advertising or marketing	<ul style="list-style-type: none"> Receive personal advertisement Receive personalised offers Branded mobile applications Mobile marketing through sending SMS Social media marketing via social networking sites, such as Facebook, Twitter and YouTube Permission based mobile coupons based on SMS and MMS M-coupon apps 	(Chanaka et al., 2009; Laurent et al., 2016; Shareef et al., 2017; Zegrean and Paraschiv, 2013; Persaud and Azhar, 2012; Saman et al., 2015; Liu et al., 2015; Gyaneshwar and Shiv, 2016; Maduku et al., 2016)

MC Applications	Examples	References (Authors)
	<ul style="list-style-type: none"> • Mobile marketing initiatives via SMS, tele calling and wireless access protocol (WAP) • Quick response (QR) codes in mobile marketing 	
Mobile Customer Relationship Management (mCRM)	<ul style="list-style-type: none"> • Utilises mobile media for the purposes of managing customer relationships • Contextual marketing based on user profile, location, and time 	(Lee and Jun, 2007; Jaakko et al., 2007)
Mobile Supply Chain Management (mSCM)	<ul style="list-style-type: none"> • Uses wireless devices, sensors, positioning locators to enhance existing supply chain mechanisms while enabling efficient business processes 	(Youqin et al., 2013)
Shopping assistant	<ul style="list-style-type: none"> • Mobile shopping cart (MyGrocer) • Product Identification using Barcodes or Radio Frequency Identification (RFIDs) • Security and tracking using RFID-enabled security antenna 	(Kiseol, 2010; Roussos et al., 2003; Taylor, 2016)
Social networking	<ul style="list-style-type: none"> • send instant messages; share information, photos, videos and news; and build interpersonal relationship • Mobile Social Networking sites (mSNS) 	(Chua , et al., 2018) (Lin & Lu, 2015)

2.2.1.1. Mobile marketing applications

This relates to mobile based promotional tools to deliver on strategies and tactics that organisations adopt to encourage commercial and retail activities. Brand managers are increasingly seeing MC as a means of interacting with their consumers (Peng, 2012). To keep up with ever-demanding consumers' needs, retailers are finding ways of engage, communicate and interact with customers by utilising mobile features and applications that include:

SMS and MMS mobile messaging

SMS is used to send notifications and alerts, to an individual or specific group of people via an SMS broadcast. The information communicated is considered important to both the organisation sending the message and the individual receiving it (Ovum, 2017). For example, a retailer can use SMS to notify its customers of road closures or disruptions around their store. SMS has also been used to promote organisations product, offerings and price reductions. For example, SMS can be used to send

notifications of time-dependent special offers, new product alerts, end of season sales, or product availability alerts. This strategy is usually targeted at individual consumers, based on their previous buyer behaviour or where they have willingly supplied the information. However, care must be applied while adopting this as a mobile marketing strategy as the perception of unsolicited messaging could be deemed unwelcoming, intrusive, considered as spam in some quarters and seen as a threat to personal privacy. On the other hand, well-targeted messaging campaigns to opted-in mobile users can be highly effective by engaging customers personally through one-to-one mobile communication with its reach and reliability. Increasingly, SMS is being used as the second element for two-factor authentication (2FA) for more sensitive actions, such as sign-up and password and username reminders and resets. This has been adopted by banks and financial institutions even in Nigeria as a means of authenticating financial transactions such as bank transfers.

The extent to which consumers in developing economies will accept mobile marketing efforts remains unclear. The validity, source and trustworthiness of a message through a mobile device is crucial for its effectiveness (Shareef et al. 2017). Practical experience shows that mobile users have been bombarded by mobile carriers and advertisers with communication on the latest mobile network tariff offerings to daily religious information.

[Quick Response \(QR\) codes](#)

The use of QR codes is a means of providing mobile users with relevant information as quickly and seamlessly as possible. The QR code is a matrix bar code that lets the user scan, interpret and reads a code using their smartphone device and takes the necessary action. It therefore links the offline world to the mobile device (Turban et al. 2015). QR codes can be used to store quite an amount of information such as embedded text, advertisement, personal information, business card, URL address or other digital information. For example, a QR code on a product can lead to a promotional offer, a chance to win a prize or provide educational information about the product or service.

Studies over its effectiveness as a mobile marketing tactic seem to vary, especially in Europe and the West, which suggests that organisations are shifting away from adopting the QR code and looking at other mobile marketing tactics (Turban et al. 2015; pg. 225). Demir, et al. (2015) in their study, examined the usage level and future intent of use of QR codes among students in Turkey and concluded that although the recognition level was high, the adoption level was low. The extent to which retail organisations and their customers are looking to adopt and accept the use of QR codes in economy like Nigeria is considered.

Over-the-top (OTT) communication

Increasingly, there is a growing trend in OTT services, “chat apps,” or “chat bots” including WeChat, WhatsApp, and others in terms of users and traffic. Chat apps are beginning the transition from informal, person-to-person communications to customer gateways and engagement tools that can support monetizable content and commerce, money transfer capabilities (Ovum, 2017). By integrating messaging into business processes, this reduces costs and enables staff to deal with more in-depth enquiries. Also, the relevant audit trail between communication with the customer is maintained. This research will examine the extent to which retailers and customers are looking to adopt OTT communication services.

Mobile social media commerce

The rise of social media is driving real EC with Facebook, WeChat, Weibo, WhatsApp and Pinterest to name a few. According to digital marketing magazine, 74% of customers rely on social media to guide their purchasing decision (Schillaci, 2015). Supported by ODM group study (Garvin, 2019). which found that 60% of consumers interacted with the brands they buy from. The Social Media Advertising market is set to expand further with worldwide revenue of US\$89.5 billion in 2019 and growth to US\$138.4 billion in 2025 (Statista, 202). Evidence therefore suggests that social media should make up an integral part of any organisation’s approach, for a truly efficient MC strategy.

2.2.1.2. *Mobile payment systems*

Mobile payments are payments made using a mobile device as a payment instrument (Apanasevic et al. 2016). A more precise definition of mobile payment is any transaction in which a mobile device is used to initiate, authorise or confirm an exchange of financial value in return for goods or service (Au and Koffman, 2008; Blochlinger, 2012; Taylor, 2016). The technology to deliver mobile payments can be categorised into two: remote m-payments and proximity payments (Agarwal et al., 2007; Taylor, 2016). Remote payment requires customers to register for a service and use it in their mobile device to pay for an item for example PayPal or Skrill Google Pay. Whereas proximity mobile payments require near-field communication (NFC) and for the customer to present their mobile device in order to complete a transaction for example, Stripe, Apple Pay, Samsung Pay or Android Pay.

Taylor (2016) in her study of mobile payment technologies in retail, considered the benefits including the potential to making checkouts simpler, faster and cheaper. She identified benefits to the customer to include hedonic and convenient shopping experience and the retailer to include margin improvements, increased conversion, enhanced loyalty and real-time analytics. However, issues of security and interoperability were identified as barriers to adoption.

Near Field Communication (NFC)

NFC allows two devices (a phone and a payments terminal) to communicate to each other when in close proximity. There is therefore no need to reach out for cash or card payment. Tan et al (2014) studied the determinants of NFC-mobile based credit card adoption. Pham and Ho 2015; Ramos-De-Luna et al. 2015 studied the benefits of NFC-based mobile payments to include: convenience of speed of transaction payment, security, its scope and availability worldwide as well as economical attraction as users don't have to pay a license fee since it is based on open standards.

In Nigeria, the adoption of NFC payments is still at its infancy. Relatively low credit card ownership in developing economies may be a contributory factor in enhancing the adoption of payments via a

mobile device. This research will examine the extent to which retailers and consumers alike are looking to adopt and use NFC as a mobile payment.

Mobile wallet

A mobile wallet is a way to carry credit card or debit card information in a digital form on a mobile device. Instead of using the physical plastic card to make purchases, users can pay with their mobile device. There is an increased growth in adoption of mobile wallets with Juniper Research predicting that nearly 2.1 billion consumers worldwide will use a mobile wallet to make a payment or send money in 2019, up by nearly 30% on the 1.6 billion recorded at the end of 2017 (Smith, 2018). Mobile wallets can use NFC or QR code-based technology.

Despite the inherent benefits of mobile wallet technology, the number of actual users of this service has remained low (Agarwal, 2016; Madan and Yadav, 2016). The problem lies in the attitudes and intentions of the customers. Shen (2015), Madan & Yadav (2016) and Taylor (2016), suggests that PIN-based authentication with mobile wallet was found to have stronger appeal with customers. The presence of regulatory support has a role to play in boosting consumer confidence and functioning of the overall mobile wallet eco-system (Madan & Yadav, 2016). The extent to which retail organisations and their customers are looking to adopt and accept the use of mobile wallets in Nigeria will be considered as part of the research.

Mobile Money (mMoney)

mMoney is a technology that allows people to receive, store and spend money using a mobile phone. According to WorldRemit, there are more than 260 different mMoney services around the world, although they are most popular in Africa, Asia and Latin America. Examples of mMoney services include mPesa, EcoCash, GCash, TigoPesa. By downloading a mMoney app, users can transfer funds to another user or make in store payments using their mobile device. It enables users to access their money anywhere and at any time without the need for a traditional bank account, and can provide financial inclusion for the low-income masses. Users without retail bank accounts, 'the unbanked' are

thus provided with access to financial services they would not otherwise have (Llewellyn-Jones, 2016). There are two main approaches to mobile money services: bank-led model and non-bank (network system operator) model.

Llewellyn-Jones (2016) of the Institute of Economic Affairs suggested there was less penetration in the adoption of mMoney in Nigeria with 0.8m adults using it as at a 2014 survey. Supported by Osakwe and Okeke (2016), who explored factors influencing mobile money usage in Nigeria, showed that 73.2% of 127 respondents were yet to use mobile money services. They opine that regulatory support will go a long way to reinforce trust in the mMoney ecosystem. This research will be examining the extent to which retailers and customers will accept the use of mMoney applications.

2.2.1.3. Location-based Services (LBS)

Knowing the location of consumers can allow retailers to offer location-based services such as sending time sensitive discounts, personal advertisement and marketing messages (Chang and Chong, 2012; Persaud and Azhar, 2012). Persaud and Azhar (2012) submit that context and personalised marketing especially with customers who travel frequently or live busy lives. Its value includes the ability to reduce search cost, increase convenience and promote overall shopping efficiency. Benefits of location-based services to the business include store locator in which consumers can quickly find the nearest store location, proximity-based marketing to push ads to potential customers within the local area. Some location-based services are considered below.

Geo-location / GPS technology

Using smartphones equipped with Global Positioning System (GPS) enables customers to obtain relevant information based on their current location and context. Retailers can detect the exact location of the consumer via GPS capability and send digital signals to the consumer (Im and Ha, 2015). Where GPS is enabled, it automatically collects personal data and provides consumers with automatic recommendations. Consumers using GPS enabled smartphones however, have reported concerns of privacy invasion (Xu et al, 2011). The user adoption of GPS is considered more favourable if users “pull”

information about a product or brand as against “push”, without any user input or predictable routine except where the user ‘opts in’ to the service. A user might evaluate this behaviour to be suspicious and untrustworthy. However, when retailers offer timely location and context-specific services, customers consider the services useful and ease of use (Lee et al., 2009; Choi, 2018).

Mobile beacons

Another growing location-based service is the use of short-range positioning beacons typically employing Wi-Fi¹⁰ or Bluetooth¹¹ technologies, ideal for indoor LBS applications. Apple using the latest sensor-based technology, introduced the iBeacon powered by Bluetooth low energy (BLE) in 2014 (Abhishek and Hemchand, 2016).

2.2.1.4. Mobile shopping (mShopping)

Using a Web browser on a mobile device, means customers can shop online without having to be at their personal computer. Some retailers provide mobile web sites that are customised for the smaller screen and limited user interface of a mobile device. Mobile plays a critical role in driving shoppers in-store (Lawson, 2016). Shoppers now reach for their smartphones in what google terms a “micro-moment”, from I-want-to-know, to I-want-to-buy (and crucially, I-want-to-buy-again) moments. MC success hinges on customer willingness to adopt new technology (Shang & Wu, 2017).

Holmes et al. (2013) in their study observed that consumers are more positive towards shopping through websites as compared to mobile phones and prefer mobile phone in the information search process as compared to actual purchase. This is contrary to other scholars suggesting mShopping services can offer the benefits of acquiring an optimal shopping experience through seamless shopping transactions across channels (Yang, 2010). It is said to also influence customer’s purchase behaviour from order size, order rate, frequency and spend value (Wang, et al., 2015). The extent to

¹⁰ Wi-Fi (/ˈwaɪfaɪ/) is used to represent a family of wireless network protocols, based on the IEEE 802.11 standards, which are commonly used for local area networking of devices and Internet access, allowing nearby digital devices to exchange data by radio waves (Wikipedia, 1998).

¹¹ In 1996 Bluetooth technology become the global standard for short range wireless connection.

which retail organisations and their customers are looking to adopt and accept the use of mobile shopping in Nigeria is to be considered.

This research posits that the more customers utilise mobile devices and its associated applications because of the “anywhere” “any time” convenient access, will lead to incorporating MC into their habitual routines. Therefore, organisations should look to fully leverage their mobile platforms. The next section examines what the literature says regarding such adoption.

2.3. Systematic literature review of MC studies (2000 – 2017)

The pre-literature review started with the identification of need for research, following the review of 11 SLR papers (refer to appendix 10.14 for full details of the SLR). A research protocol was then defined to systematically review the literature broken down into three phases (plan, conduct and document) as proposed by Kitchenham et al. (2007) - see Figure 2-1. The following online databases was accessed to identify articles with MC adoption in retail as the focus of the study: Business Source Complete, Emerald, Scopus, IEEE, ACM digital library, Science Direct, SAGE, Springer Link and Directory of Open Access Journals.

The search terms comprised of: mobile commerce, mobile market, mobile shop, mobile retail, adoption, post-adoption, acceptance, customer experience, mobile experience, user experience, cost, benefit, outcome, value, performance. This search generated 639 papers. The following inclusion and exclusion criteria were applied:

Inclusion criteria:

- Only peer reviewed journals written in English
- Only empirical researched articles that explores m-commerce adoption and usage from the perspective of the retail organisation or/and consumer perspective
- Date inclusion - journals from 2000 (with the advent of 3G and smart phones) to 2017
- Geographic location of study must be explicit

Exclusion criteria:

- Duplicates across research databases
- Non-retail related use of mobile technology (i.e., health care, agriculture, banking, etc.)
- Excluded based on availability of the study (i.e., articles with little or no access)

185 relevant articles were identified. Following quality assessment, 90 studies were selected. The review analysed how MC studies has developed over the years, underlying research themes, different theoretical frameworks and models used to explain MC adoption and use from both organisation and consumer perspectives.

A summary of the thematic data analysis (Bryman, 2016; p. 584-598) performed on the selected papers are presented. Refer to Appendix 10.10 Snapshot from Systematic Literature review for details of the main themes identified following the systematic literature review: publication studies, classification of MC studies by regions, economies, research methods and theories used in the studies.

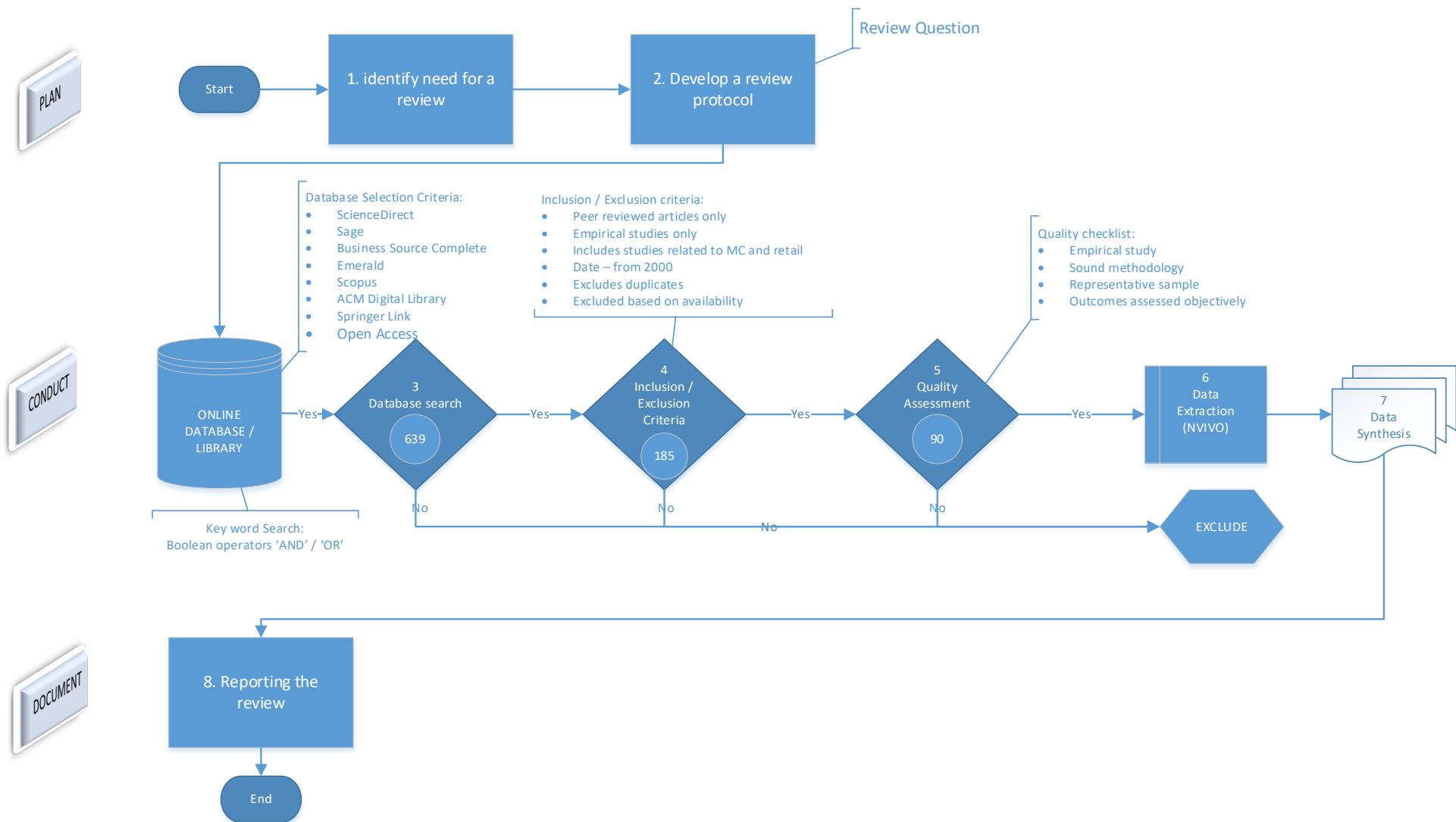


Figure 2-1: Systematic Literature Review (SLR) process based on Kitchenham et al. (2007)

2.3.1. Summary of findings

Literature identified a large number of studies, since 2000; especially in individual adoption studies. However, very few organisation-based adoption studies were identified (Huang and Liu, 2009; AlHinaï et al., 2010; Alfahl et al., 2012; Groß, 2015). with even fewer combined organisation and individual MC adoption studies.

The research suggests that most MC adoption studies within the business context have been clustered around Europe, North America, Central and East-Asia accounting for over 85% of the total studies - see Figure 2-2 below.

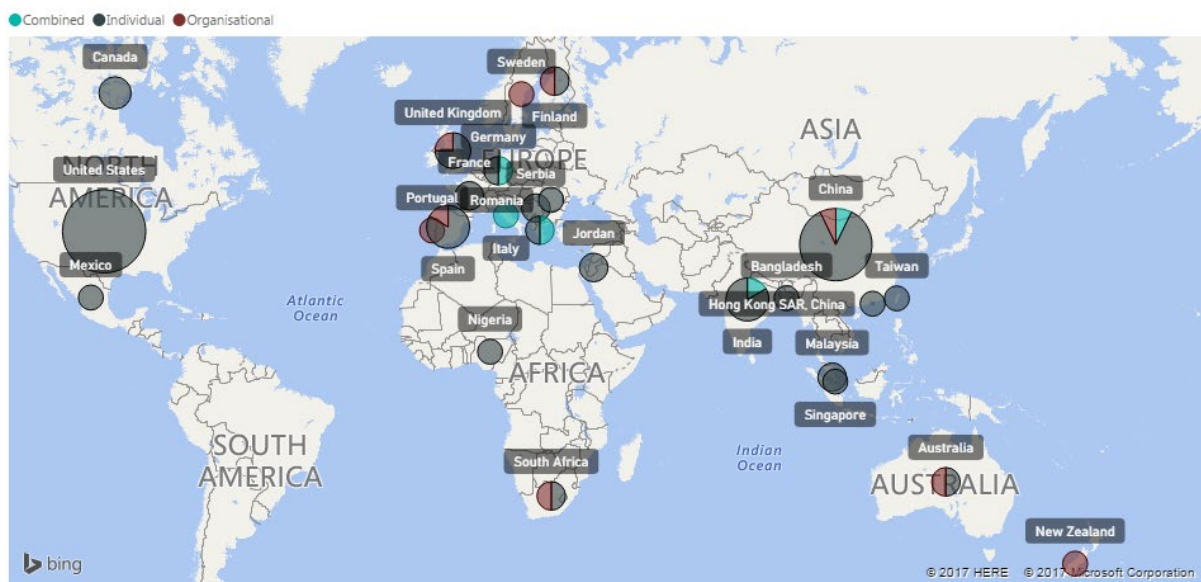


Figure 2-2: Clusters of MC adoption and acceptance studies by county and geography

Few studies were identified in Sub-Sahara Africa and South America regions. This is supported by Huang and Liu (2009) who suggests that earlier MC research was mainly conducted in China. Few studies from the Sub-Sahara Africa region also supports the view of Imran et al. (2016) in their study of MC in the least developed countries, which suggests that although innovative mobile applications like M-Pesa in Tanzania had significant impact on society, it is not studied and captured well through academic research. With 57% of the studies within the developed economies and 34% within developing economies, this could be attributed to the fact that these countries are more

technologically advanced and have the enabling infrastructure and environment to support MC adoption. The need for further studies in developing economies was therefore identified, including opportunities for cross-regional studies.

Analysis of the research methodology applied across the papers, revealed quantitative methodology and survey methods as the preferred research approach which paves the way for other research methods such as mixed method approach to expand the MC adoption body of knowledge.

Hameed et al (2012), suggest no single one theory exists to explain innovation adoption. TAM was found to be the most used individual adoption model – see section 2.4.3 Individual level MC adoption theories . Similarly, TOE dominated the adoption theory within organisation studies – see section 2.4.3 Individual level MC adoption theories .

However, none of the business-level studies examined value constructs in relationship to consumer based on theories such as Resource-Based View (RBV) and Value-based adoption Model (VAM). Findings align with AlHinai et al. (2010) that suggests the interaction of consumer and mobile service provider on the adoption process has been overlooked. This highlights the opportunity to extend other theories such as VAM and RBV within MC retail organisation adoption research.

Overall, the review identified opportunities to extend the literature in the areas of organisation level adoption studies, to further MCA studies in developing economies and cross-regional studies, use of other research methodology and methods such as mixed methods, to explain technology adoption and identified opportunities to expand on other theories such as VAM and RBV.

2.4. MC innovation adoption and business model

Research identified two levels of analysis for MC innovation adoption namely organisational and individual context. Retail business is evolving and organisations that do not innovate will miss out.

2.4.1 MC business model theories

The reason why an organisation will consider implementing a technological innovation like MC, implies the underlying business model framework within adoption theory needs to be explored. A business model aims to address the relationship between business strategy, the organisations' structure, and the available technological resources (Osterwalder, et al., 2005). Other authors suggest that the business model describes the way that a company creates value. Chesbrough and Rosenbloom (2002) suggest that a business model describes how a company earns money, specifying where it is in the value chain. It demonstrates the operation's design, structure, and governance to create value through exploiting business opportunities (Amit and Zott, 2001). According to Turban et al. (2015), business models are the ways enterprise generate revenue and sustain themselves. It relates to the way businesses engage with their customers digitally to create value through digital technology such as websites, social media and mobile device.

The adoption of new business models or refinement to existing, may result in lowering organisations cost or increasing consumer value and where this model is not easily replicated can result in higher returns to the organisation.

Teece (2010), notes that it is about the benefits that firms will deliver to its customers, how it will organise itself in doing so, and capturing elements of that value for itself at the same time. Teece (2010) argues that innovating with business models will not, by itself, build enterprise-level competitive advantage. Christensen et al. (2016), in their review of 26 cases of both successful and failed business model innovations, take a slightly different view that the failure or success of the business model is dependent on the nature of innovation being attempted and how the business model develops through various stages over time. The current and future states of a firm's business model are connected by the firm's dynamic capabilities – its abilities to reconfigure its assets. Christensen, et al. (2016) explain components for a business model as consisting of four elements: (1) a value proposition for customers; (2) resources, such as people, money, and technology; (3) the processes that the organisation uses to convert inputs to finished products or services; and (4) the

profit formula that dictates the margins, asset velocity, and scale required to achieve an attractive return. The importance of expounding a business model applies to all organisations, regardless of geographical location, sector or size, so emphasising this is appropriate for organisations whose goal is to improve their results through MC.

Teece (2010) consider a business model in terms of a unique selling point (USP) and identified three barriers to replicating a business model: (1) assets, system and processes. As part of adopting MC, an organisation needs to ensure that USP exists within its MC offering. This could be from the user experience (UX) to trust within the app or site, to ease of processing payments. A good example will be Amazon and why millions continue to shop online, either through the web or via their mobile app. (2) level of “opacity” (uncertain imitability) for new entrants or competitors to understand the end-to-end process of how a business model is implemented that creates customer acceptability. (3) where the business model involves cannibalising¹² existing sales and profit. However, competitors that are not constrained by the cannibalism will still be willing to try and copy or imitate such business model. This is supported by evidence from empirical study (Huang et al., 2016) which suggests that cannibalisation can be expected with the adoption of MC where this is competing with existing business models such as operating as retail ‘brick and mortar’ store versus an online eShop, with a decline in number of site visits, loss of sales in those traditional channels in the short term. However, where the business strategy aligns with the various sales channels complementing each other (i.e., consumer starts off browsing a product on web, completes the transaction via their mobile and collects the product in store) providing an ‘omni-channel’ shopping experience, the results is that the overall number of individual transactions increase, sales and revenue increase.

A business model choice defines the architecture of an organisation and future expansion path. For example, a retail organisation that starts off as ‘brick and mortar’, may choose to adopt an online business strategy to sell on other retailers’ platform rather than develop its own stand-alone mobile

¹² Market cannibalisation is a loss of sales as a result of companies’ introduction of a new product or service that displaces one of its own existing product or service.

commerce platform. Many scholars hold the view that business models are about value creation and value capture. Value creation identifies the consumers and how they are engaged (McGrath and MacMillan, 2000) and value capture identifies how value is delivered and monetized (Teece, 2010). This research postulates that retail organisations can design viable MC business models by considering a variety of aspects: value proposition, consumer segment, value outcomes and value drivers that include the resources and processes to deliver the value outcomes; to the consumer and ultimately the organisation.

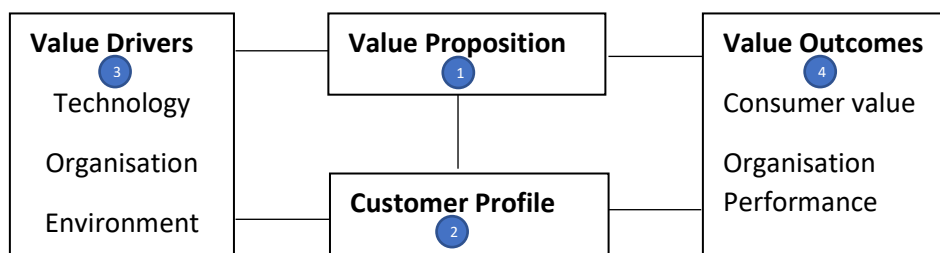


Figure 2-3: Key pillars of mobile commerce business model

Figure 2-3 demonstrates key concepts in a MC business model as identified in the literature: (1) The value proposition that includes a combination of the products and services an organisation offers to create value for a specific customer segment (Osterwalder, et al., 2014) (2) The customer profile and relationship the organisation creates and maintains with the customer, in delivering its value proposition and creating value to the consumer to generate sustainable revenues. (3) The value drivers necessary for an organisation to deliver on its value proposition. This includes technology, organisational structure and environmental factors that are necessary to create value and maintain a good customer relationship. (4) The expected value outcomes.

2.4.1.1 Value Proposition

Value proposition can be regarded as the unique promise of value. Studies suggest that MC has substantial ways of creating and delivering value. The product component of the MC describes the value an organisation wishes to offer its consumers in terms of how it will help them get the 'shopping job' done more effectively, conveniently and efficiently. This is the unique differentiating element of value the organisation offers to a specific target customer segment. What makes MC unique and why

should Nigerian retail sector be looking to 'disrupt' their business model by adopting such innovative technology? Various scholars have viewed MC an extension of EC (Kurkovsky, 2006; Li and Lv, 2007; Chong et al., 2012) but it has also been considered by some to be a subset of EC (Ngai and Gunasekaran, 2007b). While some of the features are similar, there are differences in terms of the number of users that have access and its (anywhere, anytime) ubiquitous nature. MC is considered unique and having "disruptive attributes" or "Z attributes" (Clarke, 2008; Chung-Shing and Ho, 2010; Winnie et al., 2014) that include: (i) mobility with "on-the-move" functionality (Ngai and Gunasekaran, 2007) (ii) Ubiquity with anywhere any time commerce (Zhu and Kraemer, 2005; Chong, 2013; San-Martín et al., 2015) (iii) personalisation and ability to tailor the interaction with the customer (and vice-versa) (Chong, 2013; Winnie et al., 2014; Liébana-Cabanillas et al., 2017). For example, Amazon.com proposes books according to the customers past reading habit (iv) convenience with the ability to have easy, quick and reliable connection to the internet to transact (v) localisation through the delivery of location-based services; where retailers can add value to their consumers by distinguishing their offerings by adopting MC applications.

2.4.1.2 Consumer profile

It is said that 'Customer is king'. Recent studies suggest that this is especially true in this digital age. Peter Fader, a professor of Marketing at Wharton school and a thought leader in the field of customer lifetime value, suggests that consumers hold more power than ever before. With access to information at their fingertips, consumers are able to search for products, compare prices and make informed decisions about purchases.

It is therefore imperative for organisations developing their business model to answer the age-old question of Peter Drucker on who is their customer? and what does the customer value? (Ritter & Lettl, 2018). According to the business model canvas, how an organisation gives meaning to its customers is important; by understanding its customer segment, looking at the job that needs doing? The pain points faced by the customer in achieving this job and the benefits and value the customer

expects to receive. Target consumer segment is under no obligation to accept to utilise an organisations MC and engage in the buying decision-making process to procure a product or service.

The theory of the customer profile, according to Osterwalder et al. (2014) business model canvas is based on the following steps, that resonates with the topic of research:

- 1) **Selecting the customer segment.** This relates to the different group of people or firms the organisation aims to reach and serve. As part of understanding the customer segment, it is important to understand the type of relationship an organisation establishes with its customer segments with the motive of acquiring, retaining and increasing customer sales. It also entails the strategy organisations use to manage and analyse the customer interaction throughout the customer lifecycle.
- 2) **Identifying the customer job by understanding what tasks they are trying to complete.** The customers' buying decision-making process involves significant amounts of risk. The customer journey, is described as the customer's sequence of touch points with the firm in buying and obtaining the service (Voss, Roth & Chase, 2008) and is key to MC. Investigating the stages of buying decision-making process involves (need recognition to information search to alternative evaluation to actual purchase to Post purchase evaluation). According to Osterwalder et al. (2014) the type of jobs to be done is also important. Whether this relates to a functional role linked to perform a specific task for example, complete food shopping. The link to the customer journey mapping cannot be overemphasised as it helps to understand a customer's behaviour, feelings, motivations and attitudes. It is an emotional and physical journey that the customer experiences. (Kojo and Inka, 2014). Embracing MC includes all activities and events related to the delivery of the product or service from the customer's perspective.
- 3) **Identify customer pains.** This relates to understanding anything that annoys or frustrates the consumer before, during and after trying to get a job done or prevents them from getting the

job done at all. MC service is important as it will assist the organisation in defining a value proposition that 'kills the pain'. This could include functional pains for example, a retailers' mPayment application not working effectively.

- 4) **Identify customer gains.** This describes the outcomes and benefits that consumer expect, desire or require to exceed their expectation. Identifying the customer gains is useful in describing how the organisation product or service will be used to create customers' value and positive outcomes. From the literature, the main customer MC adoption outcomes considered include adoption intention, continuous use, customer satisfaction as well as perceived customer value. Customer satisfaction is significant to the overall experience of using MC. It is the result of post-purchase evaluation (Yeh and Li, 2009; San-martin et al. 2016; Liebana-Cabanillas et al., 2017)
- 5) **Ranking jobs, pains and gains to get a sense of priority** The ranking of jobs should be according to level of importance, pain according to level of extremity in the customers eyes and relevance according to how essential they are to the customer. Customer ranking is essential to design a value proposition that addresses the things that the customer really cares about (Osterwalder et al., 2014). Scholars suggest that it does not matter if the organisation starts with what they think is important for potential customers, as long as through testing for customer interaction and engagement, the jobs, pains and gains will reflect priorities from the customers perspective.

Antecedent factors can influence customers' acceptance of MC offerings; therefore, service organisations need to take this into consideration in defining a more successful business model. By adopting a multi-level approach, this research examines the customer profile from the perspective of the organisation as well as from the perspective of the consumer.

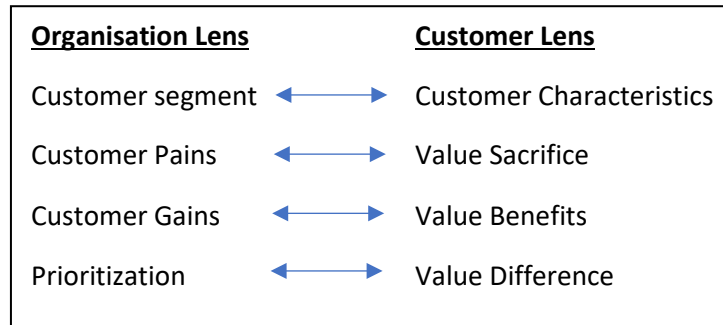


Figure 2-4: Customer Profile alignment (organisation and consumer view)

2.4.1.3 Value drivers

Amit and Zott (2000) in their study of EC business models coined the word ‘value drivers’ of a business model to relate to the factors that enhance the value created for all stakeholders, they identified four value drivers: novelty, lock-in, complementarities and efficiency. In contrast, Christensen et al. (2016) viewed the value proposition and profit formula in terms of resources: people, money, technology and organisation processes used to convert input to outputs which forms the organisations capability needed to deliver its priorities. This research however, defines the value drivers for MC business model adoption as: *drivers that influence organisations MC adoption to enhance the value it creates for its stakeholders*. These drivers are further explored in section 2.4.2 Organisation level MC adoption theories as part of organisation level MC adoption theories.

2.4.1.4 Value outcomes

The business model value outcomes are the expected internal and external consequences from the resources and processes that aims to create value over the short, medium and long term. It relates to the effectiveness of an organisations business model. Internal outcomes could include employee morale and company reputation while external outcomes could include customer value, financial value, environmental impacts.

Zott et al, (2011) found that the ‘business model’ has received increased attention from scholars in explaining firms’ value creation, performance and competitive advantage. Amit and Zott (2001) studied extensively how a model of e-business value drivers affects performance. Performance should

not be viewed in terms of financial measures alone. In innovative markets, performance is best understood as the customer value perceived by end-users. Methlie and Pedersen (2007) view customer value as the benefits perceived by the user exceeding the cost to acquire the service.

2.4.2 Organisation level MC adoption theories

Several organisation level studies relating to the determinants of MC adoption factors based on differing MC adoption theories, models and frameworks (AlHinai et al., 2010; Alfahal et al., 2012; Youqin et al., 2013; Winnie et al., 2014; Liébana-Cabanillas et al. 2017). Most relevant are the Diffusion of Innovation Theory (DOI) (Rogers, 1962), Technology-organisation-environment (TOE) framework (Tornatzky and Fleischer, 1990) and the Task - technology fit model (TTF) (Goodhue, 1995) amongst others. These are further examined below.

Table 2-2: MC adoption theories, framework and models in organisation level studies

Drivers highlighted in bold are considered significant as identified from the literature

Literature	Theories /models	Findings: drivers of MC adoption
Rogers, 1983, 1995, 2003	Innovation Diffusion Theory (IDT) / DOI	Measures user adoption based on 5 attributes: Relative advantage , compatibility, complexity, trialability and observability
Tornatzky and Fleischer, 1990	Technology-organisation-environment (TOE) framework	Emphasises that organisation adoption is influenced by 3 sets of factors: (i) Technological - technology integration , relative advantage, complexity (ii) Organisational (internal attributes) - top management support (TMS), strategic fit, technology competence , financial resources (cost), training and employee empowerment (iii) Environmental (external contexts) - external pressure, competitive pressures, vendor support, customer involvement

Literature	Theories /models	Findings: drivers of MC adoption
Goodhue, 1995	Task - technology fit model (TTF)	Extent to which technology functionality matches task requirements and individual user abilities measured against: Technology fit

2.4.2.1 DOI / IDT

Rogers (2003), explains DOI as “the pattern of adoption, method that assists in predicting the successfulness of invention of technology”. DOI or Innovation diffusion theory (IDT) as it is sometimes referred to by other scholars outlines five main characters of innovation that is relative advantage, compatibility, complexity, trialability and observability. With these characters, positively or negatively affecting organisation adoption (Frambach and Schillewaert, 2002; Apanasevic et al., 2016). Although the innovation characteristics are presented at the individual level, Rogers (2003) argued that they could also be applied to adoption models at the organisational level. In our study, various scholars (Picoto et al., 2014; Maduku et al. 2016; Tatjana et al., 2016) applied DOI in examining the adoption, post adoption and value of MC to the organisation, with the three main drivers identified in the studies as relative advantage, compatibility and complexity.

Relative advantage (RA) is the degree to which MC innovation is perceived as providing greater benefits than its alternatives (Rogers, 2003). Maduku et al. (2016) considers RA to be the anticipated benefit (or value driver) that organisations can derive from adopting and using the MC applications. They found a positive relationship between RA and AI. RA was considered one of the strongest drivers of M-business usage (Picoto et al., 2014, Tatjana et al., 2016).

Compatibility is the degree to which MC innovation is perceived as being consistent with existing practices and values (Rogers, 2003). Compatibility could relate to how existing processes are similar to the processes required to embrace MC applications. According to Christensen et al. (2015), the only type of innovation that can be performed within existing business models are those that either build on or improve existing models and therefore compatible with current priorities. The greater the

degree of compatibility, the better it is to pursue the opportunity as part of existing business; however, the greater the difference, the need to pursue the opportunity via a separate business unit. Picoto et al. (2014) in their study found compatibility not to be a positive driver in m-business usage and suggests that organisations able to make their processes compatible will find that innovation brings about competitive advantage.

Similarly, complexity is the degree to which MC innovation is considered difficult to use. In organisation level studies, the results showed that perceived complexity did not have a significant negative relationship with MC adoption. (Picoto et al., 2014; Maduku et al., 2016) as organisations are considered to have the necessary resources to handle complexity of the adoption. Also, the nature of technology and how it is delivered makes 'ease of use' simplified for example, software as a service (SaaS).

The literature demonstrates that DOI has a solid theoretical underpinning (Frambach and Schillewaert, 2002; Hameed et al. 2012) as well as empirical support (Picoto et al., 2014; Maduku et al., 2016; Tatjana et al., 2016) in exploring value drivers of MC business model. Another benefit of DOI is that it can be applied in combination with other theories for example, Picoto et al. (2014) applied DOI in combination with TOE in their study of determinants of m-business usage and value determination and DOI and TAM (Apanasevic et al., 2016) were also combined in organisation level studies, demonstrating the flexibility in extending the theory. However, DOI has come under criticism as being used to explain innovation adoption within the context of a single user or a single firm but inadequate in explaining innovation adoption within the supply chain because of inter-organisation and intra organisation interactions (Youqin et al. 2013). Picoto et al. (2014) observed short-comings of DOI, as it negates environmental drivers in organisation innovation adoption.

2.4.2.2 Task – Technology fit (TTF)

According to Lee et al. (2005) task-technology fit and MC usage are the dominant factors that affect MC performance. TTF has been defined as the extent to which technology functionality matched task

requirements and individual user abilities (Goodhue, 1995). It measures the degree to which an organisation's systems and services are meeting the needs of its individual users in performing their tasks. Organisational structure contingency theories proposed the organisation's structure must "fit" its organisational context to have some similarity to TTF (Goodhue, 1995). While TTF is at the individual level, the structural contingency theory is at the organisational level. Martín et al., (2012) suggests in their study that if the characteristics of the "task" are location sensitive, time-critical and personal, the degree of fit with MC will prove to be high and will have a positive influence on performance.

2.4.2.3 TOE framework

Like the DOI, the TOE framework has dominated the adoption theory within organisation level studies with both theoretical and empirical support (Alfahal et al., 2012; San Martín et al., 2013; Picoto et al. 2014; Maduku et al., 2016). TOE is a useful approach for examining factors affecting the adoption of IT in organisations (Hameed et al. 2012). The TOE framework proposes three types of drivers that influence organisation MC adoption: (i) technological, (ii) organisational and (iii) environmental contexts (Tornatzky and Fleischer, 1990). The process by which an organisation adopts and implements MC innovations is influenced by the technological context, organisational context and environmental context (DePietro et al., 1990).

Two main drivers impacting the technology context include: technology competence and technology integration.

Technology competence is the ability to create and use a MC technology effectively. It has been studied within the technological factor of the TOE (Martín et al., 2012). Drivers including technology fit, technology integration, RA and complexity (CP) from the DOI (Winnie et al., 2014; Maduku et al., 2016), were repeatedly considered by scholars as technology competence factors.

Technology integration is the capability of organisation to integrate MC applications with its existing systems and has been considered a significant driver in MC adoption (Sinisalo et al., 2007; Yang et al. 2014; Picoto et al., 2014; Tatjana et al. 2016). Wang et al. (2015) suggested that it would be easier for

retailers with existing EC platforms to migrate to MC systems adding that firms that already sells through the Internet, can utilise existing infrastructure to support its mobile store.

Winnie et al. (2014) views the organisational context as typically descriptive features concerning the organisation. In the business context, organisational factors include the top management support (TMS), the fit, size, culture of the organisation and its overall technology competence. Maduku et al. (2016) found that TMS is therefore considered as the degree of support, commitment and buy-in shown by senior management within the organisation in adopting MC. Youqin et al. (2013) proposed that TMS had a significant influence on a firms' mSCM adoption intention, by South African SMEs.

Other scholars identified organisational factors in retail context to include strategic fit, available financial resources (cost), training and employee empowerment (Roussos et al., 2003; Bennett & Savani, 2011; Youqin et al. 2013; Cagliano et al. 2015) with TMS ranking as significant and cost not considered a significant barrier to MC adoption. Strategic fit relates to the alignment of MC strategy with the overall corporate strategy. Sidhartha et al. (2014) suggested that strategic alignment with other functional units within the retail enterprise was the most important critical success factor (CSF) of mobile retailing. Technology competence is the capability of a firms' IT infrastructure and workforce (Zhu et al, 2006a, as cited by Winnie et al. (2014). Having sufficient financial resources to implement and support on-going costs of innovation is important. However, cost was considered not as significant in influencing MC organisation adoption intention (Roussos et al., 2003; Roger and Sharmila, 2011; Youqin et al. 2013; Anna Corinna et al. 2015). Training and employee empowerment on the use of MC applications was considered more significant in boosting the interaction with consumers and enhancing their customer experience.

In the study of TOE, one of the main advantages it has over other adoption theories like DOI is that it incorporates an environmental aspect that relates to the surroundings organisation as it conducts its business (for example, influence from competitors, government, vendors). Environmental drivers identified include, external and competitive pressures, vendor support and levels of customer

involvement. The level of pressure from external sources including competitive and partner pressure has been considered as an influencing factor on adoption intentions. Winnie et al. (2014) found this a significant and positive influence to M-business usage, while in contrast, other scholars (Martín et al., 2012; Maduku et al. 2016) suggested that competitive pressures did not influence organisations' AI. Perhaps, this is due to organisations being 'early adopters' and devoid of competitive pressures. The research sees if similar results would be obtained in the study of Nigerian retailers, where the adoption of MC is still said to be at its infancy. Customer involvement was considered a big driver of MC shopping initiatives, that influences companies to adopt mobile technology (Youqin et al., 2013). Involving consumers in the process of creating a new service can enhance retailers' service commitment and improve relations between both sides (Liébana-Cabanillas et al. 2017).

TOE offers flexibility in extending the model to include other theories like the DOI. Maduku et al. (2016) suggested that it explains intra-firm innovation adoption better than DOI. Similar to the DOI, the TOE framework has also been extended successfully by adding a 'customer value' dimension as factors that impact firms' perceived performance in MC advantage (San-Martin, et al., 2016). Ability to incorporate external environmental factors serves as advantage.

In summary, both DOI and TOE treat with equal importance the technology innovation and organisational characteristics as well as flexibility in extending the theories during adoption and usage. In addition, the TOE framework makes Rogers' IDT a better theory to explain intrafirm innovation as supported by Hsu et al. (2006). TOE provides additional insights since it accommodates environmental factors (Picoto et al. 2014). This research proposes that to incorporate MC business model, adoption value drivers utilising the TOE framework, research questions will be relevant in exploring organisation adoption intention of MC. See Appendix 10.1 Key factors influencing MC adoption (organisation level studies) for details of organisation variables.

2.4.3 Individual level MC adoption theories

Prominent theories identified in individual adoption level study include: Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), Technology Acceptance Model (TAM) (Davis, 1989), Theory of Planned Behaviour (TPB) (Ajzen, 1991), Innovation Diffusion Theory (IDT) (Rogers, 1983), Expectation Confirmation Model (ECM) (Bhattacharjee, 2001), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) and value-based adoption model (VAM) (Kim et al. 2007).

The research is grounded in these theories as summarised below.

Table 2-3: MC adoption theories, framework and models in Individual level studies
Variables highlighted in bold are considered significant

Literature	Theories	Variables / Constructs
Fishbein and Ajzen, 1975	Theory of Reasoned Action (TRA)	Behavioural intention is caused by two factors: attitude and subjective norm
Ajzen, 1991	Theory of Planned Behaviour (TPB)	Extends TRA by adding constructs: perceived behavioural control to attitude, subjective norm
Davis, 1989	Technology Acceptance Model (TAM)	Behavioural intentions are measured based on two factors: Perceived usefulness (PU) and Perceived ease of use (PEOU)
Rogers, 1983	Innovation Diffusion Theory (IDT)	User adoption is influenced by: relative advantage, compatibility, complexity, trialability and observability
Bhattacharjee, 2001	Expectation Confirmation Model (ECM)	Pre-behaviour (expectations) and post behaviour (perceived performance, confirmation, satisfaction , continuance intention)
Venkatesh et al., 2003	Unified Theory of Acceptance and Use of Technology (UTAUT)	Performance expectancy, effort expectancy, social influence, and facilitating conditions
Kim et al., 2007	Value-based Adoption Model (VAM)	Present adoption as a comparison of benefits and sacrifice that influence value and captures the monetary element

2.4.3.1 TPB

Ajzen's (1991) theory of planned behaviour (TPB) is based on the theory of reasoned action (TRA) and has been applied, explored and empirically validated by many scholars (Maity, 2010; Kiseol, 2012; Mishra; 2014; Gupta and Arora, 2017) in consumer MC adoption, across different countries. TPB, assumes behavioural intentions is determined by three factors: (1) individual belief about the outcome and evaluation of the expected outcome (2) person's beliefs and values within a social group, society and culture and (3) internal characteristics (i.e., self-efficacy) and external control (i.e., opportunities, risks and obstacles) factors (Gross, 2010). This view is shared by Khalifa and Shen (2008) that suggests individual behaviour is determined by behavioural intention, driven by attitude, subjective norms (SN) and perceived behavioural control.

SN captures the individual perception of the influence of significant others for example, friends, family, peers, media, authority figures, influenced by social pressure to adopt or not to adopt technology (Young and Kent, 1985; Kiseol, 2012). Inevitably, people assign significance to the sense of belonging and take the opinion of others within the group into account due to normative beliefs and motivation to comply. Fishbein and Ajzen, (1975) and Ajzen (1991) considered SN to be a direct determinant of behavioural intention in the TRA and considered significant in viewing the life of people in MC adoption. This thesis examines SN as potential factor influencing customer MC adoption as part of research question two (refer to section 1.4), especially in a country like Nigeria, where collectivist culture (Hofstede, 2011) with tightly integrated relationships and extended family ties and groups is common place.

TPB has been widely used to explain IT adoption, including its extension to other models like TAM, in explaining consumer behaviour towards MC adoption (Khalifa and Shen, 2008; Maity, 2010; Zhou and Lu, 2011; Yang et al., 2012). This research concedes that MC adoption is influenced by individual and societal factors, however combined with other theories will develop a stronger model.

2.4.3.2 TAM

From our review of empirical MC adoption studies, one of the most influential individual-focused technology adoption theories in the field of information Systems (IS) is the Technology Acceptance Model (TAM) proposed by Davis (Davis, 1989; Davis et al., 1989). TAM, has been theorised the most in individual adoption studies examined. TAM argues that an individual's intention to adopt technology will be determined by their perception of both its usefulness and ease of use. TAM helps explains the adoption of information systems by employees in an organisation (Davis et al., 1989; Venkatesh and Davis, 2000). The model is highly regarded for its ability to predict individual behavioural intentions, integrating cognitive and affective behaviour (Ko, et al., 2009). TAM puts the focus on individual users of technology. Not without its criticism, it is considered by some scholars as too simplistic and over studied (Chong, 2013).

Dependent variables of TAM are perceived ease of use (PEOU) and perceived usefulness (PU), with independent variable as individual's behavioural intention. The attraction of TAM lies in considerations of behavioural intention; mainly PU and PEOU. PU is the degree an individual believes that using a system would enhance job performance, while PEOU is the degree a person believes that using a system would be free from effort (Davis, 1989). It is considered flexible as has been extended by several scholars and can be integrated with cognitive and affective behaviour (Ko et al. 2009). However, it has had its criticisms and has been considered too simplistic and over studied (Chong, 2013). It has also been considered to be based on utilitarian, normative and extrinsic motives (Peng, 2012), thus the need to extend its core constructs – PEOU and PU. Noteworthy is the fact that both variables were not always consistent in supporting MC adoption, with the influence of PEOU found to be significantly lower in affecting MC adoption in individual studies.

2.4.3.3 UTAUT

The Unified Theory of Acceptance and Use of Technology (UTAUT), merges established theories (such as TRA, TPB, a combined TAM and TPB model, and IDT). It can be used to assess the likelihood of

success of new technology introductions (Venkatesh et al., 2003). UTAUT theory has been used in various domains to predict the technology adoption intentions. According to Blaise, et al. (2018), UTAUT's benefit over other models is its ability to consolidate a range of theoretically and empirically relevant constructs from other models (Venkatesh et al. 2003). It also sights UTAUT approach as a flexible method to conceptualise MC acceptance, which allows for the incorporation of additional variables.

Venkatesh, et al. (2003) present the UTAUT framework based on four main MC acceptance constructs to predict MC technology acceptance intentions and usage behaviour: (i) performance expectancy - the degree to which an individual believes that using the technology will help to achieve a job (ii) effort expectancy - the degree of ease of use of the associated technology (iii) social influence - the degree to which an individual perceives the importance of others belief that the individual should use the new technology; and (iv) facilitating conditions - the degree to which an individual believes that organisational and technical infrastructure exists to support use of the technology. Several previous studies demonstrated that UTAUT predicted MC adoption intention (Yang, 2010; Shareef, et al., 2017; Blaise, et al., 2018; Venkatesh, et al., 2003) and its therefore considered a relatively strong predictor of technology acceptance.

Various studies have identified some of the advantages of UTAUT in ability to unify TAM and TPB technology adoption models (Chong, 2013). UTAUT has also evolved from other earlier adoption models successfully. For example, performance expectancy pertain to perceived usefulness (TAM/TAM2 and C-TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (IDT), and outcome expectations (SCT); effort expectancy is from perceived ease of use (TAM/TAM2), complexity (MPCU), and ease of use (IDT); social influence is adapted from subjective norm (TRA, TAM2, TPB/DTPB and C-TAM-TPB), social factors (MPCU), and image (IDT); and facilitating influence is from perceived behavioural control (TPB/DTPB, C-TAM-TPB), facilitating conditions (MPCU), and compatibility (IDT). (Venkatesh, et al., 2003). However other scholars have highlighted some

disadvantages of UTAUT that include: 1) originally developed to examine the Information System (IS) adoption, based on the organisation's IS context ignoring individual personality traits. 2) MC includes entertainment activities and it is used by consumers instead of employees. 3) characteristics of MC (conducted in a wireless environment, not face-to-face), 4) relevant adoption variables such as trust, cost, security and innovativeness of users have been neglected by UTAUT (Aldás-Manzano, et al., 2009). Other criticism of UTAUT is that it focuses on cognitive and not affective (social, psychological and technological) influences of consumer behaviour (Yang & Forney, 2013)

2.4.3.4 VAM

The value-based adoption model (VAM) asserts that adopting MC is determined by perceptions of its value, determined by the perceived characteristics of usefulness, ease of use, enjoyment, technicality, internet connectivity, perceived fees and so on. The model is centred on the trade-off between benefits and sacrifices to predict perceived value, which in turn influences customers' behavioural intentions toward the adoption of MC (Kim, et al., 2007; Keong, 2016). Prior studies have also used the VAM to determine adoption intention of mobile internet and shopping (Kim, et al., 2007; Ko, et al., 2009) and mobile shopping mall apps (Keong, 2016).

Kim, et al., (2007) present the VAM model based on four main MC adoption constructs to predict MC and mobile internet acceptance behaviour: (i) perceived benefits – includes the extrinsic and intrinsic¹³ value factors as well as customers' cognitive and affective¹⁴ factors considered in evaluation of a product or service. This includes usefulness considered as the total value a user perceives from using new technology as well as perceived enjoyment "the extent to which the activity of using the technology is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated" (Davis, 1989) of using the new technology. (ii) perceived sacrifices – relates to both monetary and non-monetary factors (Zeithaml, 1988; Kim, et al., 2007). Monetary spending

¹³ Intrinsic and extrinsic dichotomy of quality relate to the physical composition of a product (e.g., ease of use) and non-product specific element (e.g., brand name) respectively (Zeithaml, 1988).

¹⁴ Lutz (1986) defines affective quality as overall attitude while cognitive quality is that of a superordinate inferential assessment of quality.

includes the actual price of a MC, usually measured on customers' perceptions of the actual price paid. Non-monetary costs usually include time, risk, technicality and other unsatisfactory spending related with adopting MC. (iii) Perceived value – is the customer's perception of what is received versus what is given, based on overall assessment of the utility of a product. It is also seen as the trade-off between benefits and costs. Addis and Holbrook (2001) make a distinction between two kinds of consumer value: utilitarian value¹⁵ (or functional value) and hedonic¹⁶ value (or experiential value) with Kim and Hwang (2012) referring to both value elements as mobile value. (iv) Behavioural adoption intention – associated with the original TPB, predicts behaviour on the basis of individual attitudes toward the perceived value. The intention to adopt MC therefore refers to the individual customers' willingness to adopt mobile related applications for the purpose of buying and selling.

Previous studies demonstrated that VAM has successfully been applied as a good predictor of adoption intention and perceived value (Kim, et al., 2007; Keong, 2016; Ko, et al., 2009; Lin & Lu, 2015; Liu, et al., 2015). This research posits a VAM framework as able to capture monetary sacrifice and present adoption as a comparison of benefits and costs (value) providing a much richer customer value perspective of MC adoption. Integrating other theories such as TPB and TAM. Perceived value of customers may influence their behavioural intention towards the adoption on MC, therefore this study aims at bridging the research gap by combining value and IT adoption (Liu, et al., 2015) dimensions.

2.4.4 mCommerce and Trust

It is important to build personal relationships as part of trust. Trust is an important factor affecting all social interactions and exchanges situations (Li, et al., 2012). Understanding the multilevel and dynamic nature of trust in MC is important because it not only provides practical insights that can be

¹⁵ Utilitarian value is defined as consumer's overall evaluation on the functional benefits and costs (Lin & Lu, 2015; Overby & Lee, 2006). It is based on functionality, signifying the ability of users to accomplish task-related objects with the aid of mobile related services (Kim, et al., 2007).

¹⁶ Hedonic value is defined as the consumer's overall evaluation of experiential benefits and costs (Overby & Lee, 2006). It is based on emotions like the enjoyment, pleasure, and individual aspiration

used to further enhance the MC experiences for both retailers and consumers. Trust has been viewed through various multi-disciplinary fields: economic, social/institutional, behavioural/psychological, managerial/organisational, and technological. Trust is considered essential in exchange relations because it is a key element of social capital (Kim et al. 2008, p. 545). One of the main focal points of MC research is trust. Head and Hassanein (2002) took the approach to divide trust into hard and soft measures in EC. Soft trust cannot normally be resolved through back-end data protocols but more on feeling of trust (Luo, 2002). To establish and maintain trust in mobile transactions between both customer and organisation, it may be necessary to create and deploy 'hard' and 'soft' measures to reduce the uncertainty between parties. With hard trust based on technical and security enabled interactions such as encryption, authentication and firewalls to protect customer information and soft trust based on the privacy of personal information and retailers' quality of service.

Trust becomes more critical in MC because the degree of uncertainty and risk associated with digital transactions and payments is much higher than that in a traditional trade. Trust is multilevel and dynamic as it involves multiple parties (e.g., customer, sales representative, product, clearing house and organisation to mention a few). It changes over time, based on the experience. The dynamic and multilevel nature of trust should be taken into consideration when studying trust in MC (Kim, 2014). Factors and mechanisms affecting the level of trust between organisations may differ from those between individuals (Lane 2001; Zaheer et al. 1998). However, Li, et al.(2012), identified no fundamental difference between the notions of interpersonal and interorganisational trust within B2C and B2B value chains. In MC, a B2C transaction involves the exchange of money and goods or service, where the consumer may develop trust once the consumer makes a purchase from the retailer. If, however, the retailer fails to deliver on the quality of the goods, then it is unlikely that the consumer will trust the retailer in the future. Trust is not a static component that is constant over time. Trust is based on an interactive process that alters the amount of information and the depth of relationship between the trustor (customer) and trustee (retailer) (Kim, 2014). Trust building is an evolving process

that can be enhanced or declined depending on additional evidence (i.e., experience) as newer interactions between parties become available.

Various scholars (Head & Hassanein, 2002; Kim, 2014; Hillman & Neustaedter, 2017) revealed why online trust is important due to uncertainty in online transactions. Mobile enabled commerce has fewer entry and exit barriers compared to bricks and mortar stores. This means that customers may not trust MC as anyone can easily set up enterprise. Similarly, one is not able to view an organisations investment in buildings and personnel, which could further establish feelings of longevity. The inability for customers to physically evaluate products in an online environment to the same extent as they can in-person in a physical store impacts trust relationship. Also, the lack of human touch and interaction, providing less of a chance to build trust that traditional trading provides. For example, the opportunity to haggle and feed off non-verbal trust cues is lost. Feng Li (2012) suggested that gestures, or the ability to 'see and try' products, 'squeeze the oranges', 'try before you buy' are generally absent. MC trust is especially important for first-time shoppers because most of them are unfamiliar with using a mobile app or mobile-enabled Internet for shopping. Literature suggests that for MC users, trust increases a user's intent to use (Feng li 2012). Triadic¹⁷ trust disposition was said to significantly impact customer MC transaction intention in the selection of mobile payment providers (Köster, et al., 2016). Brand trust, security trust, business trust, experience-based trust was also significant in influencing MC adoption (Persaud & Azhar, 2012; Jayawardhena, et al., 2009; Tengti, 2009; Liébanacabanillas, et al., 2017; Shareef, et al., 2017). However, in examining permission-based mobile marketing, personal trust was considered not so significant (Jayawardhena, et al., 2009).

2.5. Summary

This chapter provides a critical review of literature underpinning the research. It contributes to an understanding of the current state of MC, through a SLR that exposed the level of geo-spatial regional

¹⁷ Triadic Trust is a construct that depends of three relationships between consumer, online vendor and mobile payment provider (Köster, et al., 2016).

coverage, economic analysis, research approaches, MC adoption theories, models and frameworks. The research gap identified the need for further MC adoption studies in developing economies, opportunities to apply other research methodologies (e.g., mixed methods) and examine value construct within the B2C context. It presents a multilevel review of retailer adoption and a case for MC consumer acceptance as a basis to further explore the adoption phenomenon within the context of a developing economy like Nigeria. The result identified key constructs and theories relating to MC adoption from both the organisation and individual consumer perspective.

Chapter ends

Chapter 3: Theoretical background and conceptual framework development

This chapter presents the underlying rationale that explains how MC adoption by organisations affects consumer perception of perceived value and intention to accept organisations MC related service offerings. A conceptual framework is introduced to expand the concept of MC enabled business model, in which the value creation potential for both businesses and customers' is sought. A multilevel value-based MC adoption model is presented.

A conceptual framework presents the researcher's building block on how the research problem (i.e., the perceived lack of MC value-based adoption within the B2C) will have to be explored. Ravitch and Riggan (2017) define conceptual frameworks as an argument about why the topic researched, and why the means proposed to the study is considered appropriate and rigorous.

3.1. Theoretical background – a multilevel perspective

Prior IS research has long studied why and how organisations adopt new technology such as MC. Similarly, the same could be said for how and why individuals accept to adopt and continue to use new technologies. However, very few studies have considered both organisation and consumer adoption in a single study, as has been considered complex as discussed in the literature review. The conceptual framework aims to shape the design and direction of the study and guides its development, by including multiple theories. The research will be focusing on adoption theory relating to MC adoption (acceptance of use) intentions across B2C retail sector. A multilevel perspective is presented, providing a holistic view of the MC adoption phenomenon.

A multilevel perspective is defined as an approach to theory development that considers the relevance of multiple levels of analysis (Burton-Jones and Gallivan 2007; Bélanger et al., 2014; Zhang and Gabel, 2017). According to Kozlowski and Klein, 2000, the primary goal of the multilevel perspective in organisational science is to identify principles that enable a more integrated understanding of phenomena that unfold across levels in organisations. Evidence from reviewing the literature suggest

that within the B2C context, there are multiple actors (retailer, employees and consumers) in the adoption of MC. Very few studies attempted to study various levels in the organisation (Padhi et al. 2014; Cagliano et al. 2015; Köster et al., 2016), where most of the studies were single-level studies, either at the individual level (Gupta and Arora, 2017; Liebana-Cabanillas et al., 2017) or at the organisational level (Bennett and Savani, 2011; Winnie et al., 2014; Maduku et al. 2016); this is calling for further empirical multilevel adoption studies that extends the MC adoption and acceptance theories by integrating both retailer and consumer adoption intentions.

The dominant theories explaining technology organisation adoption within the MC related research, as explored in the literature include: DOI (Rogers, 1985), TTF model (Goodhue and Thompson, 1995) and the TOE framework (Tornatzky and Fleischer, 1990). However, the research will apply the TOE theoretical lens to examine organisations MC adoption perspective, due to its ability to be extended to other theories and its inclusion of external variables. Similarly, extant consumer MC adoption theories studied include: Fishbein and Ajzen (1975) TRA, Ajzen's (1985) TPB, Davis (1989) TAM, Rogers (1985) IDT, Venkatesh and Davis (2000) TAM2, Kim et al. (2007) VAM, and Venkatesh et al. (2003) UTAUT. In addition, the VAM is proposed as the theory underpinning the research, as it applies the concept of value in adoption and provides the potential to extend.

Other dominant theories on business and customer adoption models will be the focus with MC value proposition, perceived value and outcome (Osterwalder, 2003). Multilevel theories make explicit the links between constructs previously unlinked within the organizational literature (Klein, et al., 1999). The key contribution of this research is to reposition MC adoption research beyond consideration at the singular level (organisation, employee, customer, supplier) by focusing on the linkage between organisation and consumer in the value creation process. To understand the adoption intention and usage as a value proposition to Nigerian customers' in creating value to influence the organisations performance. The goal is to understand organisation performance as the key dependent variable in influencing the decision to adopt MC, while understanding consumer intention to use the MC

technology offered by the organisations. The primary goal of the multilevel perspective in organisational science is to identify principles that enable a more integrated understanding of phenomena that unfold across levels in organisations (Kozlowski and Klein, 2000).

The next section, presents development of the conceptual framework. It connects the relevant theoretical building blocks, constructs and variables from the business side and the consumer side.

3.2. Conceptual framework development

To derive a conceptual framework, the notion of MC adoption was explored from both the retail business and consumer side. From the literature, it became evident that MC technology on its own has no value, as according to Chesbrough (2010) the economic value of technology like MC will remain latent until it is commercialised via a business model. By identifying the factors to MC adoption and filtering out the key constructs of the business model, a framework was formulated to access the B2C value potential of MC business model. Figure 3-1 below explains a multilevel adoption conceptual framework. Based on the findings and discussions above, the following theoretical models underpinning the study:

- Organisations' TOE adoption framework (Tornatzky and Fleischer, 1990)
- Customer value-based adoption model (Kim et al., 2007)
- Business model and value proposition, perceived value and value outcomes (Osterwalder, 2003)

A narrative of the conceptual framework development from a business model perspective depicted to the left side of the framework, influencing customer adoption intentions to the right side. Four main constructs of: (i) MC business model innovation and adoption intention (ii) businesses-level innovation adoption (iii) Customer-level innovation adoption (iv) Business model value flows - customer relationship, value proposition, value perception, value co-creation, value realization, value outcomes) are introduced.

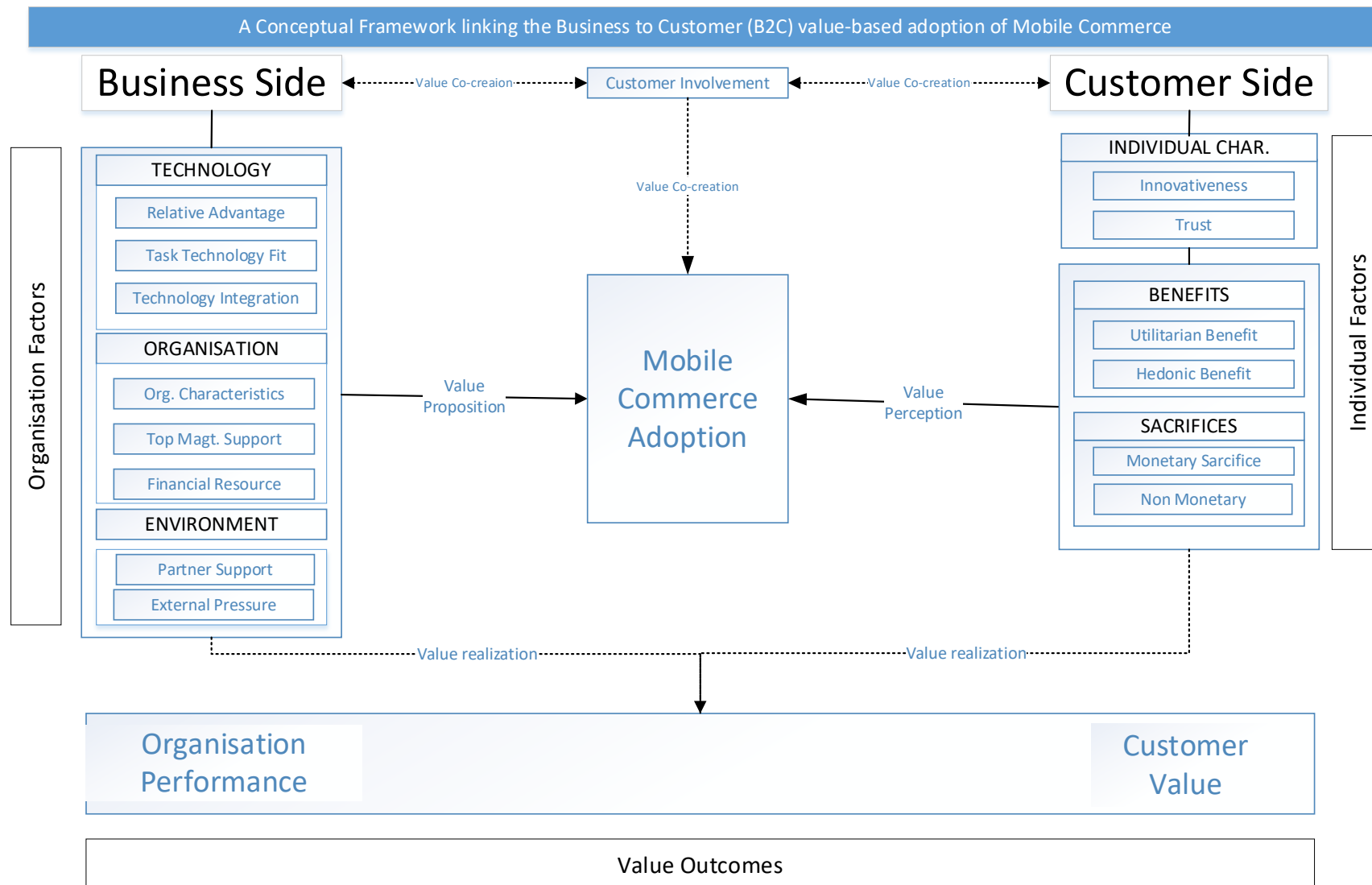


Figure 3-1: Value-based MC adoption conceptual framework

3.2.1. Business model and MC technology adoption

Dubosson-Torbay et al. (2002) describes a Business model (BM) as an architecture of a firm and its network of partners, for crafting, marketing and delivering value to customers to generate profitable and sustainable revenue stream. Johnston et al. (2008) consider the business model to be made up of four interwoven elements (customer value proposition, profit formula, key resources and key processes) when taken together to create and deliver value. Osterwalder and Pigneur (2010) describes the BM as a rationale of how an organisation goes about creating, delivering and capturing value. Amit and Zott (2011) identified four themes in their review: 1) the business model as a new unit of analysis; 2) a holistic perspective on how firms do business; 3) an emphasis on transaction activities; and 4) an acknowledgement of the importance of value creation. For the purpose of this research, the business model starts by thinking about what the problem or need the customer has that needs fulfilling, how best the business will fulfil that need (based on their resources and processes) and at what value is the need being fulfilled to the customer and business.

The organisation business model is at a point in time and should be linked to the organisations overall long-term strategy that are constrained by its dynamic capabilities. Da silva and Trkman (2014) argue that the business model is bounded by a firms' dynamic capability. A business model can change over time and that change could be considered a business model innovation that is 'disruptive' or 'sustaining' (Christensen, 1997). By adopting MC technology innovation as part of an organisations' business model, we assert that organisations are in a position to capture, create and deliver value within the context of the business model.

3.2.2. MC technology adoption (product)

The MC business model is considered in this case to represent the "product" that is offered to the customer. According to Osterwalder and Pigneur, (2003), the product covers all aspects of what a firm offers its customers, not only its product or services but the way it differentiates itself from its competitors. To remain competitive, organisations must therefore capitalise on the unique attributes

of MC. Innovation is generally considered to be one of the key drivers of organisation success (Frambach & Schillewaert, 2002). This research asserts that to develop a viable MC business model, organisations must choose to design and implement MC that aims to capitalise on its unique attributes (ubiquity, personalisation, localization, convenience, connectivity, virtual and augmented reality, social interaction).

The MC features (Z-attributes), that organisations seek to adopt as part of its value proposition as discussed by various scholars (Clarke, 2008; Chung-Shing and Ho, 2010; Winnie et al., 2014; Ngai and Gunasekaran, 2007; Zhu and Kraemer, 2005; Chong, 2013; San-Martín et al., 2015) include:

- Ubiquity: is defined as ability to transact on mobile devices at any time and any location.
- Localisation: is considered the ability to provide instant and location specific information. Organisations can target specific information based on a users' location
- Personalisation: is being able to provide individual user preference and needs.
- Convenience: is the ease of access to information and ability to perform transactions wherever and whenever the user decides.
- Connectivity: is the ability to connect constantly, quickly and easily to the internet and commercial systems.
- Virtual / augmented reality: is a means of creating greater connection with the customer. It is the ability to helps customers try and test products easily, in a more personalised way.
- Social media: provides organisations the opportunity to form a relationship with customers to market and promote retailer brands and attract new customers.

The process of MC adoption according to Rogers (1995, p. 21) is one in which an individual or other "decision-making unit" moves from first knowledge of an innovation to forming an attitude toward the innovation, to a decision (to adopt or reject), to implementation of the new idea, and to confirmation of this decision. The antecedents to organisations and individual customers adoption of

MC are discussed further in sections Business-side of MC adoption (business capability) and Customer-side of MC adoption (customer segment).

3.2.3. Business-side of MC adoption (business capability)

The business-side adoption of MC examines the organisation capabilities as factors impacting their adoption intention. According to Retta and Letti (2018) the business model can be linked to strategic management discussions that include the resource-based view, the demand side perspective and the dynamic capability view. Business capability for MC consists of the in-house and outsourced capabilities to deliver on its business model. The TOE framework (Tornatzky and Fleischer 1990) is considered appropriate to study internal and external factors that influence MC adoption as part of an organisations business capability. It also considered these specific factors as significant within technology, organisation and environmental capabilities. The TOE enables extension of other theories such as TTF as variable factors to organisations MC adoption as follows:

Technology capability factors

Relative advantage has been considered significant in influencing MC adoption intentions within organisations with technological resource (infrastructure and technical skill) at their disposal to create and offer a value proposition. MC is enabled by the existing technology in use by an organisation, including the general IS capability; mobile and EC specific technologies (Zhu and Kraemer, 2005). The degree to which organisations are therefore able to offer MC as an innovative idea better than the one it superseded will drive competitive advantage.

Task technology fit is considered as a business side capability as it relates to the extent to which the technology meets the task requirements of the user (Lee et al., 2005; Goodhue and Thompson, 1995) in this case the customer. Capabilities can also be examined in terms of competence to match the MC technology to deliver the task. So, factors such as competence, customers' ease of use and operability of the MC application will be examined.

Technology integration capability also examines the extent to which organisations are able to integrate MC applications with its existing systems. This research posits those organisations that are able to integrate MC successfully, with their existing technology (i.e., such as existing EC platforms) will be more likely to make the business model work.

Organisation capability factors

Formal and informal support structures is considered as 'organisation factor' in some publications as discussed in section 2.4.2.3 TOE framework above, with specificity to the firm size, top management support and financial resources.

As part of the organisation characteristics, the firm size repeatedly has been found to influence the propensity to adopt in adoption literature (Frambach & Schillewaert, 2002). As size represents several important aspects of the organisation, including resource availability, decision agility, and prior technology experience. The general view is the larger the organisation, the greater the need to adopt MC innovations in order to support and improve performance. On the other hand, it is argued also that smaller organisations are more flexible and innovative to adopt new technology. The research posits that size does matter when it comes to MC adoption as part of an organisations business model.

Top management support is considered a driver towards MC innovation adoption. Business leaders need to evaluate if a business model is consistent with the current priorities of their existing business model (Christensen, 2016). The greater the top management support, cascaded down to the whole organisation, the higher the MC adoption intention propensity.

Financial resource could be considered specifically as the financial resources committed to MC. Zhu and Kraemer (2005) suggest that the greater the resource commitment, will lead to more MC business applications being adopted and used by the organisation. Some business models call for financial resources in the form of cash, credit lines, stock options and so on (Osterwalder and Pigneur, 2010). Other financial resource options as part of MC business model include consideration around

investment in subscription-based licencing versus capital investment. It also includes the option to adopt open-source technologies versus closed in-house or 3rd party software licenses. Organisations with access to such financial resources will have a higher propensity to MC adoption.

External capability factors

From the literature, two variables that are aligned with the business model to be considered are partner network and external pressures. The external capabilities affect adoption behaviour in different ways (Frambach & Schillewaert, 2002).

Partner networks describe the network of suppliers, vendors and partners that make the business model work. From the MC adoption perspective, this could include strategic alliances formed with MC vendors to optimise their business model, maintain MC infrastructure and reduce risk exposure.

Picoto, et al., (2014) suggests that external pressures from competitors and business partners influence MC adoption usage in organisations. Such pressures include those pressures from government, competitor, mobile network providers that could impact on the business model in terms of adoption intention.

3.2.4. Customer-side of MC adoption (customer segment)

The customer-side adoption examines the individual customers factors impacting MC adoption intention. The customer segment represents the group of people or individuals (B2C) that an organisation aims to reach and create value with its “unique” MC innovative offering. According to Zeithaml (1988) customer’s perceptions of what is received versus what is forfeited in return, determines the customer's overall assessment of the value of the product or service offered by an organisation. Whereas, the customer segment breaks the total market down to identify its target customers specifically (Osterwalder & Yves, 2010). Three main constructs influence the business model and adoption antecedents: the customer characteristics, the perceived benefits (in terms of

“gains”¹⁸ of adopting MC related service) and the perceived sacrifice (in terms of “pains”¹⁹ with adopting MC or using the service). Each consist of several other factors relating to the business model and contribute to the understanding of individual adoption factors.

Customer characteristics

The job or problem the customer is trying to solve is considered important when considering MC adoption. As what is considered important on the business side might not be so from the perspective of the customer. Osterwalder et al. (2014) suggest that these problems could either be a functional, social or emotive task.

Innovativeness is considered as the degree an individual adopts technology at a relatively early stage than others (Rogers, 1983). Research suggests that consumers with higher levels of innovativeness are expected to develop a higher perception to innovation acceptance conveying that consumers’ familiar with EC and internet shopping as a channel are more likely to adopt MC based on previous experience influencing their attitudes (Moshkovich, 2013).

Trust as literature suggests (refer to section 2.4.4 mCommerce and Trust), between individuals and organisations could vary. In this case, the research refers to individual consumer trust as the affective attitude of optimism that the goodwill and competence of another (i.e., the organisation) will extend to cover the domain of interaction (Jones, 1996). Trustworthiness therefore examines individuals’ affective attitude towards MC and service providers. This in line with Feng li (2012) suggestion that trust increases as user's intent to use.

Customer perceived benefits (gains)

The customer perceived benefits (gains) include both utilitarian and hedonic benefits.

¹⁸ According to Osterwalder & Yves, (2010) as part of the customer profile “gains” relates to benefits, delights, things that make it easier to adopt the product or service.

¹⁹ Whereas “pains” relate to negative experiences, risks or undesired costs associated with getting that job done.

Utilitarian benefit relating to the degree that an individual believes using MC will support achieving a task (goal-oriented and process-driven). By identifying customer perceived gains, in terms of whether they are required, expected, desired and unexpected; organisations should factor this variable into the MC innovation system. Similarly, the greater the perceived benefit that includes attributes of the TAM (PU and PEOU), the greater the MC adoption intention. With the anytime, anywhere attribute of MC, customers must see a clear path to delight, usefulness and expectations of performance. Customers also have to have a perceived sense of ease of use of MC technology is the simplicity, pleasing sense of community and derived value. For example, ease of sign-up, convenience and in-mobile moments.

Hedonic benefits relate to the experience derived from the multisensory, emotive, and entertainment aspect associated with using a service (Babin et al. 1994; Holbrook 1999). In understanding customer characteristics influencing consumer decision to adopt MC, it is considered essential in the retail mobile experience (Yang, 2010; Parker and Wang, 2016). Hedonic (experiential and emotive) benefits should therefore be considered in the business model.

Customer perceived sacrifice (pains)

Customer perceived sacrifice (pains) could be measured in terms of monetary and non-monetary factors. Monetary sacrifice is considered as the money consumers pay for a product or service; the price of mobile phones, network charges and the mobile applications. Organisations should consider the distinct types of customer pains (undesired outcome, obstacles or risk) and to what extent they can be managed before, during, and after adopting MC to get the job done.

Non-monetary sacrifice entails perceived risk, privacy, security, anxiety or stress and trust concerns in adopting MC to get a job done. The greater the perceived benefits over the perceived sacrifice in creating value, the more likely are customers MC adoption intention as means to get the job done.

3.2.5. Business value flows

The value flows are as important as the business model pillars as it explains how value is proposed by the retailer, how value is perceived by the customer, how value is co-created between the customer and the organisation and how value is realised (business outcomes) for both the retailer and the customer. Customer value has been examined in a wide range of contexts and may involve the creation and provision of value for the customer, customer value for the organisation, and perceived value for the customer (Martín, et al., 2012).

Value proposition

The value proposition can be described as the statement of benefits that are delivered by the firm to its customers. The value proposition here is considered as the way businesses differentiate their “product” offering from those of their competitors to create competitive advantage. through their use of “unique” MC features to create value.

Value perception

The value perception is considered as the trade-off between what customers are expected to receive (in terms of benefits, quality, service) and what they are expected to sacrifice for it (in terms of price, risk). In providing a definition that examines different facets of perceived value, Zeithaml (1988) considers consumer value perception to be what is received and what is given in determining the overall assessment of the utility of a product. Value perception or perceived value has been used to explain consumer adoption in the context of product or service (Kim et. al, 2005; Madan and Yadav, 2016). Kim et al. (2005) explained perceived value in terms of acquisition value and transaction value. With Sheth et. al. (1991) exploring functional value, social value, emotional value, epistemic value and conditional value. Similarly, Holbrooke (1999) proposed a typology of perceived value that includes: convenience, quality, success, reputation, fun, and virtue. These definitions have however explored value only from a single positivist dimension. Kim (2005) considers benefits and sacrifices needed to

acquire and/or use technology. For customer value perception to occur, a cost versus benefits approach to MC adoption is therefore embraced.

Value co-creation

Here, the customer is deliberately involved by virtue of location, disposition or support availability in the co-creation of MC product or service. Customer value is experience driven, co-created, and context dependent (Vargo and Lusch, 2004). It is an outcome of customer integration and value co-creation efforts (Carbone, 2004; Meyer and Schwager, 2007; Vargo and Lusch, 2008). In an MC adoption context, the research considers possibilities that are rather opportunistic, naturally occurring and time dependent. This accounts for both access constraints and hinderances to co-development of MC potential based on interaction.

Value realisation and outcomes

Consumer value is generally construed to be a post-adoption evaluation dependent on perceived value, expectations and confirmation/disconfirmation to the degree) of discrepancy between actual and expected service quality. Value is realised by individual actors as an outcome of the service co-creation process (Hilton, et al., 2012). We argue through Figure 3-1, that this applies whether value outcome is realised immediately, or over time. Until realised, the behavioural adoption intention represents value potential for the customer and organisation.

The value outcomes represent the impact on organisations performance as well as the customer value it creates in the process. A good business model is considered as one that provides value to the customer and at the same time provides the enterprise with a significant proportion in revenue (Teece, 2010). According to Zhu and Kraemer (2005), MC value refers to the impact of MC use on firm's performance. The higher degrees of MC usage will result in organisation performance improvements (Picoto, et al., 2014). Organisational performance is measured by three major activities along the value chain: downstream sales (i.e., increasing sales and improving customer services),

upstream procurement (i.e., reducing inventory and procurement costs; and internal operations (i.e., increasing employee productivity and making internal processes more efficient) (Zhu et al. 2004).

By customer value we refer to the bond established between a customer and a retailer, after a customer has used a product or service of the retailer and found the product to provide an added value (Butz and Goodstein, 1996 p.63 as cited in (Woodruff, 1997)). Customers form a perception of what the value is about, either prior to purchase or constructed at the time of use (Oliver, 1997) (i.e., desired value). Additionally, refers to evaluative feelings before use of product or service versus actual received value. During the “job to be done” choice task, the customer may predict desired value of MC but during the use “jobs actually done”, the customer experiences received value. Therefore, the value that each customer received of the organisation may determine their use of MC, which has a positive effect on organisations’ perceived performance. The research argues that the value outcome can therefore be examined from two perspectives: the organisations’ performance and the customers’ value. Since organisations use MC with the main intention of improving performance (Stieglitz & Brockmann, 2012), driven by the level of customer satisfaction (value).

Other value flows including value demonstration, relating to sustainable value proposition, is beyond the scope of this research, since a longitudinal study to examine the extent to which total value derived from MC adoption sustained is not performed, rather MC value is explored at a point in time.

3.3. Summary

This chapter argues for a more holistic framework to explore MC adoption and acceptance from both business and consumer perspective. The proposed multilevel conceptual framework is presented through the proponents of the business model framework (Osterwalder and Pigneur, 2003, 2010; Johnson et al. 2008; Teece, 2010; Chesbrough, 2010). A value-based MC adoption framework has been developed that examines MC technology, the business-side to MC adoption, the customer-side to MC adoption and the business value flows of value proposition, value perception, value co-creation and value realised from adopting MC.

Chapter 4: Research methodology

This chapter presents the researcher's philosophical grounding and understanding and how this has underpinned the research approach, design, methodology and methods applied. The researcher employs a case study approach, based on a convergent mixed-method design, to explore drivers of B2C MC adoption and acceptance and the extent to which MC adoption by organisations create and sustain value within the Nigerian retail sector. The research paradigm explains the philosophical grounding and position of the researcher; followed by the research approach and design adopted; the research method explored, with a focus on the pilot study and sample size; the field study including data collection, data analysis technique and reporting is presented; the validity, reliability and ethics consideration of the research is discussed. A summary is provided demonstrating why and how the research strategy was adopted, limitations and areas for further study.

4.1. Research paradigm – taking a 'pragmatic' approach

This research is aimed at understanding influences on MC adoption from an individual and organisational standpoint and its potential for value realisation. The research is aimed at problem-solving through the process of exploration, whilst applying a deductive theory²⁰. While recognising the academic debate between the dichotomy of philosophies between 'realism' and 'relativism' as well as 'positivism' and 'social constructivism' (Easterby-Smith, et al., 2015), the research draws on a pragmatic middle ground (embracing plurality of methods), with an underlying philosophy that informs quantitative and qualitative data collection.

4.1.1. Ontological position

Ontology relates to the nature of reality, truth and existence of what is being researched. Ontology provides a separate way of viewing phenomena, explained through differing but connected scholarly

²⁰ Deductive theory represents the nature of relationship between theory and social research that draws upon what is known in the technology adoption domain and theory to present observation and findings (Bryman, 2016, p. 21)

perspectives. It is considered as the substantive content under investigation (McLachlan & Garcia, 2015). In social sciences however, ontology is viewed within the nature of 'social entities' and its 'actors' (that is, those that can or cannot influence it). According to Bryman (2016) and Dudovskiy (2018) these social entities can either be considered objective, in which they exist in a reality external to social actors or alternatively considered as subjective (also known as social constructions or interpretivist) where social entities are built up from the perception and actions of social actors. While Easterby-smith et al. (2015) view ontological position from the nature of reality being a single truth (realism) to multiple truths (relativism) to the other extreme, of there being no truth (nominalism). It goes on to suggest that what counts for the truth could vary from place to place or time to time (Easterby-smith et al., 2015; pp. 49).

The supposition under investigation is the take up of MC adoption by retail organisations in Nigeria is at a nascent stage. The research questions aim to provide an understanding as to why organisation MC adoption rate is where it is in Nigeria, as well as how and why these organisations may choose to adopt it. Acknowledging Bryman's view, the reality is that at the organisational level, it is strongly influenced by the individuals' that manage, work and interact within it and the environment in which it operates. Similarly, Anthony Giddens' structuration theory argues that people make society but with resources and 'practices' inherited from the past (Giddens, 1984). The subjective nature of the research is recognised through the interaction with the various stakeholders. The research position is therefore based on the notion that there is no, one single reality to explain the adoption and acceptance of MC by organisations and its consumers but rather there are many truths (relativism) that could influence B2C MC adoption and acceptance. The situational context in understanding MC adoption will therefore influence the research approach adopted. As the 'truth' on the adoption of MC by organisations in Western and technological advanced economies could be considered differently to say a developing economy like Nigeria, where the technological infrastructure may not be fully established to support its adoption. Similarly, the timing of the diffusion of innovation, which is the rate innovative ideas or technology spreads (Rogers, 2003) and the technology itself can

influence how that innovation is viewed (from innovator, early adopter, early majority, late majority to laggard) within organisations and among society. It is clear to the researcher that what counts for the 'truth' around the adoption of MC can vary from place to place and from time to time.

The implication of this researcher's ontological position can be considered to influence the choice of epistemology, research approach, research strategy and data collection methods.

4.1.2. Epistemology

Epistemology as a philosophy is related with the study of knowledge (Easterby-smith et al., 2015) and the source of enquiry into knowledge (Dudovskiy, 2018). Within research philosophy, Dudovskiy (2018) considers various sources of knowledge to include: intuitive knowledge (based on intuition, beliefs, feeling etc.) or authoritarian knowledge (based on information from books, research papers, experts in their field etc.) or logical knowledge (based on creation of new knowledge by application of logical reasoning) and empirical knowledge (based on subjective facts that have been established and can be demonstrated). Another interesting aspect in considering epistemology is how the interaction with the respondents generate knowledge (McLachlan and Garcia, 2015). Literature suggests two contrasting views on how knowledge should be generated within social sciences research: positivism and social constructionism. The positivism view suggests that the social world exists externally and can be measured quantitatively through objective methods, with the research based on hypothesis and deduction. Similarly, social constructivism as developed by authors such as Shotter (1993) is based on the view that knowledge is constructed based on interaction of people, their experiences and feelings. From a constructivism perspective, the assumption is that the researcher needs to gather multiple perspectives through a mixture of quantitative and qualitative methods and to collect the views and observations of different and diverse 'actors'²¹ in the research (Easterby-smith et al., 2015; pp 54).

²¹ The term 'actors' are not about TV personalities or film stars, but is used to describe the different people or participants who take part in the development of the research.

While considering how knowledge is acquired and shared, Onwuegbzie, et al. (2009) suggests that within a pragmatic paradigm, knowledge is both constructed and based on the reality of the world we experience and live in. The research is guided by knowledge acquired from the literature with evidence demonstrating that it has been studied through well-grounded and varied theoretical lens following a review of factors influencing MC organisation adoption and individual acceptance in retail as discussed in sections 2.4.2 Organisation level MC adoption theories) and 2.4.3 Individual level MC adoption theories) respectively. To that end, a deductive approach is applied by framing the research questions using the business model and innovation adoption theoretical lens. Additionally, the researchers experience of integrating technologically innovative systems, local knowledge and cultural understanding helped build a required level of engagement and distance with participants, while maintaining an outside-in²² perspective. The research motivation aims to build on knowledge that is applicable to the B2C retail sector to benefit IS practitioners and wider research community.

The phenomenon MC is relatively complex as this study involves both behavioural science (in understanding organisational and user adoption behaviours) and management research (focuses on process relevant to the study of knowledge and problem solving). The research aims to develop a 'holistic' approach to value-based MC adoption model²³, by understanding business model orientation, innovation adoption and acceptance in context. The research applies a mixed methods research paradigm that integrates different research methods to help analyse and interpret the data. Critics of this paradigm (ontologies or realities being mixed) question how can the two world views co-exist? Those that hold this view according to Cresswell (2015) have a 'purist' stance. However, by adopting a pragmatic philosophy, the researcher follows other mixed-method writers and a

²² Level of engagement of the researcher with the research context is one of outsider to the case study organisations but shares an identity, language with the research participants.

²³ Holistic model to value-based MC adoption relates to the multilevel perspective in organisational science that enables a more integrated understanding of phenomena that unfold across levels in organisations (in this case customer and organisation level). This is akin to the General Systems theory (GST) shaped by twentieth century scholars (e.g., Ashby, 1952; Boulding, 1956; Miller, 1978; von Bertalanffy, 1972) of systems concepts originating in the "holistic" Aristotelian worldview that the whole is greater than the sum of its parts (Klein & Kozlowski, 2000)

pragmatism philosophy of “what works” for practice. Certain scholars concede elements of paradigms might be blended together in a study (e.g., see Guba and Lincoln’s tables, 2005; or Creswell’s table of worldviews, 2009c).

Easterby-smith et al. (2015) explored the concept of researcher engagement and epistemology, by looking at two views of detached to engaged within the epistemological dimensions of positivist to constructionist. What can be considered acceptable as knowledge versus what is not acceptable as knowledge within the frame of this research? Eden and Huxham (1996) suggest that an activity may only be called ‘research’, if it produces knowledge with validity outside the context in which it was produced. However, this is contrary to practitioners who engage in action or ethnographic research that immerse themselves in context, to gain a privileged insight into the way things operate within their context. To that end, the researcher maintained an outside-in perspective to the research, by adopting an ‘engaging’ style to the research, drawing on knowledge, experience and cultural dimensions, while at the same time remaining unaffected by personal prejudices.

4.1.3. Philosophy

The researcher adopts a pragmatic approach that seeks the most effective research method and helps answer the research question. The researchers background as a Chartered Accountant which in general deals with measuring, analysing and reporting organisations financial performance would suggest a positivist stance. However, working as a consultant for the past 18years providing organisations with practical IT and Finance solutions to business problems, it is noteworthy that the researchers philosophical grounding may have changed overtime. By adopting a pragmatic approach, the research is undertaken as a practical means of resolve organisation problems (Cameron and Price, 2009). Pragmatism as a philosophical perspective underpins the methodological thread of this research. The philosophy of “pragmatism²⁴ emphasises the practical application of ideas by acting on them to actually test them in human experiences (Gutek, 2014). The research method provides an

²⁴ Pragmatism – problem solving.

opportunity to learn new skills in terms of synthesising both research methods. The research aims to provide recommendations that can be applied to IS domains and practice.

4.2. Research Approach

The research uses a case study approach as a feature of the study by examining the MC phenomenon in-depth. Different scholars have considered multi-case study design as having greater advantage over a single case design. This includes the suggestion that the evidence from a multi-case study is more compelling and robust (Herriott & Firestone, 1983; Yin 2018). Furthermore, case study can be used in combination with other methods as part of a larger mixed method study (Yin, 2018, p. 24) , in line with this research to adopt a case study approach within a mixed methods paradigm. This way, the research answers the 'how' and why' questions to better explore if any, the issue of MC adoption in Nigerian context, which is aligned to the pragmatic epistemology stance of the researcher.

One of the key justifications for adopting a case study approach as against other research strategies such as doing an experiment is that a case study approach is considered appropriate within organisation type studies. Due to the complexity in which the MC intervention is studied: (i) multi-level evaluation of adoption from a B2C context (ii) varied and multiple cause (factors to consider) and effect (adoption outcomes) of MC innovation (iii) the evaluation of MC innovation systems and not just its component parts (iv) multi-disciplinary studies (behavioural and social science as well as management studies), the case study approach is further considered appropriate.

To support the research questions, there is a need to clarify whether the research is adopting a single or multi-case study design. According to Yin (2018, pp. 20, 49, 53) case study design could either take the form of single-case, where it supports the following characteristics of being more in-depth, critical, unusual or extreme, common, revelatory or longitudinal as against a multi-case study, agreeing with Yin, that case studies unlike experiments are generalisable to theories and not statistical generalisation. To overcome this, the research findings are linked to the business model framework and value-based adoption theories (analytical generalisability) and not to the number of cases. This is

actually considered another advantage of case study research as it allows for the development of ‘converging lines of inquiry, through a process of triangulation’ (Yin, 2018, p. 92). Also, the findings of a case study based on several different sources of information are ‘likely to be much more convincing and accurate’.

A drawback of choosing a single-case according to Yin (2018) is that the heavy reliance might be placed on a single-case. This was a factor considered in this research as obtaining access to participants and data from the relevant organisations was fraught with challenges, and reliance on single-case study was considered a risk to the research. A multiple case study²⁵ approach was adopted as an alternative. Multi-cases enable the researcher to draw comparisons that indicate whether the findings are unique to a single-case or constitute a pattern of empirical regularity (Tsang, 2013). Scholars have also considered “comparative design” as constituting multi-case study which entails the studying of two or more contrasting cases, using same research methods (Atkinson and Kintrea, 2001: pg. 2295; Benson and Jackson, 2013; Bryman, 2016: pg. 64-67). The view is that social phenomena is better understood when they are compared in relationship to one or more contrasting cases. This research however does not propose a contrasting “cross-cultural” study (i.e., MC adoption across different regions or sectors in Nigeria) but aims to explore whether each individual case predicts similar results (literal replication) or predicts contrasting results for anticipated reasons (theoretical replication) in line with Yin’s view on multi-case design.

However, multiple case study is not the panacea of case research as it also gives rise to its own problems (if not more) than rich single cases (Dubois & Araujo, 2004, 2007; Beverland and Lindgreen, 2010). One of the main problems being practical concerns in presenting data from large samples of multiple case studies through balancing cross-case summarisation versus losing the richness of individual cases (Strauss and Corin, 1998; Stake, 2005; Beverland and Lindgreen, 2010). Yin (2018), highlighted considerations that can impact a multi-case study design (i.e., the extreme case of best or

²⁵ Where a case study contains more than a single-case, it is said to have used a multiple case study design

worst performing organisation). Also, the needs for significant resources, personnel and time constraints for a single researcher could impact multi-case studies.

The research surveyed multiple retail organisations in Nigeria (see Table 6-2). The research notes that one of the main cases explored could be considered an extreme case as it represents the largest share of online commerce within Nigeria with 27.7% of non-store retailing in 2017 (Euromonitor International, 2018). Nonetheless, due to practical issues associated with organisation access and reluctance to rely on one case, a multiple-case design was more compelling. More importantly, the research sees the analytical benefit of adopting a multi-case design which provides greater robustness (Herriott & Firestone, 1983; Yin 2018) supporting the research position.

The multi-case design of this research considered the number of cases deemed necessary. By literal replication, 13 cases were selected where the organisation has adopted at least one form of MC application. For example, a mobile enabled EC, shopping or payment application. A non-probability sampling logic was applied as the population is not been considered relevant to the case study approach. By replication, the research provides contextual insight for evaluating these organisations and its customers approach to MC adoption. Yin (2013) suggests that by probing a case and its context in depth, such studies will likely include only a selection of small number of cases. Accordingly, a judgement was made as to the number of cases based on the availability of resources. and time due to the researcher, with the following criteria applied:

- Construct validity: the constructs selected form part of the framework as part of the mixed methods case study using multiple sources of evidence:
 - Mobile Commerce
 - Adoption intentions
 - B2C interaction (customer involvement)
 - Customer value (including value proposition, value perception and value creation)
 - Customer adoption determinants (VAM)

- Organisation adoption factors (TOE)
 - Organisation performance (value realised)
- Internal validity: Using logical models to explain
 - the determinants of MC and
 - the effects on customer value and organisation performance
- External validity: As part of the design, the research:
 - defined the theory for the single-case pilot and
 - adopts a replication logic for the wider multiple-case
 - triangulates data and research methods
- Reliability: To ensure reliability of the case, the research aims to develop a case study protocol. The maintenance of data using NVivo and SPSS for managing qualitative and quantitative data will be adopted throughout the research.

Based on this case study design, an initial pilot study using a single-case was performed.

4.3. Research design

A mixed method design within the case study approach was suitably employed. Mixed methods studies are products of the pragmatist paradigm and combine the qualitative and quantitative approaches within different phases of the research process (Tashakkori & Teddlie, 2008, p.22). It is considered acceptable to merge different methodologies together in what Tashakkori and Teddlie (2008) termed “paradigm relativism” (Terrell, 2012).

Three main types of basic design (Cresswell, 2015), focusing on the design purpose, data collection, data analysis, interpretation and validity are considered.

Explanatory sequential design

Here, the results of the quantitative analysis are used as basis for informing the design of what data is to be collected as part of the qualitative study. It uses qualitative strand²⁶ to explain quantitative results such as level of significance. It is usually a two phased design in which the quantitative data is collected and analysed first, followed by collection of qualitative data and analysis (Cresswell, 2015). Once qualitative data is collected and analysed, inferences is drawn on how the qualitative findings help to explain the quantitative results.

This design was applied by Hampshire (2017) of UK consumer perception of trust, risk and usefulness of mobile payments where quantitative analysis of the questionnaire data was followed by semi-structured interviews that produced qualitative data for content analysis was performed to explore the UK consumers' perspective.

One of the benefits of this design is that it is relatively straight forward as it is based on two distinct phases of research that build on top of each other (Terrell, 2012); however, its main drawbacks include: time consuming to implement two sequential phases, decision regarding what quantitative results require further study, who to sample and what sample criteria to include as part of the qualitative study.

Exploratory sequential design

The purpose of the exploratory sequential design is to study a problem by first exploring it through qualitative data collection and analysis. By examining the results of the qualitative analysis, this is then used to design a quantitative element such as measures, instruments etc. that forms part of quantitative data collection and analysis in which the new instruments are put to the test. An inference is then drawn based on the findings. It is used in studies where the phenomenon is understudied or

²⁶ A strand refers to either the qualitative or quantitative elements of a study (Cresswell, 2015, pp. 37-38)

the constructs are not well developed, or the context of the study may require the need to explore the constructs that might work in the setting (Cresswell, 2015, p. 41).

Picoto, et al. (2014) adopted an exploratory mixed methods research (MMR) design in which study-one sort to validate the m-business value through initial in-depth semi-structured interviews while study-two used the findings to formulate the research hypothesis and constructs to develop a questionnaire analysed using confirmatory factor analysis (CFA).

This design is considered to have design rigor, however, similar to the explanatory design there are some drawbacks that include the time-consuming nature of the design especially as both phases will probably require similar priority and focus (Terrell, 2012).

Convergent parallel design

A convergent mixed-method design is used for triangulation, merging, comparing and contrasting of quantitative and qualitative data to determine the extent of agreement between the two data types (Creswell & Plano Clark, 2018). The research design aims to examine the extent to which an integrated value adoption framework be developed as a holistic approach to MCA from both the business and consumer's perspectives. One data collection method does not inform the other but rather it uses different methods in a combined manner to address the MC phenomenon within the Nigerian Context (triangulation). The convergent design involves separate collection and analysis of quantitative and qualitative data with the intent to merge the results and develop inference (Cresswell, 2015). This aligns to the benefits of adopting this design as the researcher considered it useful gathering both forms of data while in the field and it also lent itself to the ability to gain 'multiple pictures' (Cresswell, 2015) of the MC adoption problem from several angles, specifically the organisation and customer perspective. It also offsets the weakness of using a single design by applying both methods (Terrell, 2012; Cresswell, 2015; Creswell & Plano Clark, 2018). The design encountered some challenges with the researcher not limited to the effort, time and expertise required in using different methods. It is difficult to compare two types of data as well as resolve discrepancies that arise (Terrell, 2012).

The research adopts a convergent mixed-method design that aims to collect and analyse both data from a single-phase study involving three steps: (i) data collection; (ii) data analysis; (iii) merging and interpretation (see Figure 4-1). Both quantitative and qualitative data sets were gathered between April and May, 2019 in Lagos, Nigeria following initial pilot study.

As part of the MMR design, the follow research activities were integrated:

- Data collection – within the survey data (5 open-ended questions and 27 closed-ended questions); within different methods (quantitative survey data and qualitative semi-structured interview data)
- Data analysis and interpretation – by merging the data, the results of both the quantitative data and qualitative data analyses is integrated using a JDA to compare both customer and organisation perspective of MCA.

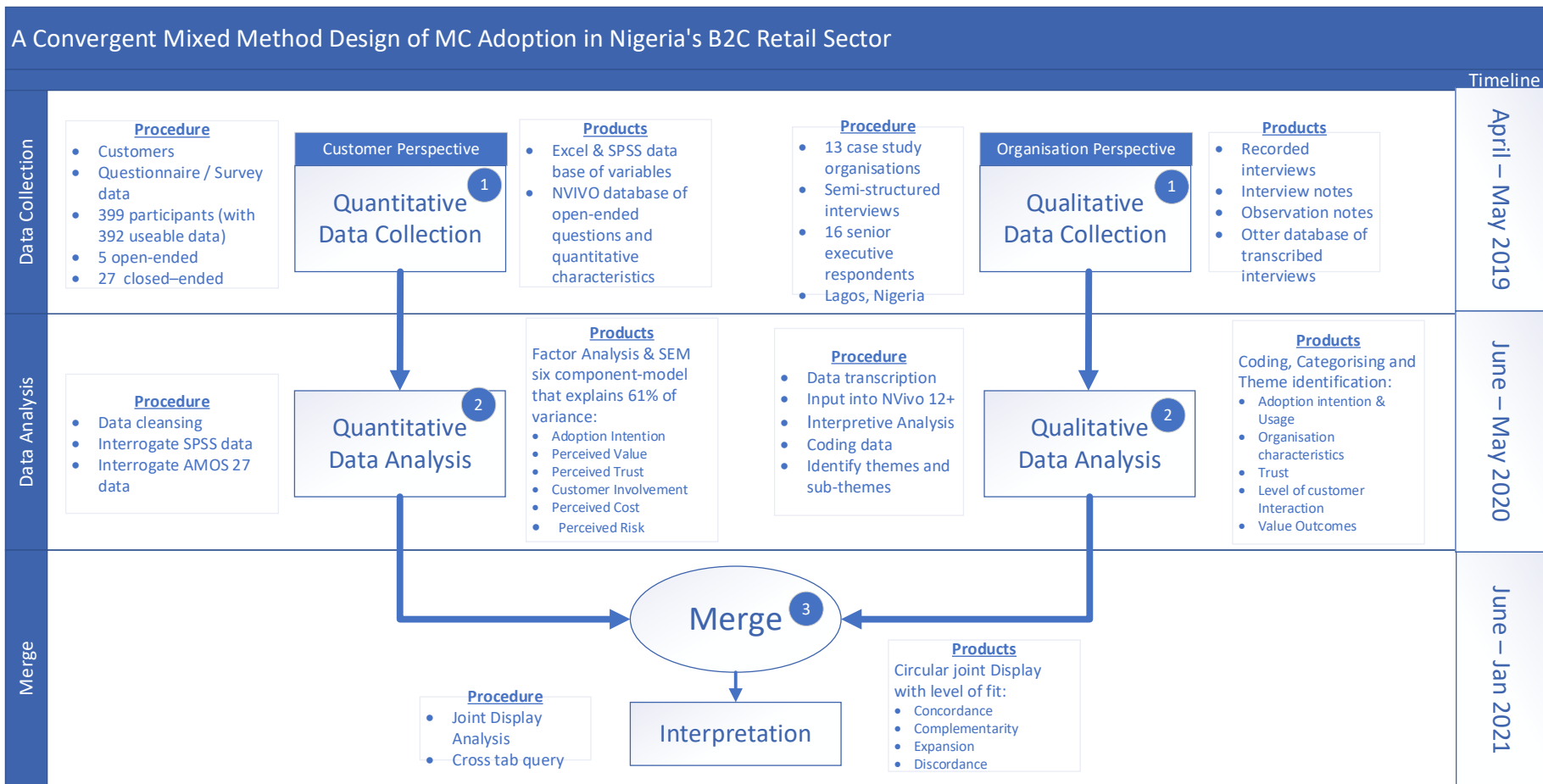


Figure 4-1: Mixed Methods convergent design - adapted from (Cresswell, 2015)²⁷

²⁷ The mixed method convergent design adopted in the research shows the three steps adopted. Within each step, it defines the procure applied (e.g., participants) and the products produced (e.g., SPSS database of variables). It also identifies the timelines when data was collected.

4.4. Research methods

To start collecting data, for this thesis, relevant ethics approval from the Ethics committee was obtained from the University of Herefordshire (Protocol number – 03388) to allow the researcher to conduct studies involving human participants.

The research aims to utilise multiple data sources; documents, semi-structured interviews and survey to provide convergent evidence., whilst adopting a case study mixed methods research approach (Yin, 2018; pg110).

4.4.1. Pilot study

The aim of the pilot study was to test the qualitative research questions relating to organisation MC application adoption and the consumer survey to validate the questions for appropriateness and make amendments as required.

The survey questions were developed using Google forms and was tested with half a dozen friends and the supervisory team to ensure that the questions were easy to understand and free from ambiguity.

While the semi-structured interview protocol was piloted with an organisation in Nigeria by interviewing the CEO and founder of a MC stock exchange application platform to evaluate the understanding of the interview questions and findings. The general questions (size of organisation, number of employees, mission/vision.) provided demographics type information of the pilot case study organisation. Based on the feedback, some questions were found to be multi-dimensional and unclear, so they were split into two parts or re-phrased for the actual study. The results from the pilot study suggested the need to clarify the definition of MC to participants. The pilot study provided the opportunity to corroborate other evidence from participants, especially on questions relating to “customer value” of MC. For example, one respondent stated:

“Our customer reviews on the App stores suggest that we have filled a gap that has long existed in the space. Please feel free to have a look at our reviews on Google play store.”

This resulted in updating the research method to include physical artifact observation and opportunity for further data triangulation, providing a robust analysis of the data collected.

The questionnaire and survey instruments were redesigned based on feedback which led to a revised set of questions and created new avenues for research. See appendix 10.3 and 10.4 for updated research protocol relevant to the field study.

4.4.2. Sample size

As part of the data collection method, the sample comprised two sets of participants as two different units of analysis were involved (customers for the survey data and retail organisations for the semi-structured interview). Different units of analysis should work well in a convergent design as the objective is to compare the different perspectives (Cresswell, 2015, p. 78).

Using convenience sampling, the customer sample size was **392** useable questionnaires out of a total Nigerian population of 206m upon saturation. This limited the potential for subjective bias, with respondents selected without any prior knowledge (Bryman, 2016, p. 177).

This exceeded the total proposed minimum sample size of **384** customers (where Z = Confidence level of 1.96; P= percentage level for picking a choice, expressed as decimal (0.5 used for sample size needed); e = Confidence interval (margin of error (or “plus or minus 5%” error)).

Where: SS is Sample Size (minimal estimate) (Momentive, 1999-2022):

$$\begin{aligned}
 \text{SS} &= \frac{\frac{z^2 \times P \times (1-P)}{e^2}}{1 + \left(\frac{z^2 \times P \times (1-P)}{e^2 N} \right)} \quad (\text{for 95\% confidence level, } Z = 1.96) \\
 &= \frac{1.96^2 \times .5 (1-.5) / 0.05^2}{1 + (0.9604 / 0.05 \times 206,000,000)}
 \end{aligned}$$

$$= \frac{0.9604 / 0.05^2}{1 + (0.9604 / 515,000)}$$

SS = 384.16

This shows that the slight increase in the sample size, increases the precision of the survey participant sample and the 95% confidence interval reveals the level of generalizability to the population size.

A purposive and snowball sampling approach was applied to the qualitative data collection. All **16** case study organisations were selected based on meeting specific criteria (for example, must have an online presence) and this was deemed sufficient following data saturation from semi-structured interviews.

The research opts to accept the differences in the MMR sample size as both sets of data tell different stories and when jointly analysed, provides for richer research findings as opposed to other scholarly view that suggests sample size between quantitative and qualitative data is same or weighted (Cresswell, 2015).

4.5. Field study - data collection

Details of how the data was collected are explained in sections 4.5.1 and 4.6.1 below. Quantitative and qualitative data were collected at about the same time as part of the first step in MMR design to obtain a more comprehensive view of the MC adoption phenomenon and to gather data from two different perspectives (customer and retail organisation) (Cresswell, 2015). Qualitative data was gathered from open-ended (semi-structured interview with organisation participants; and customer open-ended survey questions) and quantitative data collected from closed-ended survey data.

4.5.1. Qualitative data

4.5.1.1. Documentation

Publicly available information; Published annual reports, official statistics from Nigerian Statistical Association (NSA), National Bureau of statistics (NBS), Central Bank of Nigeria (CBN), trade journals, internet search data, press and social media articles and organisations website data were used. These documents when combined provided a broad perspective of the problems associated with Nigerian

MC adoption. Information such as, the size of the organisation, number of years trading was obtained from the company website while financial information around organisation performance pre and post adoption of MC was not provided. Information from feedback portals helped complement topics around the customer journey and customers' perception with regards experience or service of MC was gathered.

4.5.1.2. *Semi-structured interviews*

To answer research question one and three, semi-structured interviews were adopted. 16 semi-structured interviews were conducted across 13 organisations over a four-week period in Lagos, Nigeria. Four organisations were initially identified using purposeful sampling and contacted via the research gatekeeper²⁸ prior to field visit. Using a purposeful sampling strategy increases the theoretical generalisability of results (Yin, 1994; Yin 2015; Denscombe, 2014 pg. 61). Due to the difficulty in getting consent from other organisations, a 'snowball' sampling approach was further applied after contacts and recommendation to other organisations that met the criteria was provided from the initial core organisation executives and managers. The method of "knocking on doors" and requesting direct access to senior executives in their office domain worked very well as opposed to email. The organisations were very keen to engage their staff, share their experience and contribute to the research.

The interview questions highlighted specific sub-themes based on the theory identified from the review of literature. Tornatzky and Fleischer's (1990) TOE framework proved useful in understanding the organisation adoption factors. By selecting a semi-structured interview approach, the research was able to probe deeper into the Nigerian retail context (see Appendix 10.3 Qualitative semi-structured interview protocol).

²⁸ A gatekeeper in research is a person who stands between the data collector and a potential respondent. They provided organisation consent and access to executives and managers in their representative case study organisations.

These organisations represent the B2C retail sector in Nigeria covering retail pharma, general retail merchants, fashion and apparel and mobile phone retailers. The semi-structured interviews were conducted either face-to-face on the organisation premises or over the telephone allowing flexibility in fitting with respondents' availability and limitations of Lagos traffic travelling to some of the organisations. By using multiple respondents, the researcher has increased both the reliability and the validity of the study (Bagozzi et al., 1991; Kumar et al., 1993). See Table 6-1 for data collection procedure and participating organisations interview schedule. Interview discussions were audio recorded in order to be reviewed, transcribed or compared with handwritten notes and journal.

4.5.1.3. Observation of physical artefacts

Artifacts can be defined as things that are manmade (Simons, 1996; Dresh et al. 2015). To provide insight into the 16 organisations' MC operations and understand the customer journey, relevant evidence that formed part of the qualitative analysis, were gathered from examining each organisation mobile related footprints (such as level of mobile website optimisation and visualisation, social media usage, mobile application usage and customer reviews) – see Table 6-3. This data was collected over a period of time throughout the research (February 2019 to August 2020) to substantiate the research data collected from organisation perspective and customer insight of the perceived value of using MC applications.

4.5.2. Quantitative data

4.5.2.1. Questionnaire (survey)

Convenience sampling approach was applied with 392 usable surveys completed. Respondents included customers exiting the major shopping malls in Ikeja, Lagos. Customers' were approached as they completed their shopping and engaged with the researcher following an informed consent to take part in the study. In addition, participants were reached online by distributing the link to the online version of the customer survey via e-mail with friends, family and organisations' customer contacts across major cities in Nigeria -Lagos, Abuja and Port Harcourt Convenience sampling strategy

was applied in order to obtain the views of cross-section of B2C customers (not just in Ikeja, Lagos), due to virtue of accessibility as against other sampling approaches such as quota sampling²⁹ or systematic sampling³⁰. The questionnaire was made available both online through google forms to reach individual consumers with a mobile device interest and in paper form, completed face-to-face with customers as they exited the stores of some of the major retail outlets in Ikeja-Lagos area of Nigeria. As a result, the data collection strategy supports the potential to reach a reasonable number of participants from diverse backgrounds and to obtain a broad spectrum of data (Hackley, 2003). This method was found to be convenient, providing a wide scope of data coverage and addressed the problem of incomplete online forms (making questions mandatory) or duplicate forms submitted from same IP addresses. For the paper questionnaires completed face-to-face, the interviewer engaged with respondents over a 4-week period in April 2019.

To ensure that the empirical data address the research objectives, a significant number of questions were adapted from previous mobile commerce adoption research as this is an effective approach (Bryman, 2012). See Appendix 10.4 Quantitative questionnaire survey protocol for survey protocol.

4.6. Data analysis techniques

Details of the tools and techniques used to analyse the dataset is explained in sections 4.6.1 and 4.6.2 below as part of the second step in the MMR design.

4.6.1. Quantitative data analysis

All self-administered questionnaires (paper and electronic) were captured in google forms. The data was then downloaded and cleansed in excel prior to data analysis performed with the aid of software tool - IBM SPSS³¹ 27 and IBM AMOS 27. The statistical analysis performed involved checking to see how good the sample size was to determining the level of bias, sampling error and level of fit.

²⁹ Quota sampling relates to sampling that reflects a population in terms of relative proportion of individuals in different categories such as age, gender or socio-economic group (Bryman, 2016, p. 188)

³⁰ Systematic sampling refers to the process of systematically selecting units within a sampling frame (Bryman, 2016, p. 178)

³¹ SPSS (Statistical Package for the Social Sciences)

Exploratory factor analysis was conducted to determine the underlying dimensions of MC characteristics in Nigerian B2C retail sector. Confirmatory Factor Analysis (CFA) and Cronbach's Alpha (α) was applied as a basis to check the model fit, validity and reliability of the variables as well as establish inter-variable reliability. For hypothesis testing, the study employs Structural Equation Modelling (SEM) commonly used in MC quantitative analysis (Chong, 2013; Yadav et al. 2015; Liébana-Cabanillas et al. 2017). There are two SEM approaches: covariance-based SEM (CB-SEM) and variance-based SEM using Partial Least Squares (PLS-SEM). Details of the SEM analysis are explained further in section 5.4 below, with CB-SEM applied to the research.

4.6.2. Qualitative data analysis

Interviews were digitally transcribed using Otter.ai software. The recording and transcription of interviews is considered essential, not to get distracted with note taking (Bryman, 2016, p. 479), whilst detailed attention to language, conversational or discourse analysis is necessary. Textual data was obtained from semi-structured interviews, the organisations website pages and the open-ended questions in the questionnaire were analysed using NVivo 12 Pro. This tool was chosen as an aid for searching, reporting, retrieving text, and video images, data manipulation, modelling various data types, and to categorise data into themes and subthemes. This is as against selecting other Computer Assisted Qualitative Data Analysis software (CAQDAS) tools. It is also suited to a mixed method analysis, as information about demographic i.e., customer age, education status was calculated and the results saved as an SPSS file (.sav) for further analysis, running matrix as well as crosstab queries.³² Thematic data analysis was preferred over other qualitative data analysis methods such as content, discourse, narrative or grounded theory.

³² In NVivo for windows, crosstab queries create tables with codes in rows and cases or attributes in columns while matrix query is a powerful analytical tool that shows intersecting coding between relevant items or attributes (e.g., file, cases, codes or classification and attributes)

4.6.3. Merge and interpret data

Using a JDA technique, the researcher examined the extent to which quantitative results are confirmed by the qualitative results and vice-versa (Cresswell, 2015, pp. 36-37) and level of inference. Following the examination of quantitative and qualitative results separately, the third step is to merge the results to create a joint display, where results lead to: same interpretation or inference (concordance); different interpretation (discordance); merging and non-merging interpretations (expansion); different but non-conflicting (complementarity). Figure 7-4 shows how both data are merged, interpreted and inferenced.

4.7. Data reporting

The findings are presented as part of this DBA thesis, which explores if and how MC adoption can result in customer value while at the same time resulting in organisation performance (or not). The researcher aims to publish findings in articles as Information System Research (ISR) journals to appeal to both academics and practitioners alike.

4.8. Reliability and validity

Overall, the survey questionnaire employed for data collection indicated significant construct validity and test reliability as demonstrated in Table 5-2. Other strategies applied for assessing reliability and quality (especially as part of qualitative and MMR) includes applying data triangulation across multiple data sources, multiple research methods and multiple theories leading to consistency in interpretation. Similarly, applying reflexivity (see section 8.6.1- Reflexivity) of MMR enables one own values, beliefs and bias to be assessed.

4.9. Ethical consideration

As part of ensuring ethical standards were followed, research was carried out in a way that satisfies ethical requirements of the University of Hertfordshire. There is need to consider ethical issues in research involving human participants (Sales & Folkman, 2000). To achieve this, the Universities EC3

– Consent form were used prior to data collection from the case study organisations and individual participants for the purpose of this research. The following were explained:

- The purpose of the research
- Option for participants to take part
- Age restrictions (=>18years)
- Duration of participation (max 1hr interviews)
- Level of involvement and expectation of participants
- potential benefits of the outcome of the study (provision of valuable insight)
- Anonymity and confidentiality of data collected, including the use of audio recoding
- A statement confirming that the data collected will be stored securely and solely used for the purpose of the research
- Name and address of the university faculty that reviewed this study
- Researchers protocol number
- Name and email address of researcher should they need to be contacted

Prior to commencement of the study, the research was vetted by the University Ethics Committee. Organisation participants were pleased to take part in the study and signed copies of the consent letter. The informed consent process ensured participants were informed about the purpose of the research, the expected duration and procedures, their right to decline to participate or to withdraw from the research at any time, and consequences of doing so. There was no risk identified in the research as complete anonymity was agreed and no personal information was collected. For the customer survey, the purpose of the study was explained and only participants that voluntarily consented, completed the questionnaire. Following data collection, questionnaires where age demographic was less than 18 years, were excluded resulting in total of 392 usable surveys.

4.10. Summary

The methodological approach for the rest of the study, is one of a pragmatic paradigm. A convergent parallel mixed method within a case study approach, provides valuable insights into the MC phenomenon, as the value proposition draws on the relationship between organisation adoption and customer acceptance.

Chapter ends

Chapter 5: Customer MC acceptance – findings from quantitative analysis

This chapter addresses the research objective aimed at identifying the antecedent factors influencing customer MC adoption behaviour intentions within the Nigerian B2C retail context. A quantitative analysis of the questionnaire data is undertaken by applying a descriptive demographic analysis (i.e., gender, age, employment status, mobile network and phone device usage). 22 items were examined, following data from Likert scale type questions (with numerical code ranging from 1 for strongly disagree to 5 for strongly agree), which reflect the respondent's subjective criteria (Bryman, 2012). The 5-point Likert scale as against other scales was selected to enable respondents understand the options to choose from and to reduce respondent frustration. It is also considered a commonly used scale in MC studies (Chang and Chong 2012; Stamopoulos et. al., 2014). A total of 392 usable customer survey responses was selected to test the quantitative research hypothesis.

A descriptive analysis of customer participants and their demographic background is presented. Next, the reliability and validity assessments of the scales is presented. within the context of the case study. The validity of the conceptualized MC adoption model is assessed. The reliability of model variables is determined by considering the value of Cronbach's alpha coefficient for each construct, and individually each provided results within or above the threshold values. In addition, the convergent and discriminant validity, is tested using CFA. To test the hypothesis, Structural Equation Modelling (SEM) is used to understand the inter-relationships between the direct and indirect effect of latent variables on MC adoption outcomes. Data analysis was conducted in IBM SPSS Statistics 27 and IBM SPSS Amos 27. The findings are presented to demonstrate the significant level of the seven-hypothesis defined.

5.1. Descriptive analysis

A total of 399 questionnaires were collected from respondents and after initial assessment, seven incomplete or invalid questionnaires were discarded, total usable questionnaires equal to 392 (refer

to Table 5-1). Analysis shows of the 392 participants, 32% (126 respondents) were female and 67% (264 respondents) were male. In 2019, the total Nigerian population of 201 million by gender was 51% male (102 million) and 49% female (99 million) (Statista, 2021).

The age demographics of the sample is as follows: 31% (18-24yrs); 37% (25-34yrs); 21% (35-44yrs); 11% (45 and above). In 2019, about 53.6% of Nigeria's 201 million population were aged 15 to 54 years, 43.6% aged between 0 and 14 years, and only 2.8% of Nigeria's total population were aged 54 and above (Statista, 2021), representing a young population.

Table 5-1: Descriptive demographic variables of customer survey participants

Measure	Item	Frequency	Percentage	Cumulative Percentage
Gender	Female	126	32.2	32.1
	Male	264	67.3	99.5
	Prefer not to say	2	.5	100.0
Age	18 - 24	123	31.4	31.4
	25 - 34	143	36.5	67.9
	35 - 44	84	21.4	89.3
	45 and above	42	10.7	100.0
Employment Status	Employed	167	42.6	42.6
	Self employed	91	23.2	65.8
	Unemployed	3	.8	66.6
	Undergraduate	83	21.2	87.8
	Post graduate	36	9.2	96.9
	Retired	2	.5	97.4
	National Service	10	2.6	100.0

The employment status shows that 65.8 percent of participants were either employed or self-employed and 30.4 percent representing under graduate or post graduate students. In 2019, the unemployment rate in Nigeria was at approximately 8.1 percent (O'Neill, 2021) and when compared with the sample, is below the national average.

As part of the descriptive analysis, the customer MC adoption intention was also assessed in terms of mobile phone usage (smart phone³³ versus feature phone³⁴), network usage, and mobile application usage. The result showed 82% usage of smart phones against 18% feature phones (GSM), which is in line with the literature that suggests a growing rise in smartphone adoption in African nations (GSMA, 2020) and supports the proposition that the more usage of smarter phones (with Z attributes) by Nigerians, the more likely they are to adopt MC. The mobile phone adoption rate was determined by calculating the percentage of respondents who reported in the questionnaire that they had a wireless (handheld) enable phone. See Figure 5-1. This supports the view that majority of the sampled population have at least one mobile phone device with android smart phone identified as the most popular choice with 69% of the sample. The explanation for the popularity of android OS phones can be attributed to the influx of phones from China with brands such as Techno, Infinix, Huawei etc. This significance will be further discussed as the MC adoption is explored from an organisation’s perspective.

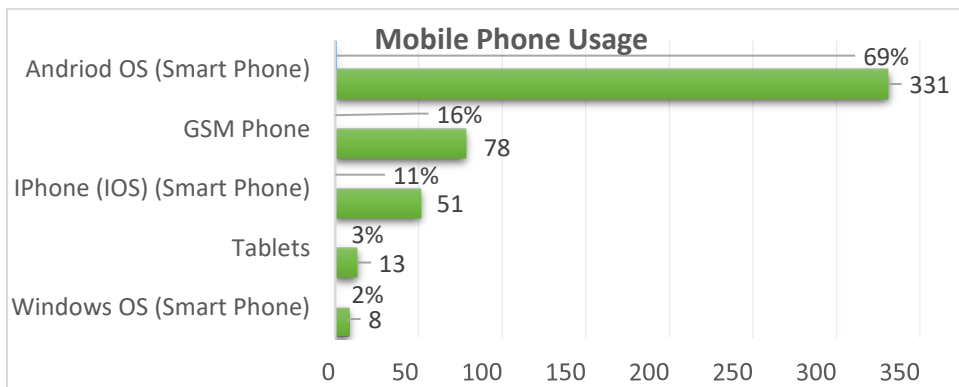


Figure 5-1: Customer participants mobile phone usage

Evidence shows that MTN is the most popular mobile network with 37% of respondents (see Figure 5-2). However, respondents suggested that they had to subscribe to more than one mobile network. The sentiment shared by respondents in the field suggested this as a “must have”, to enable access to

³³ Smart phone is a portable device that combines mobile telephone and computing functions into one unit.

³⁴ Feature phones is a type of early generation mobile device that provide voice calls, text messaging and basic multimedia and internet capabilities.

multiple network coverage, flexibility in use of mobile and voice data tariffs, cost savings across multiple networks, access to individual network incentives and remove the reliance on a single network were sighted as reasons for having multiple networks. The ability to have smart phones with dual sim card capability built in specifically for the African market was a driver.

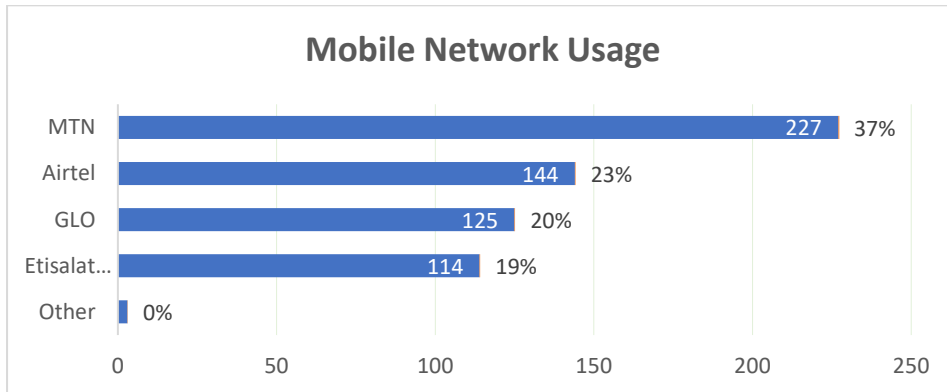


Figure 5-2: Customer participants mobile network usage

MC was measured in terms of the reason for adoption, types and usage of different MC services offered by retail organisations. Respondents were asked to indicate how often they used the different mobile applications on their device. Mobile applications were classified according to six functional categories: Communications, payments, shopping, location-based, mobile marketing and social media. Mahatanankoon et al. (2005), Li et al. (2007) and Ngai, E.W.T. and Gunasekaran (2007), adopted a similar approach to measure MC usage. Social media services such as WhatsApp and Facebook reported the highest usage on a scale of 'Always' to 'Not used', followed by mobile communication services, mobile payments transaction service, location-based services, mobile shopping transactions and mobile marketing having the lowest adoption rate – see Figure 5-3.

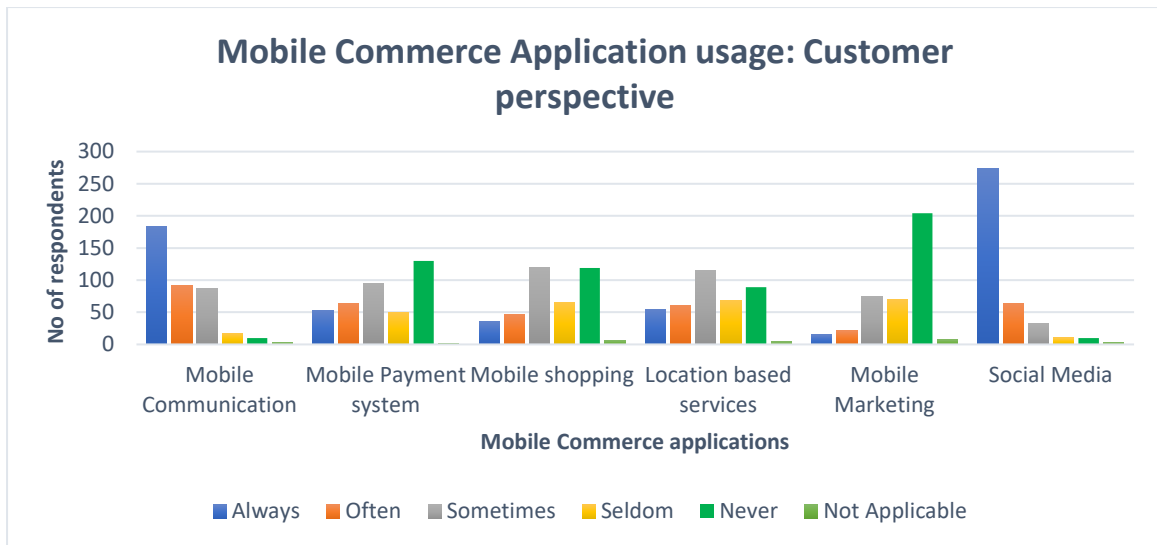


Figure 5-3: Customer participants mobile phone application usage

The relatively low usage rate of mPayment and mShopping transaction as evidenced in Figure 5-3 suggest that transaction-based services is at an early stage of acceptance by customers in Nigeria.

The relatively high rate of social media usage suggests that consumers have accepted and adopted this service which therefore creates opportunities for retail organisations to exploit as part of its MC application value proposition.

5.2. Measures

In order to answer the research question two – “What are the potential drivers influencing perceived customer value and MC adoption intention and how significant are they in the Nigerian B2C retail sector”? The quantitative research was carried out based on a model that incorporated eight constructs assessing seven main hypotheses as shown in Figure 5-4 below.

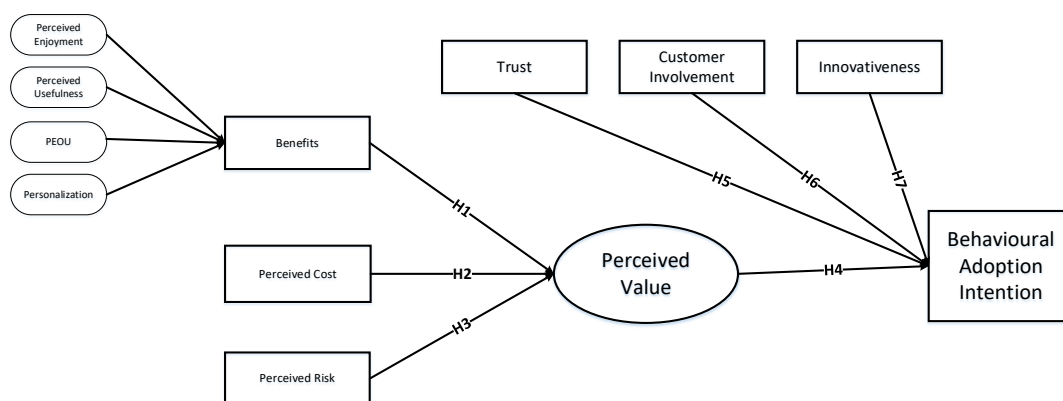


Figure 5-4: Quantitative Research hypotheses

Following literature review, valid measures for related constructs and adaption of existing scales were presented in the form of survey data (see Appendix 10.4 Quantitative questionnaire survey protocol) in relation to the theoretical background and conceptual framework presented in Chapter 3.

Adoption Intention. A 3-item scale ($\alpha = 0.705$) was developed. Following Davis et al. (1989), adoption intention definition was considered that included current and future adoption intentions. All measures were assessed by asking participants to answer questions on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures.

Perceived Benefit. A 5-item scale ($\alpha = 0.767$) was developed. Following Kim et al. (2007), a broad definition of benefits was considered that included intrinsic and extrinsic benefits made up of perceived ease of use (Davis, 1989), perceived usefulness (Davies, 1989), perceived enjoyment (Fen Liu et al., 2015) and personalization (Marinkovic & Kalinic, 2017). All measures were assessed by asking participants to answer questions on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures.

Perceived value. A 3-item scale ($\alpha = 0.756$) was adapted from (Zeithaml, 1988; Kim et al. 2007). Perceived value measures were assessed by asking participants to answer questions on their views on MC applications delivering value for money, time value and overall value using MC applications from retail organisations. All measures were assessed by asking participants to answer questions using a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures, with the internal consistency considered acceptable by scholars.

Perceived Innovativeness. A 2-item scale ($\alpha = 0.657$) was adapted from (Agarwal & Prasad, 1998). Perceived innovativeness in intention adoption definition was considered in terms of the degree to which participants will experiment with new MC technologies and try out new MC applications offered by retailers. All measures were assessed by asking participants to answer questions on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures. The level of internal consistency is considered questionable (Gliem & Gliem, 2003) based on a limited number of scales.

Perceived cost. A 2-item scale ($\alpha = 0.647$) was adapted from (Fen Liu et al. 2015; Chong et al. 2012). Perceived cost measures were assessed by asking participants to answer questions on their views on cost of mobile phones, and financial barriers of utilizing retailer MC applications. This was measured on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures. The level of internal consistency is considered questionable (Gliem & Gliem, 2003) based on the scales.

Perceived risk. A 2-item scale ($\alpha = 0.713$) was adapted from (Köster et al., 2015; Kim et al., 2007). Perceived risk measures were assessed by asking participants to answer questions on their views on providing and disclosing personal information (e.g., bank details). This was measured on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures, with the internal consistency considered acceptable by scholars.

Customer involvement. A 3-item scale ($\alpha = 0.625$) was adapted from (Liébana-Cabanillas, 2017). Customer involvement was defined in terms of customer and retailer interactions assessed by asking participants to answer questions on their views on reporting MC application problems, providing useful ideas to improve MC application and getting involved in developing applications of retail providers. This was measured on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures. The level of internal consistency is considered questionable (Gliem & Gliem, 2003) based on the scales.

Trust. A 2-item scale ($\alpha = 0.906$) was adapted from (Köster et al., 2015). Trust measures were assessed by asking participants to answer questions on their views on using MC applications if it was considered trustworthy and if retail providers keep their promises and commitment. This was measured on a five-point Likert-type scale, ranging from “strongly disagree” to “strongly agree”. Table 5-2 gives the specific measures, with the level of internal consistency is considered excellent (Gliem & Gliem, 2003).

The reliability of the MC value-based model constructs was assessed using Cronbach’s alpha coefficient. Table 5-2 gives the complete list of Items measures, loading factors and values of the

Cronbach's alpha coefficient assessing its internal reliability. Cronbach's alpha ranges between 0 and 1, with higher values indicating that the questionnaire is more reliable. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the constructs. Different rules of thumb have been used by different authors. For example, George & Mallery (2003) provide the following rules of thumb: > 0.9 – Excellent; > 0.8 – Good; > 0.7 – Acceptable; > 0.6 – Questionable, > 0.5 – Poor; and < .05 – Unacceptable” (p. 231). Other scholars (Hair et al. 1998; Kline 1999 as cited in Field, 2017, pg. 823) have provided similar interpretations, (e.g., Field (2017), consider >0.7 to be acceptable) in most psychological and social science research constructs.

Table 5-2: Results of Reliability Analysis

Construct	Measure	Measure Description	Loading Factor	Cronbach's Alpha
Adoption Intention	AI1	Current Use of MC applications	.65	.705
	AI2	Future use if MC applications	.72	
	AI3	Recommended use of MC application to someone else	.72	
Perceived Benefit	PER1	I feel that my personal needs have been met using Organisations mobile commerce	.68	.767
	PE1	I have fun interacting with Organisations mobile Commerce applications	.75	
	PU1	Using my providers mobile application enables me to make better purchase decision	.72	
	PU2	Using my providers mobile application enables me to save money	.47	
	PEOU1	Interacting with my providers mobile commerce application is clear and understandable	.60	
Perceived value	PV1	Use of MC application offers value for money	.62	.756
	PV2	Use of MC application is worth my while	.77	
	PV3	Use of organisations MC applications delivers me excellent value	.77	
Perceived Innovativeness	PI1	I like to experiment with new MC technologies	.68	.657
	PI2	I am usually the first to try out new MC technologies among my peers	.72	
Perceived Costs	PC1	Phones with MC application capabilities are expensive	.84	.647
	PC2	Financial barriers (e.g., paying for mobile 3G network fee) exist in using MC applications	.57	
Perceived Risks	PR1	Providing personal information (e.g., location and consuming preferences) to MC application providers would cause many unexpected problems	.67	.713
	PR2	Disclosing my personal information (e.g., bank details) to MC application provides causes considerable	.82	
Customer Involvement	C1	When I experience a problem using MC application, I let the provider know about it	.55	.625
	C2	If I had a useful idea on how to improve MC application offered by my provider, I will let the provider know	.68	
	C3	I would like to be included in development of new MC application products and services offered by organisations	.60	

Construct	Measure	Measure Description	Loading Factor	Cronbach's Alpha
Trust	T1	I will use MC application provider's application if considered trustworthy	.87	.906
	T2	I will use MC application provider's application if it keeps its promises and commitments	.95	

5.3. Factor analysis

To test the sampling adequacy, the Kaiser-Meyer-Olkin (KMO) measure (Cerny & Kaiser, 1977) was performed against the 22 items and verified that it was higher than 0.5 (Hair, et al., 1998). Factor analysis with varimax rotation was conducted to investigate the variable relationships among latent variables. The KMO value measuring sampling adequacy for each variable in the model and for the complete model was **0.825**, considered meritorious according to Hair (1998) – see Table 5-3. In general, any score above 0.5 is acceptable although a value above 0.6 is preferred). The result shows a statistically significant value for Bartlett's test of sphericity (P Value) of **.001**. (a value below 0.05), which suggests that the data set is suitable for data reduction techniques such as PCA or CFA.

Table 5-3: KMO ad Bartlett's tests analysis of customer survey

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	3010.279
	Df	231
	Sig.	.000

After confirming the sampling adequacy, Exploratory Factor Analysis (EFA) was conducted to detect the possible number of underlying factors Extraction values based on the commonalities using a Principal Component Analysis (PCA) explains the proportion of variance for each variable that can be explained by the factors. Table 5-4 shows factor analysis produced a six component-structural model that explains 61 percent of the variance.

Table 5-4: Factor Analysis of customer survey data: Total variance explained using PCA

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
Factor 1	5.817	26.443	26.443	5.817	26.443	26.443	3.205	14.566	14.566
Factor 2	2.382	10.829	37.272	2.382	10.829	37.272	3.122	14.189	28.755
Factor 3	1.646	7.483	44.756	1.646	7.483	44.756	1.947	8.851	37.606
Factor 4	1.404	6.381	51.136	1.404	6.381	51.136	1.876	8.529	46.135
Factor 5	1.142	5.190	56.327	1.142	5.190	56.327	1.659	7.541	53.676
Factor 6	1.064	4.835	61.161	1.064	4.835	61.161	1.647	7.485	61.161

Note – Extraction method: Principal Component Analysis (PCA)

This is further corroborated in the scree plot diagram (Figure 5-5) where the six components have an eigen value > 1 and all the other factors are < 1 and therefore not extracted.

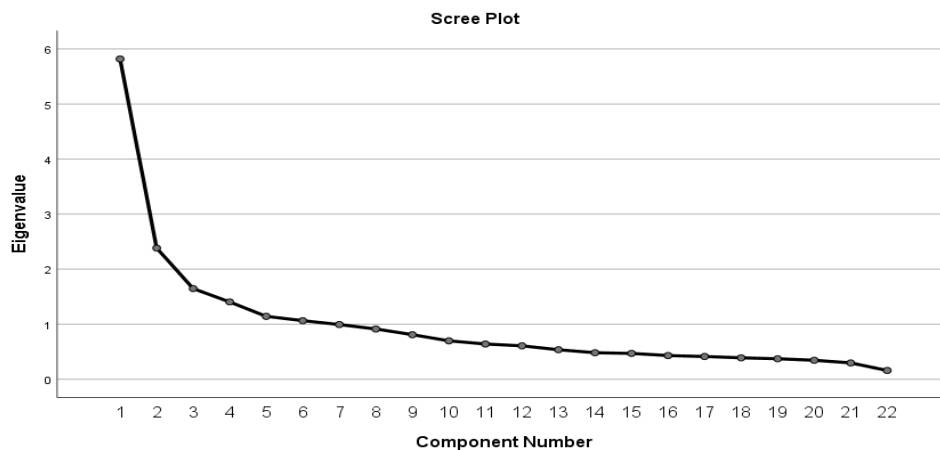


Figure 5-5: Customer survey data Scree Plot: Eigen value > 1

The next step was to determine whether the individual items (and subscript) constitute a construct that is conceptually sound and can be labelled (Kim and Mueller, 1978 as cited in Persaud and Azhar, 2012). The Factor loadings are shown in Table 5-5 where coefficients below 0.3 have been suppressed. Factor 1 consisting of the adoption intention and personal characteristics items (5 items), it has been labelled as “behavioural adoption intentions”. Factor 2 loaded on the items of value of MC to users with sub-set around perceived value, perceived enjoyment, perceived ease of use, perceived usefulness and personalisation (8 items) and has been labelled “perceived value”. Factor 3 consists of two items relating to trust and has been labelled as “Trust”. Factor 4 consists of three items relating to customer involvement and has been labelled as “customer involvement”. Factor 5 loaded on two

items relating to perceived costs and has been labelled as “perceived cost”. Factor 6 loaded on two items relating to perceived risk and has been labelled as “perceived risk”.

Table 5-5: Principal Component Analysis of model items: customer data

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Measures	Behavioural Adoption Intention	Perceived Value	Perceived Trust	Customer Involvement	Perceived Cost	Perceived Risk
AI1	0.777					
AI2	0.764					
AI3	0.666					
PI1	0.550	0.330				
PI2	0.484	0.366				
PU2		0.713				
PV1		0.670				
PV3	0.408	0.632				
PU1		0.599			-0.311	
PER1	0.322	0.587				
PV2	0.514	0.541				
PE1	0.398	0.479			-0.333	
PEOU1	0.338	0.408				
TRUST1			0.890			
TRUST2			0.872			
CI2				0.804		
CI1				0.755		
CI3				0.562		
PC2					0.733	
PC1					0.718	
PR1						0.851
PR2						0.767

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Note – PI – Perceived innovation; PV – Perceived value; PU – Perceived usefulness, PE – Perceived enjoyment; PER – Personalization; PEOU – Perceived ease of use; PTrust – Perceived Trust; CI – Customer involvement; PC – Perceived cost; PR – Perceived risk

A Confirmatory Factor analysis (CFA) was performed to then test the distinctiveness of the constructs and its fit measures. Lastly, Structural Equation Modelling (SEM) was applied to test the hypotheses and reveal the relationships between the various MCA constructs. The conceptual diagram is fed with empirical data and CB-SEM with the help of IBM® SPSS® Amos 27 was used to analyse the data.

Two models were considered as part of the CFA. The original eight factor model with the individual constructs considered as a separate factor and the six-factor model with perceived innovativeness

considered under adoption intention and perceived benefits and perceived value combined. The fit indexes of the models are presented in Table 5-6 and confirm that the eight factors model (with two unobserved, endogenous constructs – PValue and AdoptionIntention; six unobserved, exogenous constructs – PCost, PRisk, Cilvovement, PTrust, PBenefit, Pinnovate) is the one with a good fit (for all the indexes), therefore considered the best approach for the measurement of the model.

Table 5-6: Results of the confirmatory factor analysis

Model / Index	CMIN/Df	GFI	RMSEA	SRMR	CFI	PNFI	PCFI	P
6 factors	3.026	N/A	.072	.0614	.862	.679	.724	0.000
8 factors	2.314	.910	.058	.0545	.914	.696	.740	0.000

Note: CMIN/Df = discrepancy divided by degrees of freedom; GFI = Goodness of Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized. Root Mean Squared Residual; PNFI = Parsimony adjusted NFI; PCFI = Parsimony adjusted CFI; P value * = Significant at $p < 0.01$

Model fit is evaluated for CFA to validate the measurement model (Dash & Paul, 2021) – see Table 5-6. The research presents the most commonly used indices assessing the three types of model fit measures (absolute, incremental and parsimonious) as recommended by various scholars (Hooper, et al., 2008; Miles, 2007; Dash & Paul, 2021). The CMIN/df value of < 3 (Hair, et al., 1998) is considered a good model fit measure; the Goodness of Fit Index (GFI) (Joreskog & Sorbom, 1993) exceeds the threshold of $> .9$; the Root Mean Square Error of approximation (RMSEA); (Steiger & Lind, 1990) is considered good fit as its closer to 0.06 (Hu & Bentler, 1999); the Standardized Root Mean Square Residual (SRMR) is less than the threshold of < 0.09 (Hu & Bentler, 1999), the Comparative Fit Index (CFI) (Bentler, 1990) exceeds the threshold of $> .9$; the Parsimonious Normed Fit Index (PNFI) and Parsimonious Comparative Fit Index (PGFI) (Mulaik, et al., 1989) is > 0.50 permitted threshold (Hooper, et al., 2008) and therefore considered a good model fit. SEM was used to examine the hypothesized model.

5.4. Structural model

Due to the complexity of the research model, the next phase was to run a Structural Equation modelling (SEM) to see if the non-linear model can perform better than using multiple regression analysis. SEM is very similar to multiple regression but is much robust and offers greater flexibility as it allows to model multiple independent and dependent variables, error terms, interactions and correlations (Dash & Paul, 2021). This gives us the opportunity to evaluate the direct and indirect influences of latent variables on adoption intention outcomes. It identifies the extent to which antecedent variables influence customer value and MC adoption behaviour intentions within the Nigerian B2C retail context by testing the hypothesized relationships after establishing good convergent and discriminant validity of the variables.

Two methods of SEM include: Covariance based Structural Equation Modelling (CB-SEM) and Partial Least Squares based Structural Equation Modelling (PLS-SEM). This research has adopted a CB-SEM as it provides a better model fit and is considered better suited to factor-based models similar to this study (Dash & Paul, 2021). It has also been used in similar MC adoption studies (Choi, et al., 2008; Maduku, et al., 2016). The result of the CB -SEM is presented in Figure 5-6 showing the relationships between the constructs. The hypothesized model shows core model fit of the data with minimum achieved, chi square of 432.7, degree of freedom of 187 (253 less 66) and significant p value of < 0.0001, in line with the CFA results presented in section 5.3 above. With regards to the relationships between the latent variables, Perceived Benefit has a significant positive effect (0.74, $p < 0.001$) on Perceived Value, Perceived Value has a significant positive effect (0.51, $p < 0.001$) on Adoption Intention, Personal Innovativeness has a significant positive effect (0.26, $p < 0.001$) on Adoption Intention, Trust has a positive effect (0.11, $p < 0.05$) on Adoption Intention but the effect was not statistically significant for Perceived Cost (.091, $p = .155$) and Perceived Risk (-0.016, $P = .801$) on Perceived Value and Customer Involvement (.05, $p = .46$) on Adoption Intention. The selected results of the SEM shown in Table 5-7 are standardized parameter estimates, therefore can be compared.

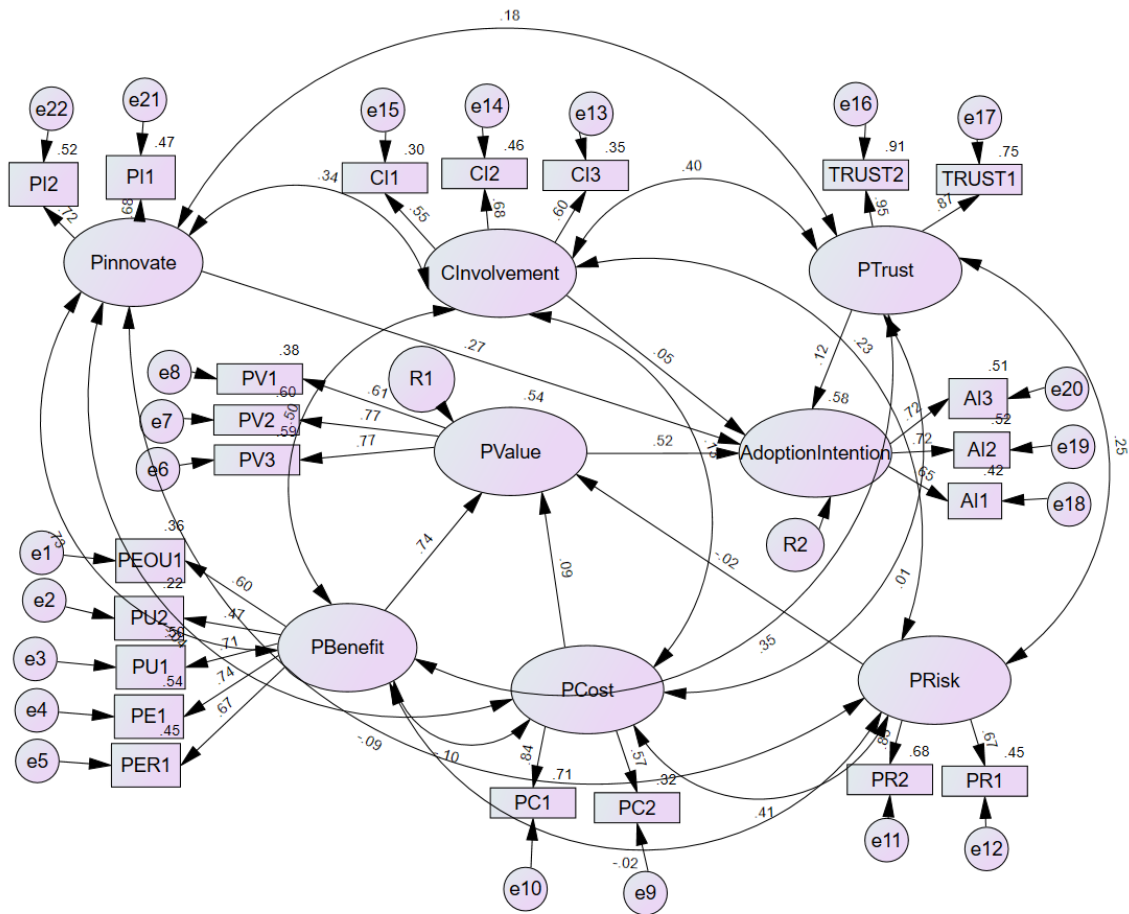


Figure 5-6: MC Value-based Adoption Model Structural Equation Model

Hypothesis 1: Perceived Benefit is positively related to Perceived value

Both hedonic and utilitarian benefit factors have been found to influence perceived value and behavioural intention (Babin, et al., 1994). The following measures therefore formed the benefits component to determine perceived value:

- Perceived Enjoyment
- Perceived Usefulness
- Perceived Ease of Use
- Personalization

Figure 5-6 shows the results of the SEM. First, perceived benefit ($\beta = 0.74$, $p < 0.001$) has significant and positive effect to perceived value ($R^2 = 0.54$). The standardized path coefficients is larger than 0.50 indicating a "large" effect (Murti, 2016). If perceived benefit increases by one standard deviation from its mean, perceived value would be expected to increase by 0.74 of its standard deviations from

its own mean while holding all other relevant variables constant. Thereby, hypothesis H1 is supported.

This is made up of the following observed variable assessment

Hedonic Benefit of **Perceived Enjoyment** is positively related to **Perceived Benefit** and **Perceived Value**. Existing literature suggests enjoyment is key in enhancing users' experiential value (Tojib and Tsarenko, 2012; Sujeong Choi, 2018). Similarly, enjoyment can be gained from customers using MC technology and is an important factor in customer's acceptance of use of the technology (Verkijika, 2018) or 'perceived fun' found by a similar Nigerian study (Salimon, et al., 2018).

Utilitarian benefit of **Perceived Usefulness** is positively related to **Perceived Benefit** and **Perceived Value**. Studies suggests perceived usefulness as one of the original TAM variables is key in adoption intention of technology including MC as well as key in determining perceived value (Kim, et al., 2007) in internet adoption.

Utilitarian benefit of **Perceived Ease of Use** (PEOU) is positively related to **Perceived Benefit** and **Perceived Value**. In the literature review chapter, it was discussed that PEOU as one of the original TAM variables is influential in predicting adoption intention in various technology related studies (Ko, et al., 2009; Chong, 2013; Shang & Wu, 2017; Liébana-Cabanilla, et al., 2017).

Hedonic benefit of **Personalization** is positively related to **Perceived Benefit** and **Perceived Value**. Personalization linked to gratification shopping stimulating participants to shop on mobile commerce related application is seen as a hedonic motivational factor in predicting consumer behavioural adoption intention; key in enhancing users' experiential value (Mahatanankoon & Vila-Ruiz, 2007; Ko, et al., 2009; Hua & Yan, 2015; Parker & Wang, 2016).

Hypothesis 2: **Perceived Cost** is negatively related to **Perceived Value**

As part of the sacrifice in adopting MC, literature suggests monetary sacrifices such as fees and cost of utilizing mobile related services could be a barrier to adoption. Therefore, a negatively perceived fee could result in overall negative perceived value relationship (Kim, et al., 2007). Similar studies have

investigated impact of costs such as network fees incurred in negatively affecting perceived value of M-coupon applications (Liu, et al., 2015) and adoption intention (Wu & Wang, 2005).

Surprisingly, the results in Table 5-7 show that perceived costs ($\beta = 0.091$, $p = 0.155$) do not have a significant and negative effect to perceived value ($R^2 = 0.54$). Thereby, hypothesis H2 is not supported.

Hypothesis 3: Perceived Risk is negatively related to Perceived Value

We hypothesise that, for the value-based adoption model, perceived risk, is negatively impacting perceived value of mobile related applications (Liu, et al., 2015) and adoption intention (Wu & Wang, 2005; Taylor, 2016; Osakwe & Okeke, 2016). Results in Table 5-7 show that perceived risk ($\beta = -0.016$, $p = 0.801$) although has a negative effect to perceived value ($R^2 = 0.54$) is not significant. Thereby, hypothesis H3 is not supported.

Hypothesis 4: Perceived Value is positively related to Adoption Intention

The central principle of a value-based adoption framework is that it is defined over perceived gains and losses relative to some natural reference point to create perceived value and scholars such as Kim, et al., (2007) found strong empirical evidence to suggest that perceived value affects adoption intention of technology.

The results in Table 5-7 show Perceived Value ($\beta = 0.517$, $p < 0.001$) has highly significant and positive effect to Adoption Intention ($R^2 = 0.58$). The standardized path coefficients is larger than 0.50 indicating a "large" effect (Murti, 2016). If perceived value increases by one standard deviation from its mean, adoption intention would be expected to increase by 0.52 of its own standard deviations from its mean while holding all other relevant variables constant. Thereby, hypothesis H4 is supported.

Hypothesis 5: Trust is positively related to Adoption Intention

It was discussed that Trust is influential in predicting adoption intention in various technology related studies (Lin & Wang, 2006; (Persaud & Azhar, 2012; Chong, 2013; Murillo, 2017; Liébana-Cabanilla, et al., 2017). Trust has proven to be a significant predictor ($\beta = 0.117$, $p < 0.05$) and has positive effect on

behavioural adoption intentions ($R^2 = 0.58$). The standardized path coefficients is around 0.10 indicating a "small" effect (Murti, 2016) and if Trust increases by one standard deviation from its mean, Adoption Intention would be expected to increase by 0.12 its own standard deviations from its own mean while holding all other relevant variables constant. Hypothesis H5 is therefore supported. Transactional activities via mobile devices are not yet main stay in developing economies. The importance of consumer trust in applications and services offered by retail organisations is important for their future adoption.

Table 5-7: MC customer value-based adoption: SEM analysis

Path			Estimate (β)	S.E.	C.R. (R2)	P	Label
PValue	<---	PCost	0.091	0.064	1.422	0.155	par_9
PValue	<---	PRisk	-0.016	0.045	-0.252	0.801	par_10
PValue	<---	PBenefit	0.740	0.115	8.253	***	par_17
AdoptionIntention	<---	PValue	0.618	0.106	5.839	***	par_8
AdoptionIntention	<---	CInvolvement	0.053	0.103	0.733	0.463	par_11
AdoptionIntention	<---	PTrust	0.117	0.063	2.065	0.039	par_18
AdoptionIntention	<---	Pinnovativeness	0.268	0.087	3.327	***	par_21
PV3	<---	PValue	0.771	0.1	11.142	***	par_1
PV2	<---	PValue	0.772	0.093	11.149	***	par_2
PC2	<---	PCost	0.567				
PC1	<---	PCost	0.845	0.297	4.845	***	par_3
PR2	<---	PRisk	0.826				
PR1	<---	PRisk	0.67	0.119	6.919	***	par_4
CI3	<---	CInvolvement	0.595				
CI2	<---	CInvolvement	0.681	0.145	7.869	***	par_5
CI1	<---	CInvolvement	0.548	0.138	7.32	***	par_6
TRUST2	<---	PTrust	0.953				
TRUST1	<---	PTrust	0.869	0.067	13.425	***	par_7
AI1	<---	AdoptionIntention	0.646				
PEOU1	<---	PBenefit	0.596	0.145	7.767	***	par_12
PU2	<---	PBenefit	0.469				
PU1	<---	PBenefit	0.708	0.162	8.406	***	par_13
PE1	<---	PBenefit	0.738	0.158	8.546	***	par_14
PER1	<---	PBenefit	0.674	0.159	8.235	***	par_15
PI1	<---	Pinnovativeness	0.683				
PI2	<---	Pinnovativeness	0.724	0.112	9.501	***	par_16
PV1	<---	PValue	0.615				
AI3	<---	AdoptionIntention	0.717	0.071	10.677	***	par_19
AI2	<---	AdoptionIntention	0.724	0.074	10.737	***	par_20

Note: SEM standardized estimates where P = *** 0.001 of significance; ** 0.01 of significance; * 0.1 of significance; >0.5 – not significant.

Hypothesis 6: **Customer involvement** is positively related to **Adoption Intention**

The influence of customer involvement from the perspective of the customer on MC adoption was studied. Literature posits that in creating new mobile related service or to support improving existing service is influential in predicting adoption intention (Sinisalo, et al., 2007; Sidhartha, et al., 2014; Liébana-Cabanilla, et al., 2017).

The results in Table 5-7 show Customer Involvement ($\beta = 0.053$, $p = 0.463$) did not have a significant effect to Adoption Intention ($R^2 = 0.58$). Therefore, hypothesis H6 is not supported.

Hypothesis 7: **Personal innovativeness** is positively related to **Adoption Intention**

Personal Innovativeness is considered in the literature in terms of user's willingness to adopt new mobile technologies and is seen as a key determinant of adoption intention and usage (Lu, et al., 2005; Chong, 2013; Lu, 2014; Liu, et al., 2015).

The results in Table 5-7 show Personal Innovativeness ($\beta = 0.268$, $p < 0.001$) has a significant and positive effect to Adoption Intention ($R^2 = 0.58$). The standardized path coefficients is around 0.30 indicating a "medium" effect (Murti, 2016). If personal innovativeness increases by one standard deviation from its mean, Adoption Intention would be expected to increase by 0.27 its own standard deviations from its own mean while holding all other relevant variables constant. Thereby, hypothesis H7 is supported.

In summary, three variables (Perceived cost, perceived risk and customer involvement) did not show strong influence in predicting MC adoption intention. One variable Trust has a significant influence while the other three variables (Perceived benefit, Perceived value and Innovativeness) had a significantly stronger influence in predicting adoption intention. Reasons for this will be explored further in the discussion section.

5.5. Quantitative discussion

5.5.1. Outcome of hypothesis

Figure 5-7 shows the outcome of the SEM model, with the relationships between constructs evaluated and presented. A total of seven hypotheses were developed and measured in this research. Based on the findings, four hypotheses (H1, H4, H5 and H7) were supported, while three (H2, H3 and H6) were not supported. These are discussed below.

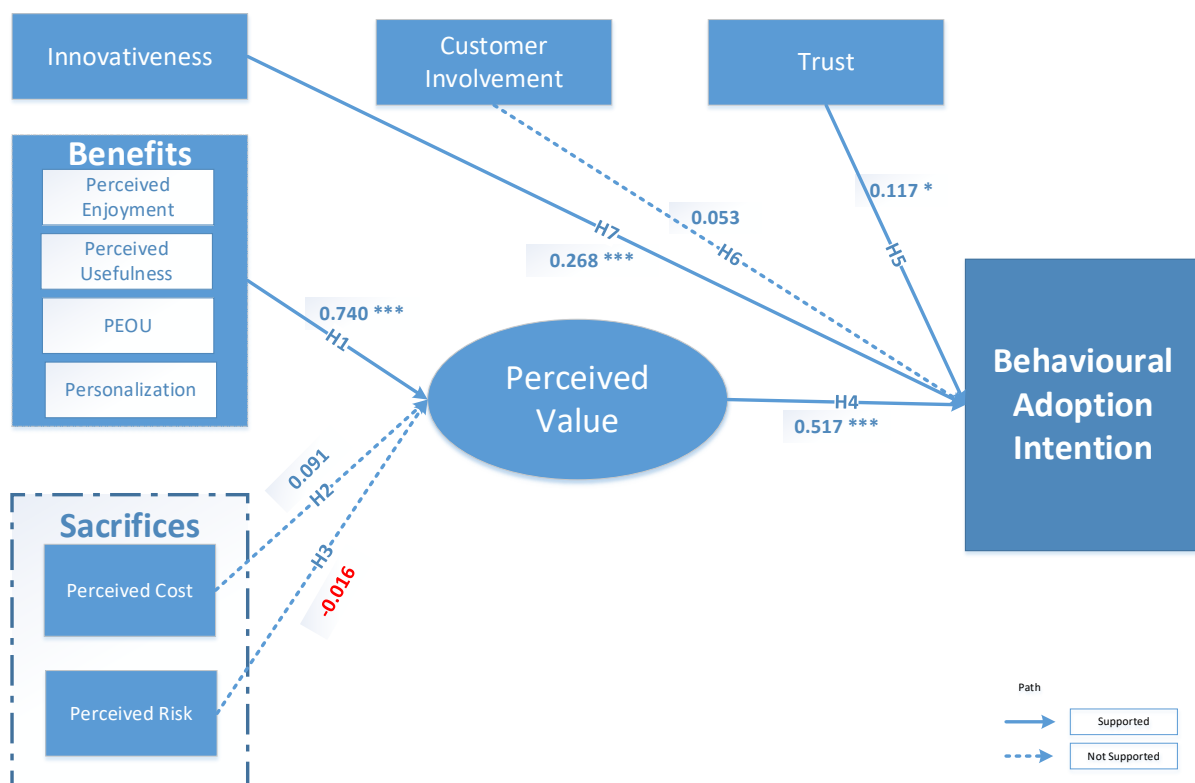


Figure 5-7: Customer Value-based MC Adoption model Results

Note: *** 0.001 of significance; ** 0.01 of significance; * 0.1 of significance; --- hypothesis not supported; — hypothesis supported

As part of the value-based adoption model, hypothesis H1 suggested a positive and significant association between perceived benefits and perceived value of adopting MC. Utilitarian benefit factors including PEOU and PU supported perceived value which in turn encouraged adoption intention. This forms part of the original TAM (Davis, 1989) and is supported from earlier MC value-based adoption studies (Kim, et al., 2007; Ko, et al., 2009; Ko, et al., 2009; Keong, 2016). Within the

Nigerian context, the higher the perceived ease of use and usefulness of mobile application, the greater the perceived value that customers receive. Similarly, hedonic factors including perceived enjoyment (Wang & Li, 2012; Ko, et al., 2009) and personalization (Shareef, et al., 2017) of the mobile application to meet individuals needs was positively significant in determining value. This is considered important within the Nigerian context as it also shows that consumers, in general, see MC as fun technology to engage with. Likewise the opportunity to receive personalized messages and reminders especially in the case of retail pharma to remind customers of their prescriptions and get notified of deals was seen as valuable by customers.

However, H2 and H3 as part of the sacrifices suggested that both costs and risks failed to have a significant impact on perceived value. The findings are contrary to other studies that have shown that with regard to perceived sacrifices, both perceived risk and cost have a negative effect on perceived value (Kim, et al., 2007; Liu, et al., 2015) and similarly, cost is an important factor in MC adoption (Khalifa & Shen, 2008; Chong, 2013; Yadav, et al., 2016). This is perhaps due to high cost of smartphones, high-speed internet, the price of MC services and tariff subscription cost negatively influence MC adoption. Never the less, it should also be stated that similar studies have supported that cost is not a deterrent of MC adoption. Even in the same study, Chong (2013) suggested that through applying the neural network model, cost was not a factor in predicting if a customer will be an MC adopter or non-adopter. This is supported by similar study by Yang, et al., (2012) which suggests that perceived costs only marginally predicted young Chinese adoption attitudes. Given the level of technological development and the drop in manufacturing costs, it is hardly surprising to find that there is universal discrepancy on the impact of cost sacrifice and behavioural adoption intention especially within the context of Nigeria. The fact that cost and risk barrier was not seen as significantly negatively influencing perceived value and adoption intention could be due to the influx of cheaper GSM and smart phones from China. Also, competition among the major network providers (MTN, Globacom, Airtel etc) seek to reduce network tariffs although from the qualitative results, customers suggest that more needs to be done to reduce tariffs further as Nigeria is seen as one of the most

expensive communication service providers when compared with other African countries. The lack of empirical evidence to suggest that risk was a determinant to MC adoption is supported by Osakwe & Okeke (2016) in their analysis of mobile money usage in Nigeria, as the study could not establish tangible evidence between perceived risk, phone network failure and perceived usefulness of mMoney service in Nigeria. This result contrasts with findings that suggest Trust as significant factor in determining MC adoption.

Similar to H2 and 3H3, the findings failed to support H6 as customer involvement did not have a significant correlation with MC behavioural adoption intention. The findings are contrary to those of (Liébana-Cabanillas, et al., 2017) which suggest that a high level of consumer involvement in the process of creating service and consumer feedback can initially enhance customer intention to use m-commerce. Customer involvement through communication and feedback loop can prove very important in building the customer engagement and relationship between the retailer and customer. An insignificant effect of this construct on MC adoption intention can however be justified by the fact that the cultural orientation of the Nigerian customer who are mainly non-confrontational and would rather avoid the stress of getting involved with the retailer, except if there were an issue, so any form of customer involvement can be considered secondary part of their lives. For these reasons, customer involvement is simply not a factor that leads to adoption intention of MC, but rather part of a post adoption activity, which reduces the importance of this variable for the behavioural adoption intention point of view.

This study, however, found support for the relationship between Trust and behavioural adoption intention is analogous with prior studies (Chong, 2013; Liébana-Cabanillas, et al., 2017; Murillo, 2017; Shareef, et al., 2017). This means that Nigerian customers are more likely to adopt MC if they perceive it to be reliable and trustworthy. Within the context of Nigeria, customer retail shopping is still largely informal and fragmented. Respondents largely seldom or sometimes interact with mobile technology to perform any transactional shopping or payment activities as per empirical evidence in Figure 5-3.

Customers who perceive a degree of risk transacting with a mobile device could have concerns about the outcome, which is why it is surprising that risk was not considered significant in influencing perceived value. Scholars have increasingly suggested that because customers know little about MC, they tend to raise concerns about trust (Liébana-Cabanillas, et al., 2017). It is therefore important for MC retail providers in Nigeria through media and publicity to build trust with its customers. This is further supported by a similar African study suggesting MC firms should have open and truthful communications with existing and potential customers to create an atmosphere of transparency that can develop customer trust (Verkijika, 2018).

The research supported hypotheses H7 indicating that innovativeness positively influences the MC behavioural adoption intention. The outcome demonstrates consistency with prior studies on MC (Dai & Palvia, 2009; Lu, 2014; Liébana-Cabanillas, et al., 2017). Personal innovativeness shows that Nigerian customers are willing to adopt mobile-related innovation based on the level of confidence and expectations it will meet their personal needs. MC is experiencing more continuous and frequent technology advances and business model changes, as compared to other retail models. Customers with high personal innovativeness tend to be more accommodating of these changes (Lu, 2014). Studies also suggest that innovators since they are early adopters, are less price sensitive and considered loyal customers (Aldás-Manzano, et al., 2009). To be able to identify this class of customers could be key in the Nigerian context where level of adoption can be enhanced through the customers social influence and word of mouth (WOM).

Lastly, perceived value was found to have significant influence on MC behavioural adoption intentions, thus supporting hypothesis H4. This is consistent with previous studies (Kim, et al., 2007; Ko, et al., 2009; Keong, 2016). The results implies that the higher perceived value of MC toward customers, the higher adoption intention toward MC. Similarly, customers who have low perceived value of using MC are unlikely to adopt MC. The perceived value is based on the premise that customers will adopt MC where the benefits outweigh the costs and (or) associated risk. The finding indicates that perceived

value has a key role in consumers' adoption decision of MC, however the extent to which that value has been unlocked by Nigerian retailers and consumers alike is questionable. This therefore might form an area of interest for future research. Improving customers' perceived value of MC applications can contribute in enhancing their adoption behaviour (Liu, et al., 2015). Nigerian retailers may need to find more creative ways and new ideas by offering more features and MC related services to enhance customers' value perceptions attracting shoppers to adopt the mobile apps.

5.5.2. Theoretical implications

This quantitative analysis contributes to the body of knowledge by producing theoretical studies on the implications of technology and non-adoption. It extends previous researches in the domain of technology adoption specifically within the context of value-based MC adoption, and mobile commerce evolution in developing countries. It also increases the coverage of number of literature material particularly In Nigerian and sub-Sahara African contexts against prevailing geographical literary coverage in Europe, Asia and America.

This study provides a value-based approach to predict the MC adoption in one of the growing mobile economies. Both mobile service providers and retailers may use the research findings to come up with appropriate strategies and business models to improve Customer MC adoption in future.

This study extended the VAM by adding innovativeness, customer involvement and perceived trust as additional variables to the benefit and sacrifice of the perceived value model. By having such an integrated model, it builds on the simplicity of the VAM which is based on variables from the original TAM, thus improving the cohesiveness of the proposed model through additional variables. By adding constructs like individual characteristics (perceived innovativeness) co-creation construct (customer involvement) and trust-based constructs (perceived trust), the study used a comprehensive approach and presents a considerable improvement in value predictability and adoption intention.

In addition, this research has shown the importance of perceived value in explaining the adoption of MC by customers. Perceived value fully serves as an intermediate variable affecting consumers

behavioural adoption intention, which aligns to customer value and Service-dominant logic literature in business and economics research domains. This research is one of the few that has explored the role of perceived value in determining technology adoption and is one of the first empirical efforts to examine the impact of perceived value in technology adoption in the African context. The research serves to bridge this adoption gap and expand the perceived value literature.

Furthermore, this section of the study employed regression analysis and Structural Equation Modelling (SEM) to understand and predict important variables which influence the adoption of m-commerce. The use of such a multi-analytical approach develops a sense of confidence and reinforces the validity of the results obtained from individual approaches.

5.5.3. Practical implications

From a practical perspective, this section of the study provides a better understanding of customers' adoption intention of MC within the Nigerian context. With the increased penetration of mobile phones, growth of EC, the impact of Covid-19 and shops having to cope with lockdown, retailers are having to re-examine their changing business environment. Organisations should seek to optimise the use of mobile enabled technology. Based on the VAM, retailers can gain understanding on how customers perceive value on MC applications. The research also provides practical implication for network providers and government in increasing the value potential of MC.

Customers with a high degree of personal innovativeness show they are willing to take risks and try out new MC technology. Due to the relative newness of mobile enabled commerce in Nigeria, it is important to get customers to accept its adoption. To be able to reach such customers and have them influence the spread of MC, there is practical implication for government and retail organisations to spread information about the benefits of MC innovation and educate the Nigerian public about the value potential to further increase the adoption potential.

Potential adopters are concerned about both sacrifices and benefits when assessing the value of MC. Retailers have to increase the desirability over any sacrifices such that customers will consequently

place a higher value on the use of MC as has been presented in our research. The study has also shown that the benefits (both hedonic and utilitarian) have greater significance than relative sacrifice in determining customer value.

The section of the study shows the importance of trust in adopting MC. In this context, it is important that customers trust the retail organisations especially when transacting and making payments online. Customer need to be assured that their personal data is secure, that they can trust retailers to deliver what has been ordered on their mobile as seen. To increase the trust customers' have with the retailers offering MC applications, there is more the government can do to protect consumer rights. It is also necessary for retail organisations to review their policies to offer consumers a solid refund guarantee in case of possible errors when transacting online or on mobile.

Organisations also have to consider adopting efficient and secure applications to safe guard information transferred the wireless mobile networks to build trust. This is to ensure sensitive financial and personal information is protected. To preserve data integrity and privacy and further increase consumer trust, organisations should seek to implement advanced data governance techniques such as access control and data encryption to enhance the customer MC experience.

5.6. Summary

This chapter analysed the relationship between MC adoption and customers' perception of factors impacting their acceptance within Nigerian B2C retail context.

Results from the reliability and factor analysis showed that the data collection instrument of choice was adequate for the study. The individual Cronbach's Alpha and factor loading shows internal validity of the model, demonstrating to a large extent that participants' interpretation and understanding of the individual items and variables on the scale was consistent. Studies suggest that the interpretation provided by different scholars on validity vary (e.g., $0.6 \leq \alpha < 0.7$ is considered acceptable (Field, 2017)). The factor analysis show that the items loaded properly for each of the scales, with the principal component analysis and scree plot analysis output indicating that the items were loaded on

six components. The fit indexes of the models are presented in Table 5-6 and confirm that the eight factors model is the one with a good fit (for all the indexes) and best approach for the measurement.

As part of the analysis, CFA and SEM were applied to validate the measurement variables against causation or influence. The results of the research findings were presented in line with the research objective to identify antecedent factors influencing customer MC adoption. Analysis shows that in general, perceived value significantly influences MC behavioural adoption intentions. Of the dimensions of benefits and sacrifices findings, the data analysed suggests that the benefits construct (including PEOU, PU, PE, and personalization) was supported whereas perceived risk and cost are not significant predictors of sacrifice construct. Other variables of Trust and Personal innovativeness were significant predictors of adoption intention and supported the hypothesis. However, customer involvement was not found to be significant. Table 5-8 summarises the findings from the hypothesis below.

Table 5-8: Customer Value-based model summary

Hyp	Hypothesis	Beta	SE	t-value	p-value	Decision
H1	Perceived Benefit is positively related to Perceived Value	.740	.151	7.092	<0.001	Supported
H2	Perceived Cost is negatively related to Perceived Value	.091	.064	1.422	0.155	Not supported
H3	Perceived risk is negatively related to Perceived Value	-.016	.045	-.252	0.801	Not supported
H4	Perceived Value is positively related to Adoption Intention	.517	.106	5.839	<0.001	Supported
H5	Trust is positively related to Adoption Intention	.117	.063	2.065	<0.05	Supported
H6	Customer involvement is positively related to Adoption Intention	.053	.103	.733	.463	Not supported
H7	Personal Innovativeness is positively related to Adoption Intention	.268	.087	3.327	<0.001	Supported

Note: Beta = unstandardized estimates; SE = Standard Error; t-Value = regression estimate / SE; P Value = *** 0.001 of significance; ** 0. 01 of significance; * 0. 1 of significance; >0.5 – not significant

This section of the research has examined the customer perspective of technology adoption by extending well known TAM and VAM. The model is applied to study the adoption of MC individual

customers in Nigeria. The results support that value perception is a major determinant of MC adoption by testing the mediating effect of perceived value on the relationship between a customer's benefit and sacrifice related beliefs and the customer's adoption intention. The results demonstrate that there is a higher importance on the benefits than the sacrifice impact, however a suitable balance that favours the benefits against the sacrifices will accelerate MC adoption. The result enhanced our understanding of the view that the higher the level of Trust perceived by customers and the level of individual innovativeness, the more likely customers will be willing to adopt MC. The finding provides greater understanding of customer value adoption behaviour in MC.

Chapter ends

Chapter 6: Retailers MC adoption – findings from qualitative analysis

This chapter explores factors relating to retail organisation adoption of MC within the Nigerian Context. With the rapid growth of EC, familiarisation of individuals to the latest mobile phone devices, and the advent of 3G, 4G and now 5G network technologies that promise faster and more reliable mobile internet and commercial use cases in the arena of Internet of things (IoT), neural networks, Big data, Artificial Intelligence (AI), voice recognition, Machine Learning (ML), Augmented Reality (AR), virtual reality (VR), 3D and driverless vehicles; MC promises to be an increasing growth area for organisations.

Previous research has focused on technology adoption from the consumer perspective (Ko, et al., 2009; Zhou & Lu, 2011). Only few studies have explored MC adoption from the perspective of the organisation (Martín, et al., 2012; Picoto, et al., 2014; Taylor, 2016) as discussed in the literature review This is an area for future studies. An objective of this research is to understand factors influencing retailer adoption and usage of MC applications and explore the potential value outcomes from deploying such applications within the Nigerian B2C retail context.

Qualitative analysis of the data is undertaken following 16 semi-structured interviews conducted with senior executives, senior managers and managers across thirteen (13) case study organisations in Nigeria. Due to the exploratory nature of the study, this chapter presents the findings of the qualitative method using a multi-case study. To perform any data analysis, transcribed data was cleansed and imported into NVivo 12. The data was anonymised for confidentiality.

This section presents a descriptive analysis of the case study, to aid understanding of the MC organisation adoption behaviour, as the backdrop to EC. It examines the classification of MC applications adopted by Nigerian retail organisations and explores the process in which retailers go about adopting MC. It examines the factors that organisations need to consider when adopting MC using the theoretical lens of DOI (Rogers, 2003) and TOE framework (Tornatzky & Fleischer, 1990). It then explores the potential benefits and value outcomes for organisations using MC within their

business model. The findings from the interviews are further analysed and presented using themes emerging from the study. Finally, a conclusion is reached and inferences are drawn.

6.1. Case study organisations

6.1.1. Case study organisation protocol

Table 6-1 below summaries the retail organisations involved in the case study and details the duration and times when the semi-structured interviews were conducted. The names of the organisations have been anonymised to represent Greek gods and goddesses as a more ‘organic’ nomenclature to ensure confidentiality and in keeping with ethical standards; rather than reverting to “conventional” naming like Company A, B, etc. The researcher has been fortunate to engage with executives from some of the largest EC, electronics, retail -pharma retailers in Nigeria.

Table 6-1: Case study retail organisation interview schedule (April to May 2019)

Organisation	Sector	Participants/ respondents	Nature of interview contact	Month and duration
Zeus	EC	Financial Accountant Operations Manager Sales Representative	<ul style="list-style-type: none"> WhatsApp and telephone interview Email correspondence Face to face interview 	April 2019 0.45hrs – 1hr each
Hera	EC	Branch managers (x2)	<ul style="list-style-type: none"> Face to face interview 	April 2019 0.45hrs
Athena	Fashion retail	HR / Admin Manager	<ul style="list-style-type: none"> Email correspondence Face to face interview 	April 2019 0.45hrs
Hestia	Supermarket	Branch Manager	<ul style="list-style-type: none"> Face to face interview 	April 2019 0.45hrs
Ares	Supermarket	Operations Manager IT Manager	<ul style="list-style-type: none"> Face to face interview 	April 2019 1hr each
Venus	Retail Pharmaceutical	Head of Retail Head of IT	<ul style="list-style-type: none"> Face to Face interview 	April 2019 0.45hrs each
Apollo	Retail Pharmaceutical	Head of Business Development IT Service Manager	<ul style="list-style-type: none"> Email correspondence Telephone interviews 	April 2019 1hr
Hermes	EC	Regional Manager - North Regional manager - South	<ul style="list-style-type: none"> WhatsApp Telephone interview 	April 2019 1.5 hrs

Organisation	Sector	Participants/ respondents	Nature of interview contact	Month and duration
Ceres	Electronics and appliances	Branch Manager	• Face to face	April 2019 1hr
Artemis	Electronics and appliances	Branch Manager	• Face to face	April 2019 1hr
Bacchus	Electronics and appliances	IT and Sales Manager	• Face to face	April 2019 1hr
Vulcan	Supermarket	CEO / operations Manager	• Face to face	April 2019 1hr
Hades ³⁵	EC	Former Accountant	Chief • Telephone	April 2019 1.5hr

6.1.2. Organisation background profile and business model

6.1.2.1 Organisation background profile

The first set of semi-structured interview questions related to the profile and background of organisation (Table 6-2): nature of retail operations, number of years in business, its size, ownership structure, number of employees, its mission, vision, culture and the organisation's business model; the type of MC applications in use, the reasons for adoption or non-adoption. The information provided was further corroborated from data collected from each of the organisation's website. The 13 organisations conform to the following retail sectors:

- eCommerce
- Superstore
- Electronics and appliances
- Retail pharmacy
- Fashion and apparel

³⁵ Hades - Nigerian daily deals platform, shut down operations in December 2018.

EC sector

For just over a decade, EC has been the main stay in the Nigerian Internet space, with entrepreneurs launching online stores and investors pumping millions of dollars into the industry. The researcher spoke to senior representatives from four leading EC organisations with three of them still active and one that closed its doors in December 2018. These three EC organisations represent the largest online EC market place in Nigeria. Both Zeus and Hera offer customers a third-party online marketplace, as well as first-party direct retail, with product offerings spanning various categories including consumer electronics, fashion, home appliances, books, children's items, computers and accessories, phones and tablets, health care and personal care products. Both firms are in direct competition with each other with a similar mission to become the largest online shopping platform in Nigeria and beyond. Hermes is another EC organisation that caters for international orders from the UK and US. Hades similar to Groupon, provides top local brands at discounted prices through its offering of daily deals. Each of these EC retailers employ over 200 staff as they dominant online retailer.

Zeus operates a highly digital platform supported by mobile enabled shopping websites and mobile applications with over 10 million downloads. It has a mobile payment platform and social media presence on Facebook, Instagram and Twitter. Similarly, Hera operates a mobile enabled online market place, a mobile application with over 1 million downloads, a payment application as well as social media presence. Hermes also adopts a mobile-friendly application with Google chrome as its preferred interface for customers to interact with its mobile application with over 100,000 downloads on Google play store.

Each of these retail organisations has had similar inceptions, with the founding members originally entrepreneurs from Nigerian backgrounds either in partnership with foreign backed investors or foreign investment. However, as will be discussed below, the levels of funding seem to have influenced the MC business model.

Supermarkets

The supermarket channel in Nigeria is highly fragmented with multiple suppliers that chose to adopt lower price points and convenience to its customers. According to Euromonitor International (2020) supermarkets recorded growth of 10% to reach sales of NGN202 billion. Participants in the research included senior IT and operations managers of two leading supermarkets and one smaller independent to understand their MC adoption strategy. Interestingly, the adoption of MC by such supermarkets has been limited to the usage of a mobile-enabled websites. Only recently with the impact of the pandemic has one of the supermarket outlets chosen to expand its operations with mobile app to offer home delivery.

Hestia vision and mission as a local retail chain, identifies to be the leading retail chain in Nigeria with a mission driven by a passion to provide customers with the best shopping experience built on trust and loyalty. Hestia products offering include: general household goods as well as electronics, fashion, cosmetics and furniture. Similarly, Ares is a well-established international chain, that seeks to grow its global brand presence and partnership while acting local. Ares offers within its supermarkets a Café to cater for customers who want to relax and enjoy its fresh food and entertainment offering as an experience. Vulcan however is a relatively new start-up that has been trading for less than three years and has couple of stores within Lagos. Its aim is to be the “Tesco outlet” of Nigeria with convenience, friendliness and variety at the heart of its ethos.

Hestia and Ares are similar in size, with number of employees between 1000 – 5000 across its head office and store outlets. Ares has been operating in Nigeria for over ten years through an international licence granted while Hestia has been in operation for 3-5 years following partnering with one of the leading banks in Nigeria. Vulcan on the other hand, is a privately owned firm of less than three years and has between 11 - 50 employees. Its customer reach is through referrals and Facebook likes.

Electronics and appliances

The third group of case study organisation are electronics organisations specialising in the sale of mobile phones and accessories. The demand for mobile phones has continued to expand in 2019, correspondingly with mobile phone usage across the country (Euromonitor International, 2020) and smartphones adoption. The three mobile electronics and accessories organisations are among the top ten distributors of mobile phones and accessories in Nigeria with Artemis serving both wholesale and retail market competing with EC platforms and supermarkets. The vision of all three organisations is quite similar; to be the preferred mobile phone outlet with Cere's mission to provide cost effective and high-quality products by delivering exceptional customer care. Artemis aims at making mobile phone shopping affordable, accessible and easy; Bacchus aims at providing shopping experience that is confident, convenient and comfortable. One common focus is on building customers trust on quality of service.

Although all three have an online presence, mobile-enabled online shopping does not play a significant role in their operating model, however digital marketing plays a crucial role in Ceres and Bacchus as they seek to attract customers to their physical stores with over 20 and 80 stores across Lagos, Abuja and major cities in Nigeria respectively. It is interesting to note that both Ceres and Bacchus have partnered with the major EC platforms to sell their products.

Retail pharmaceutical

The health and beauty sector, although a very fragmented market, sees specialist retailers current value growth of 7% to reach sales of NGN749.5 billion in 2019 (Euromonitor International, 2020). Boosted by Nigerians increasing awareness of health, wellness and interest in women's beauty products. There are about ten major retail pharma specialists with Venus and Apollo representing two of the top-leading brands by market value.

Both Venus and Apollo have been in operation for over 10 years, have offices in major states and employ over 500 staff. Venus aims to be the leading provider of rare ethical drugs and medical devices for health care professionals with a mission to provide innovative products and reliable services for health promotion and therapeutic interventions and Apollo prides itself as being the first integrative pharmacy and the fastest growing pharmacy chain in West Africa with their mission aimed at helping people achieve optimum health and vitality.

Both organisations operate online with links to connect its customers via social media handles. Apollo also operates a live chat to speak to a pharmacist on health issues. Both organisations are keen to exploit some of the benefits of MC, having a mobile-enabled site with Apollo looking to launch a mobile App on both IOS and Google play store and Venus giving its agents mobile application devices to support online sales and delivery.

Fashion and apparel

The apparel and footwear retail sector are significant, accounting for current value growth of 14% with sales of NGN5.6 billion in 2019 (Euromonitor International, 2020). Athena is one of the top 35 online players in this space offers unique clothing, shoes, watches and fashion accessories to young, fashion-conscious customers through online shopping in Nigeria.

Athena launched as a privately owned online business over six years ago and has about 11 – 50 employees, with opportunities to rotate staff based on seasonality of sales. It's transitioned from a mobile enable site only, to expanding to offline store in Port Harcourt.

Its mission is to be the one-stop shopping mall aimed at providing fashion products customers can trust, at the right price through exceptional customer service. Digital commerce plays a key role its marketing and social media although Athena has put its mobile application development on hold following unsuccessful implementation in the past.

Table 6-2: Case study organisation profile

Firm	Retail Sector	Size (number of employees)	Age (in years)	Location (Cities)
Zeus	EC	5001 +	6 – 10	Online with collection points in Nigeria’s main cities.
Hera	EC	1001 - 5000	6 – 10	Online with 31 stores across major cities in Nigeria.
Hermes	EC	51 – 200	>10	Online in Nigeria, Ghana, and Kenya.
Hades	EC	201 - 500	6 – 10 ***	N/A
Hestia	Supermarket	1001 - 5000	3 – 5	4 stores in Lagos
Ares	Supermarket	1001 - 5000	>10	8 malls in Lagos, Abuja, Enugu, Port-Harcourt. + 10 African countries and Europe, middle East and Oceania
Vulcan	Supermarket	11-50	<3	1 store in Lagos
Venus	Retail Pharmaceutical	201 - 500	>10	14 branches: 5 - Lagos, 3 Port -Harcourt, 2 – Onitsha, 2 – Enugu, 1 – Awka, 1 - Abuja
Apollo	Retail Pharmaceutical	501 - 1000	10	90+ stores across major cities in Nigeria
Ceres	Electronics & Appliances	51 – 200	>10	20 stores across Lagos, Abuja (2), Asaba
Artemis	Electronics & Appliances	51 – 200	>10	2 stores Lagos and Abuja
Bacchus	Electronics & Appliances	51 – 200	6 - 10	80+ stores across Lagos, Akure and eastern Nigeria
Athena	Fashion retail	11-50	6 - 10	Online and 1 store in Port- Harcourt
(***) company closure – December 2018				

6.1.2.2 Organisation business model

Using Osterwalder and Yves (2010) business model canvas as the framework to understand the organisation under study’s business model and the potential opportunities MC provides for transformation and extending business value to customers. This is comprised of nine fundamental components that depict how the businesses operate.

Key Partnerships (KP)

Key partnerships forged by retailers included strategic alliances, buyer-seller relationship and joint-venture partnerships. Strategic alliances between retailer and network providers, EC organisation and electronic dealers to provide customers access to cheaper network bundles and data was identified. Also, alliances formed with 3rd party logistics organisations to deliver products to customers within and across states and internationally. Some of the organisations have adopted buyer-seller relationships to gain access to the suppliers. For example, Hermes has strong relationships with retailers within the US and UK to enable direct access via its app to fashion products for its customers across Africa. Similarly, the retail pharmacies have access to drug manufacturers, such as GE while Ares prides itself in developing partnership with local suppliers to provide local products such as fruits and vegetables. The third type of partnership which is significant to the study is joint venture investment. Our findings show that such financial partnerships are common with larger EC organisations - see Figure 6-3: Business model canvas of the 13 Case study organisation - adapted from Osterwalder and Yves (2010).

Key Activities (KA)

The essential tasks to fulfil the organisations business purpose were examined including activities to fulfil the organisations value proposition, satisfy its customer segment and generate revenue. Findings reveal the two groups of activities (i.e., platform/market place and traditional “brick and mortar” retail) with financing a secondary activity for four organisations (Zeus, Hera, Hermes and Ceres).

Zeus and Hera adopt a supplier to marketplace to customer business model and therefore operate in direct competition to each other. Hermes does not hold any inventory and uses its mobile application platform to integrate customers and overseas suppliers in UK and US directly while managing the logistics to get the goods to the customer, whereas both Zeus and Hera hold stock and have warehouses with Hera operating more of a multichannel (store and online) retail model. Hades on the

other hand is solely a mobile and EC platform that connected the customers to the seller of the product and makes its revenue solely from commission and marketing.

Other organisations adopt a more traditional “brick and mortar” store with a set of retail activities centred around providing customers physical access to the product and service through direct selling. None of these organisations saw logistics as their primary activity with most outsourcing this activity to 3rd party suppliers. Evidence from the superstores and speaking to most respondents’ post Covid (August 2020) suggests that these organisations had to adapt slightly with Ares offering home delivery in Lagos and Abuja cities only and Vulcan delivering within Lagos thus providing convenience for its customers impacted by the lockdown.

Key Resources (KR)

Research identified key organisation resources to include:

Human resource (employees): was considered key to delivering activities most especially the “J-Force” that supported Zeus business model in their ability to reach new customers. Similarly, business representatives employed in the retail-pharma sector identified with this view. Noteworthy, was the impact of training and employee turnover highlighted by the head of retail at Venus as well as the lack of skilled personnel especially in the EC sector as highlighted by the Financial Accountant at Zeus.

Financial: access to lines of credit either via private investment or foreign investment in EC platforms. The lack of finance was seen as a major barrier to business entry.

IT and Intellectual property (brand, patents, IP, copyright): implementation of mobile enabled website is common across all organisations. However, access to IT and IPs to developed mobile shopping or payment apps such as Zeus Pay used by Zeus, was limited.

Physical equipment, (inventory, buildings): most of the retail organisations operate from a physical store apart from Zeus and Hermes that have delivery centres. They also have physical warehouses where inventory and stock are maintained.

Customer Segment (CS)

The findings revealed three customer segment splits:

Multi-sided markets: with Zeus and Hera targeting both vendor and interdependent customers.

Mass market: targeted by the supermarkets who do not focus on a specific group of consumers but target the general population with similar needs.

Niche market: Is focused on a specific group of people with unique needs and traits. This included:

- working class (bankers and non-bankers) targeted by Ceres, Artemis and Bacchus within the electronic sector.
- tech-savvy customers: as above but looking to provide customers with the latest phone and accessories.
- local shoppers: targeted by Vulcan, whose mission is to provide convenience targeting the local Ikeja - Lagos customer.
- furniture customers: targeted by Ares providing niche furniture to its supermarket customers.
- health and medical conscious customers: targeted by both retail pharma.
- fashion conscious: as targeted by Athena.

Customer Relationship (CR)

Customer relationship describes the customer segment and captures business interactions with the customers throughout summarised as:

- Automated self-service: All organisations provide a level of mobile- enabled website service to enable the customer journey either enquiry, ordering, or online payment. Only the EC organisations provide relationship via a mobile application.
- Personal Assistance: In-store personnel enable organisations with stores to interact with the customers in person. Online personal assistance is also provided by some retails such as Ceres and Athena through services such as WhatsApp chat bots.

- **Communities:** Although not common, one of the relationships applied by the leading EC organisation is the presence of offline and online J-force communities that spread the word about Zeus and the services they offer. This community as agents, serve to provide relevant information on topics like safety online and how to avoid fakes.

No significant element of co-creation between retailers and its customers were identified, to enable co-design or development of its product or service.

Channels (Multichannel vs Omnichannel)

Multichannel describes distinct channels through which an organisations product and services reaches its customers (see Figure 6-1 and Figure 6-2). It allows for customers to engage and purchase natively on which ever channel that offers them the best experience whether on mobile, online, physical store, social media, partner channels etc. Each channel is usually treated in silos independent from one another with each channel operating as a separate purchase channel (Winkler, 2019).

Omnichannel relates to the means by which organisations try to create a seamless customer experience across all channels, for the customer to access its products and services. Omnichannel retail aims to integrate the customer experience across channels (Turban, et al., 2015, pp. 205-206). From observations, most of the retailers in the study are not yet as sophisticated to offer its customers this experience. It is interesting to see that there are some pure online players like Zeus; similarly other firms consider themselves more as pure brick and mortar like Hestia, Bacchus and Vulcan, but at the same time there is a hybrid like Venus and Apollo that started offline but has embraced online channels and Hera and Athena that started online but now have brick and mortar stores.

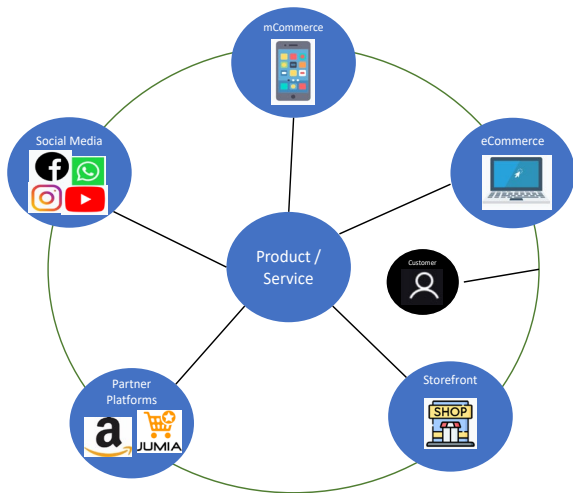


Figure 6-1: Multichannel retail



Figure 6-2: Omnichannel retail

Findings revealed the channels by which organisations reach customers was through digital channels such as its website, mobile app or via social media; own traditional “brick and mortar” offline stores as their primary channel - a model adopted by Hestia, Ares, Apollo, Ceres, Artemis and Vulcan; and partner channel, where Hermes through its app, provides customers access to US and UK brands directly to the supplier partner portals. For example, through the Hermes app, users can access Macy’s, Tommy, Amazon, etc.

One of the reasons organisations like Apollo identified with adopting an online channel is the geographical coverage and wider reach it offers with access to mobile phone users even in remote parts. This was same for the other retail pharma. Organisations like Bacchus that have not adopted their own MC platform, using the 'partner channel' model to place products on partner-owned sites, still consider themselves to be 'brick and mortar'. These firms seem to have taken advantage of social media mobile applications like WhatsApp, Instagram, Facebook, YouTube etc. for marketing and communication. However, them adopting an integrated omnichannel model is still at its infancy.

Revenue Streams (RS)

Following respondents' feedback, the sources from which the retail organisations generate money by selling their product or service to customers include the following revenue models

- Transaction-based revenue: All organisations revenue is generated from customers and revenue streams include:
 - Direct sales revenue e.g., gift card sales, pre-paid and payment on delivery sales,
 - Indirect list price sales revenue (value chain),
 - Commission fees,
 - Finance related fees e.g., instalment payment – NowLater, Pay Easy, Flex (option)
 - Advertising fees
- Recurring revenue: none of the organisations adopted a pay-per-use or paying for scalable modular services. It must be noted the subscription services is not common, except network providers like MTN that offer pay-as-you-go (payg) mobile tariff.

Cost Structure (CS)

This relates to the costs to operate the business and as deliver the organisations value propositions, create revenue streams, and maintain customer relationships.

- Cost drivers: consistently identified by the retail organisations include typical cost of goods sold and running costs such as employee salaries, staff recruitment, logistics costs including “reverse logistics”³⁶ for delivering and returning products, marketing costs etc.
- Value drivers: aimed at maximizing customer values was offered by some organisations through percentage discounts (in case where a customer pre-pays rather than opts for pay-on-delivery). Local promotions as offered by Hestia was another value incentive.

³⁶ Reverse logistics (RL) is a process of dealing with products and services that have been returned by customers to the company (Waqas, et al., 2021).

Value Proposition (VP)

The value proposition represents the unique products and services offered by organisations to meet customer requirements with emerging themes such as:

- Connecting customer to products from the rest of the world – Zeus, Hera and Hermes
- Providing convenience and in-store customer experiences - Hestia and Vulcan
- Providing customers with a variety of products - Ares
- Integrative and ethically sourced drugs – Apollo and Venus
- Trusted mobile phone and fashion mall retailer – Artemis and Athena

The business model for all case study organisations is summarised in Figure 6-3: Business model canvas of the 13 Case study organisation - adapted from Osterwalder and Yves (2010) below.

<p>KP – Key Partnership</p> <p>Strategic Alliances</p> <ul style="list-style-type: none"> • Telecommunication Network providers such as MTN, Etisalat and GLO • 3rd Party Logistic companies e.g. DHL • eCommerce Alliance e.g. Jumia <p>Buyer-Seller Relationship</p> <ul style="list-style-type: none"> • Health Organisations i.e. GE • Original Equipment Manufacturers (OEMs) • Local partnership with smaller providers • US & UK brand extension <p>Joint Venture / Financing</p> <ul style="list-style-type: none"> • Multiple Foreign Investors • Finance & Credit profiling Partners • Local Banks and Single Investors • Affiliate Partner and franchise 	<p>KA – Key Activities</p> <p>Platform / Marketplace</p> <ul style="list-style-type: none"> • Buying & selling directly & Indirectly • Commission / fees • Marketing / Advertising • Warehousing <p>Traditional Retail</p> <ul style="list-style-type: none"> • Buying and Selling directly • Marketing • Service provisioning e.g. health and wellbeing, mobile aftercare • Warehousing <p>Financing</p> <ul style="list-style-type: none"> • Credit line / loan 	<p>VP – Value Proposition</p> <ul style="list-style-type: none"> • Connect vendor & customer integration for local and international (China) goods • Connect vendors and customers to the rest of the world through Technology & Commerce. • Customers to shop directly on top US and UK stores • Customers to shop for deals • In store customer experience • Offer customers wide range of quality products at lower price • Convenience and friendly shopping experience • Provider of ethically sourced drugs • Integrative pharmacy caring for customers health and wellness • Preferred Mobile Phone sales and Service company, aimed at improving customer shopping experience, convenience and Customer satisfaction • Trusted supplier of mobile phones • Offer latest information and news on digital products online while supplying those products in physical store. • Trusted online fashion mall - guarantee cash refund / money back 	<p>CR – Customer Relationship</p> <p>Automated self-service</p> <ul style="list-style-type: none"> • Automated service through apps and on web • Self - service (Direct customer - vendor interaction) <p>Personal Assistance</p> <ul style="list-style-type: none"> • Instore personal service • Online personal assistance e.g. via WhatsApp <p>Communities:</p> <ul style="list-style-type: none"> • J-Force communities • Social media communities 	<p>CS – Customer Segment</p> <p>Multi-sided markets</p> <p>Mass market</p> <p>Niche market</p> <ul style="list-style-type: none"> • Niche working class (bankers & non-bankers) • Niche tech savvy customers • Niche local shoppers (Lagos) • Niche furniture customers • Niche health and medical conscious • Niche phone customers • Niche Fashion conscious young Customers
<p>KR – Key Resources</p> <p>Human Resource</p> <ul style="list-style-type: none"> • Employees • Owner / CEO • J-force • Pharmacists & Agents & Representatives <p>IT and Intellectual Brand</p> <ul style="list-style-type: none"> • Patent pending application on App • Market place • Website / Online platform (Magento) • Mobile applications such as - K – Pay, J-Pay, Mall mob • Brand name 	<p>Physical</p> <ul style="list-style-type: none"> • physical stores • logistics (International, internal & 3rd Party) • Delivery hubs / centres <p>Financial</p> <ul style="list-style-type: none"> • Foreign Investment e.g. Mobile manufacturer investment • Privat investment 	<p>Value drivers</p> <ul style="list-style-type: none"> • Discounts e.g. 5% discounts on Pre-paid, Loyalty cards • Local promos 	<p>CH - Channels</p> <p>Own Digital channels</p> <ul style="list-style-type: none"> • Organisation eCommerce platform / website • Organisation Mobile Apps • Social media handles – Facebook, WhatsApp and Instagram <p>Own traditional channel</p> <ul style="list-style-type: none"> • Retail stores <p>Partner Channel</p> <ul style="list-style-type: none"> • Partner owned sites e.g. Hermes 	
<p>C – Cost Structure (NGN)</p> <p>Cost drivers</p> <ul style="list-style-type: none"> • Commission payments (J-Force), aggressive growth • Technology Investment including mobile app investment • Physical stores and fitting, warehouse, logistics, reverse logistics freight, inventory • Foreign exchange rate • Marketing including digital marketing • Staff costs (Local & Int Support), staff recruitment (turnover) 		<p>R – Revenue (NGN)</p> <p>Transaction based revenue</p> <ul style="list-style-type: none"> • Direct sales revenue e.g. gift card sales, pre-paid and paid • Indirect list price sales revenue (value chain) • Commission fees • Finance related fees e.g. instalment payment – NowLater, Pay Easy, Flex (option) • Advertising fees 		

Figure 6-3: Business model canvas of the 13 Case study organisation - adapted from Osterwalder and Yves (2010)

6.2. Qualitative data analysis

As the research seeks to understand the phenomenon of MC adoption within the Nigerian retail context, it employs an open and broad analytical data view without focusing on some data at the expense of other potential critical data elements (Braun & Clarke, 2006), while adopting a thematic analysis. By applying an inductive approach to thematic analysis, themes identified are strongly linked to the data without trying to fit into pre-existing concepts or theories. This has the advantage of enhancing the analysis by not engaging with the literature in the early stages of the analysis.

The unit of analysis in this exploratory study consists of two nested levels (organisations and consumers). The data set that consists of the data corpus (all data collected for a particular research) used for this particular analysis focuses on interview responses from participant organisations and open-ended interview response from participant consumers. The research therefore searches across the data set to identify repeated patterns of meaning or themes. The analysis followed an iterative thematic analysis process as outlined by Braun & Clarke (2006) and Bryman (2016, p. 588) consisting of the following six steps:

1. data familiarization: this involves reading through the field notes and initial transcribed data with the aim of getting to grips with the content to gain an initial sense of the data following reviews of the transcript for verbal utterances, software challenges of dealing with the “African accent” and inaccurate translations– see Appendix 10.5 Thematic analysis process (steps 1& 2). Prior to data analysis, transcript data was cleansed and ready to be imported into NVivo 12. This was followed by anonymisation of the data (where possible) to ensure organisation confidentiality.
2. Initial coding: grouped research questions into main heading and sub-heading to enable auto-coding. Grouped by Q1-Q7 for the organisation’s response and Q1-Q5 for the customers response. It is important to note that the initial coding was more ‘data-driven’ with the themes depending on the data than ‘theory-driven’. Once auto-coding data was loaded, further queries were run to give a better feel of data. For example,

- Word frequency query – how many times participants mentioned the word, with the most frequent (including company, customers', platform, mobile, commerce, online)
- Text Search query – to understand the context in which it was mentioned. By selecting the top five to ten words and clicking on word tree to visualise the words / sentence before and after.

First order coding was performed by indexing the data into nodes according to research questions.

3. Searching for themes (sub-categories): higher order coding was performed to identify categories and sub categories by collating codes into potential themes, for example:

Category: Economic environment

Code: Emerging digital commerce sector

Code: Exchange rate

Code: Purchasing power

Category: Employee factors

Code: Agents & Representatives

Code: Skills

Code: Training

Over 140 nodes identified and grouped into sub-themes and main themes - see Figure 6-4.

4. evaluate themes: this step involved ensuring the themes work in relation to nodes across the data set. In this phase, some nodes were merged, un-coded and re-coded to their appropriate nodes. It was at this stage that the conceptual framework and literature was referred to, giving meaning to the emerging themes in line with the theory.
5. examining connections and links between concepts: this step was quite analytical and involved mapping a “spiders web” of the themes and sub-themes as well as analysing concepts in terms of organisations that operate a pure online market place versus organisation that operate an omnichannel versus multichannel retailer strategy. The themes were further linked to expose the

main antecedent factors to MC adoption by organisations. Figure 6-4 shows how the synthesis of the themes was developed from NVivo.

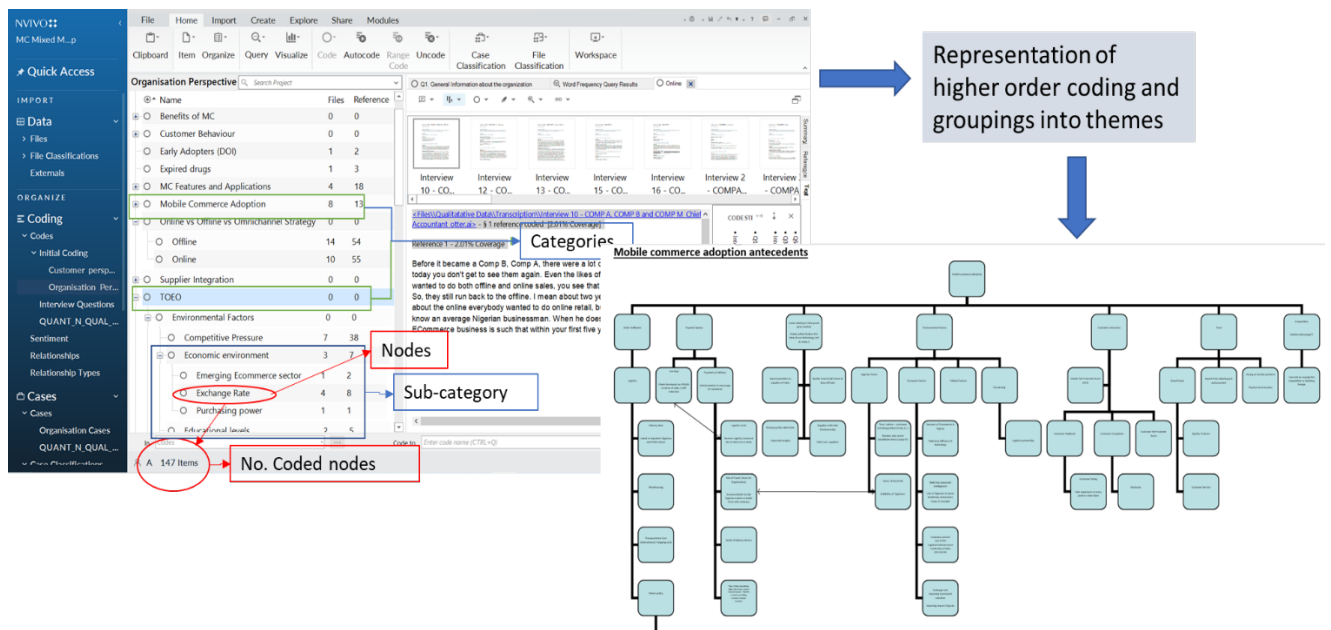


Figure 6-4: Process of synthesising qualitative data into themes

6. write-up insights: in the last step, thematic analysis and findings aimed at answering the research questions are presented in section 6.3 below.

6.3. Qualitative findings

In this section, the presentation of themes supported by quotations is used to clarify the qualitative results and address the research questions as depicted below. An analysis of thematic analysis using NVivo is presented for each dimension of organisation conceptualised MC adoption framework. Findings from the thematic analysis is presented in the following structure (i) MC adoption intention in organisations (ii) classification of MC applications (iii) organisation MC adoption process (iv) antecedents to organisations MC adoption (v) organisation value co-creation (vi) MC value outcomes.

6.3.1. MC adoption intention in organisations

The case study examined current organisation MC usage as well as their future MC adoption intentions. As all organisations had some form of online presence, the results revealed that the EC

platforms, retail pharmaceutical and fashion organisation were adopting mobile enabled shopping and applications. Whereas the supermarket and electronics appliance organisations considered MC to be part of their future adoption intention.

Figure 6-5 below demonstrates how the quotes from organisation participants have been grouped to form sub-categories and themes relating to adoption intention.

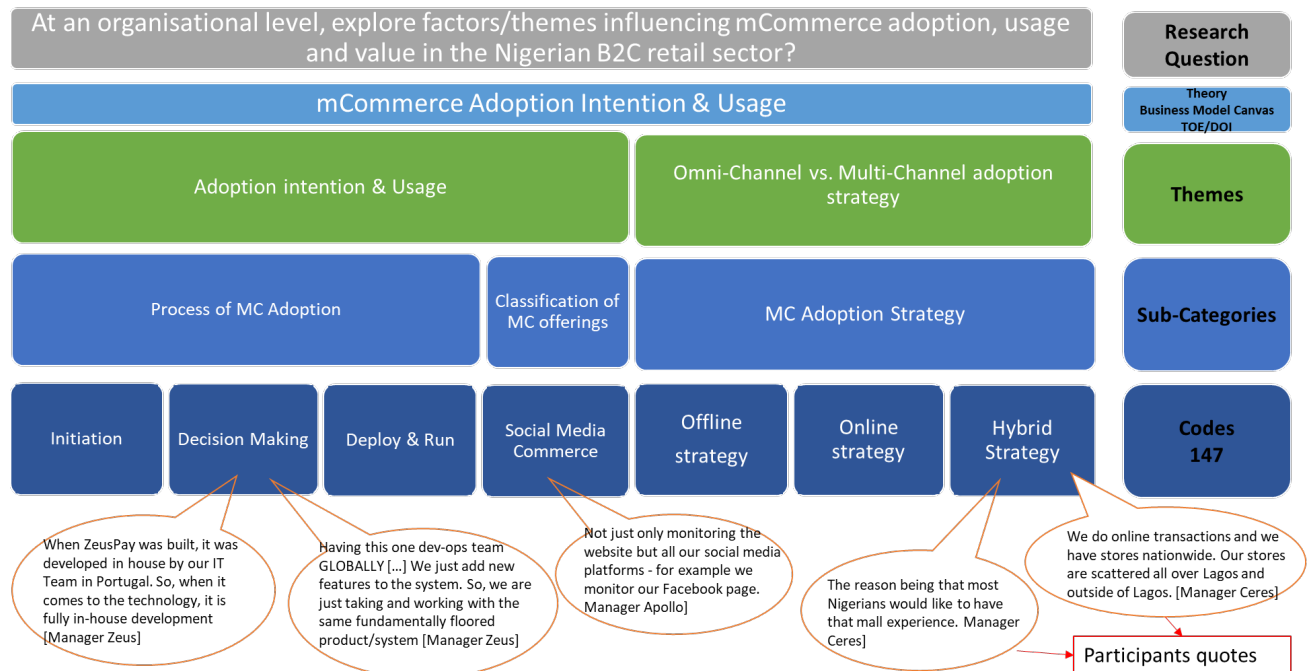


Figure 6-5: Organisation Mobile Commerce adoption intention and usage

6.3.2. Classification of MC application adopted by Nigerian retailers

The findings reveal the MC applications adopted by case study organisations consists of mobile transactions, mobile marketing and location-based applications (refer to Figure 6-6).

Mobile transactions such as mobile shopping and payments apps was seen to only have been adopted by the large EC retailers with other respondents stating this was something to consider in the future.

“Yes, there is benefit in mobile applications. All of us has mobile applications Hera has (Hera App, Hera Pay), Zeus has (Zeus App, Zeus Pay), Pay Porte. Virtually all of the e-commerce retailers have mobile application”. [Financial Accountant, Zeus]

“We have not gone to that level by mobile app application or payment. Yeah. we're not done it yet.

However, it is something we're looking for in the future”. [IT Manager, Ares]

[...] we are still in the process of developing the mobile app” [Head of Business Development, Apollo]

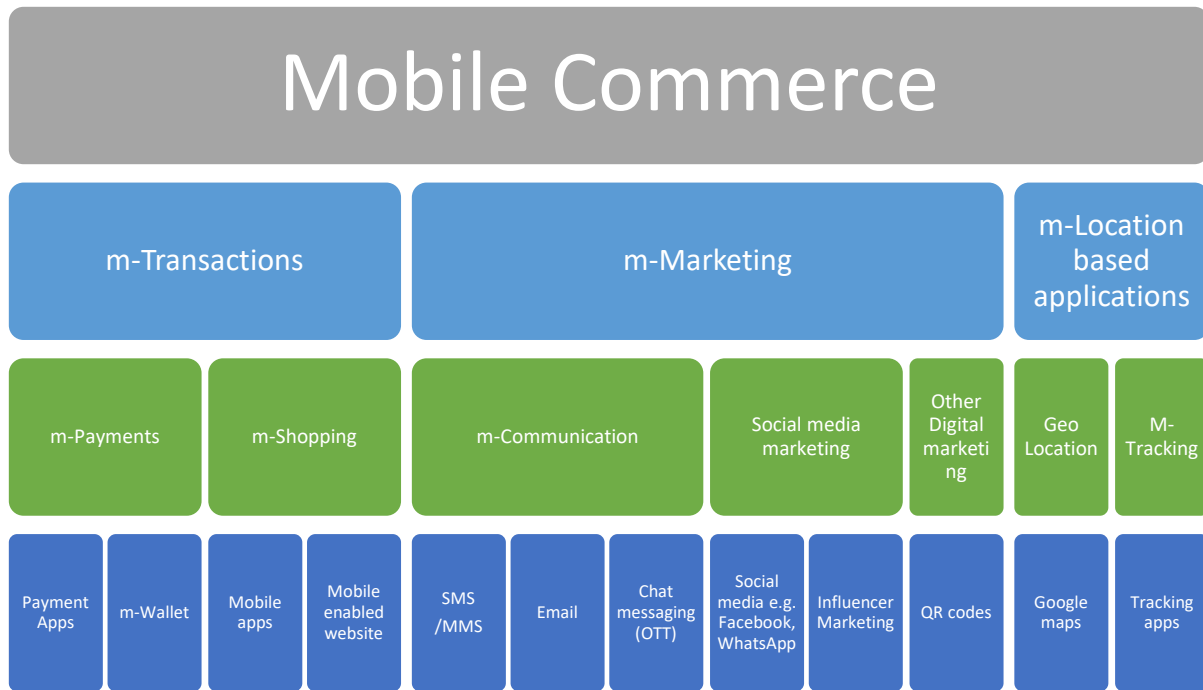


Figure 6-6: Classification of MC Applications adopted by case study organisations

Conventional mobile marketing applications such as QR codes had a low adoption rate, with one respondent from Bacchus confirming they had only adopted it once as part of their electronics business launch; but it was not successful. However, findings revealed a relatively high rate of adoption of online marketing via social media platforms such as WhatsApp and Facebook to reach customers.

[...] We have social media handles and all that. So, on our site too, we put this chat (people can chat with us)” [Manager, Ceres]

“We just created a department last year. That is responsible for that... We designed and have a website, WhatsApp group, Instagram, twitter.” [IT Manager, Venus]

“Yes, not just only monitoring the website but all our social media platforms [...] [IT service Mgr. Apollo]

Rate of adoption for location-based applications such as GPS trackers is low, with respondents seeing the potential benefit.

[...] where if it takes four hours of five hours, we pre-inform the customer also through the Google API. Our tracking system will work from Google maps API" [IT Manager, Ares]

Opportunities were identified to track groceries, drugs and fashion related delivery, especially with the traffic issues in the region.

6.3.3. Organisations MC adoption process

The finding provided an understanding on the organisations MC adoption process. Following on from similar IS adoption process (Roger 1983; Agarwal and Prasad 1998; Cooper and Zmud 1990; Kwon and Zmud 1987; Moore and Benbasat 1991), the results reveal the following adoption process:

1. Initiation phase: initial awareness and evaluation of the MC technology
 - a. Awareness of MC: respondents were familiar with MC and its potential but were of the opinion that Nigeria was not "there yet", when it comes to adoption.
 - b. Drivers: to adoption including benefit vs cost of technology, organisation endowment and customer market expectation was identified as antecedent factors.
 - c. Problem fit – some respondents suggested that some of the technology adopted was as a result of solving a need. For example, the founder of Hermes created the mobile application to enable customers shop directly via platforms of international brands (friends and family requested him to purchase designer clothing on their behalf when he travelled to the USA or UK).
2. Decision making phase: how to access technology. Phase triggers actual technology adoption and the make or buy decision

- a. Make: findings reveal that apart from setting up the mobile enabled website, larger marketplace platforms develop their own applications in-house. For example, senior executive in Zeus explained:

[...] “when Zeus Pay was built, it was developed by our IT Team in Portugal. So, when it comes to the technology, it is fully in-house development”.

In the case of Hermes, the respondent confirm that they have filed for Intellectual Property (IP) rights for their mobile application platform that links customers to international brands and further explained that this was developed in-house overseas. This is further supported by the policy on its website. Respondent from Zeus admitted that adopting in-house development affected their ability to react to customer needs and the time it took to deploy with comments as:

[...] I will say Zeus is not so nimble to respond to the needs of customers within its market. admitting that (for competing company Hera) “in terms of like, the tech at least the tech infrastructure was much better “[...]”

Suggesting also, that due to the fact that all development was managed globally, it was difficult to make a solution that was customised for the local Nigerian market:

[...] “We don't have the time or the energy to redesign the thinking of the seller’s user journey in mind, you know. We just add new features to the system”. [...]

- b. Buy: in cases where organisations have embraced mobile adoption, findings reveal that most organisations adopted developed applications or integrated with already existing Application Process Integration (APIs) by buying off-the-shelf software or hardware technology. For example, when Venus was asked about, how they went about adopting their mobile application, the IT manager responded by stating:

[...] “it was purchased abroad. They developed it there. There is a company that built it for us. We told them our business requirement and what we need, so they went ahead to procure it”

Similarly, Athena purchased an open-source EC shopping platform and confirmed that they worked with the foreign engineers to set up a secure and reliable mobile enabled site by stating:

[...] “Over time we have improved our platform and technology, currently we are using Magento 2.0”.

Furthermore, respondents from Zeus, Ceres, Bacchus, Vulcan, Apollo, Hermes and all confirmed that they have adopted ready-made applications such as WhatsApp and Facebook as part of their social media commerce and digital strategy. Findings suggest that by adopting ready-made applications, organisations in Nigeria are able to provide a standardized, fast and cost-effective approach of reaching a broad customer base with respondents’ comments when asked why they adopted this strategy including:

“We will quickly put it on social media saying, "I have customers from Kaduna and customer from Maiduguri". So, I believe that what they call globalization, yeah “[...] Hermes

[...] “We have a live chat, we have Facebook, we have Instagram, we have WhatsApp. So, we use all of these platforms to reach and service our customers” [...] Athena

[...] I've haven't actually updated my FB page, what is there is just when we started. By the time we do the awareness, I'm going to send the link more to people [...] Vulcan

[...] not just only monitoring the website but all our social media platforms - for example we monitor our Facebook page with about 20K followers. We also have tweeter, LinkedIn and Instagram handles [...] Apollo

- c. Allies and strategic partnerships: collaboration and partnership within the context of mobile information communication technology (mICT) has been adopted by larger organisations as part of the customer B2C value co-creation process (Pena, et al., 2014). Finding evidence that case study organisations formed external partnerships (See Figure

6-3) with mobile network service providers: MTN, Globacom, Airtel and 9mobile; and mobile technology vendors: Techno, Samsung, Huawei, Itel and Infinix. Respondents suggested that to gain entrant in the EC ecosystem, they collaborated with major network providers and they continue to do so stating:

[...] with MTN being one of the founding investors [...] we try to find within the ecosystem that we could, you know, drive each other's objectives. [...] we will always look out to tell customers, promotions that MTN have or if they have devices they want to sell, we put it on the platform, run campaigns etc”.

“[...] in Nigeria we sold millions of devices. You know, we really drove the penetration of smartphones specifically in Nigeria. [...] no matter what their income is, at least they have access to a smartphone, which they can use Zeus app. They can access the internet via the mobile web as well. [...] we would partner with MTN; MTN wants lots of connections, so we will partner with MTN and you get a free sim when you buy a mobile device from Zeus”

[...] the company worked a lot with people like Infinix, Tecno and NG to develop new smartphones that were tailored to the Nigerian environment and at acceptable prices and we push that a lot”

All three of the electronics retail providers we spoke to (Ceres, Artemis and Bacchus) all have strategic allegiance with some of the mobile manufacturers. For example, Ceres claims to offer the best customer care to its customers that have issues with the mobile devices purchased within their store and they are able to resolve issues directly with the manufacturer.

“We have the fastest response time. When we replace the phone for you, we go back to the manufacturer and we negotiate with them and talk to them. We don't want you to get involved [...] We have partnership with Itel, we have partnership with Samsung etc. [...] If there is any return and its manufacturer's fault, we communicate to the manufacturer. We change the phone first for the customer and then we communicate to the manufacturer.”

- d. Hybrid: research revealed a fourth MC adoption process that is impacted by cost, adaptability and on a time to value for retail organisations. Compared to make or buy strategies, respondents reflected the strategy of “copy-and-paste” similar to imitation strategy in technology innovation where one would copy technology and tailor to Nigerian specific requirements with consideration to cost and adaptability to local Nigerian needs (Mathauer and Hofmann, 2019). This is supported by respondents:

“It will be a hybrid approach when it comes to implementing our mobile technology for the health industry. So, they are looking to get a package from UK / US. Remember when I said it's hasn't been done before so there's a lot of tweaking, there is a lot of trials to make it feasible for us in the Nigerian retail pharma”. [Apollo].

The lack of investment in R&D, budget constraints, imitation and lack of know-how have all been mentioned as a major hinderance to technology innovation and MC adoption.

“we are not at the front end of this EC. Anything, Zeus does, if Zeus does something very revolutionary, we can always copy from them, ...because we don't have such capital. [Ceres]

{...} Yes, we follow. We are not an innovation leader in the market because Zeus and Hera are full scale EC like Amazon. [Ceres]

[...] What I noticed is the concept of "copy and paste" from - Abroad, from there but we don't copy and paste everything and do it the way they do it abroad”. [Vulcan]

“We don't want and will not do the R&D because it is a lot of money and yes, a lot of experiment too. Because we don't even know how people respond. We don't even know if it is going to work”. If you spend a lot of money in R&D, Zeus is able to do that, do you know how painful, its pain staking, you work on something then someone will come and pick it up and copy it you know. They can even market it as if they are the owners of it. That's technology for you. We don't want to do that, so we would rather imitate, and we will copy, no problem” [Bacchus]

3. Deploy and run phase: addresses the stages of embedding MC as part of business operations and how it creates value. Not covered by the study are factors such as (a) the user acceptance (by employees) and (b) Integration – speed, cost and quality as discussed in the article by Devaraj, et al., (2007) and Busse and Wallenburg (2011). However, the process of acceptance by customers and the value creation potential was addressed:

- a. Acceptance & use by customers: Findings reveal Zeus and Hera run pilot phases to test market accessibility, to test market penetration, to test the product viability. The Senior Accountant from Zeus confirmed the companies typically do not launch the new application at once without some user testing.

6.3.4. Antecedent factors to organisation MC adoption

The research identified the following factors (negative or positive) influencing MC adoption (see Figure 6-7 below). Using the TOE framework and DOI theory, the below themes are discussed.

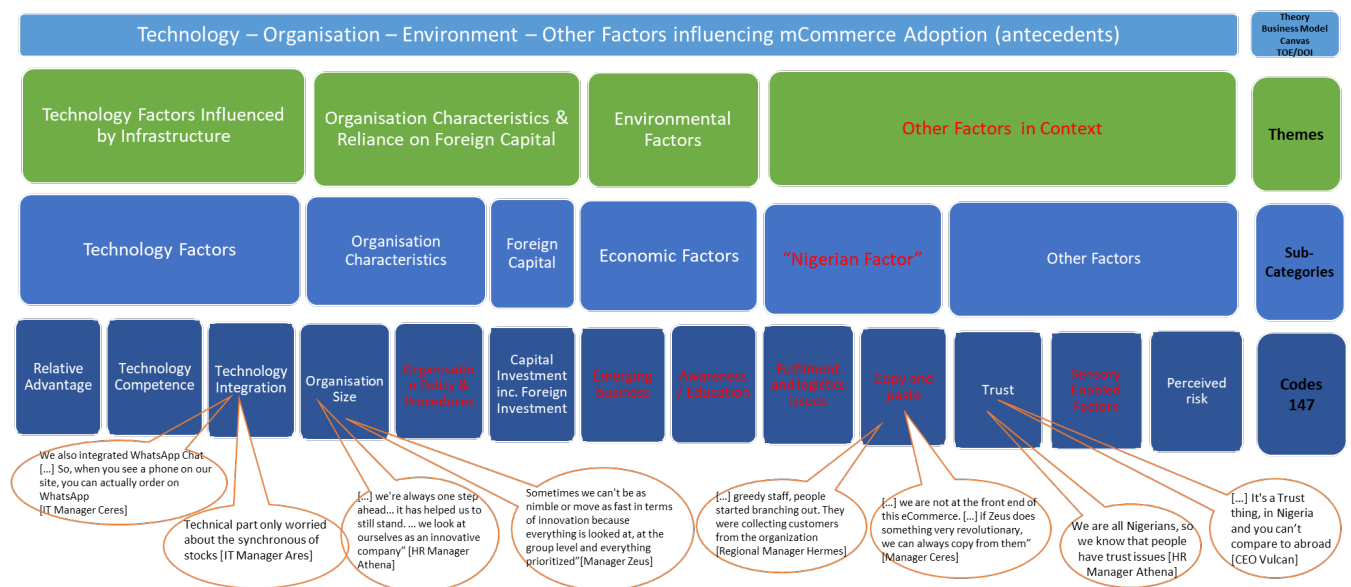


Fig 6-7 Highlighted in red are emerging themes identified following qualitative analysis

Figure 6-7: Antecedents to Organisation MCA

6.3.4.1 Technology factors

- i. Relative advantage: the degree to which organisations perceive benefits from implementing MC was identified by a low number of respondents with one organisation suggesting that they

would like to improve on technology by having a price-comparison site which is currently not common in Nigeria. The research identified two players considered to be market leaders, since 2012 or 'early adopters' of mobile enabled commerce. Some of the respondents opted to adopt a "copy" strategy depending upon when so-called market leaders have successfully implemented such strategies. Lack of R&D budget to trial what the market needs was an obstacle.

- ii. **Task Technology fit:** Respondents identified competence as an important factor to deliver on the MC tasks across three dimensions: integrator competence, internal competence and customers' competence. It was found that most organisation outsource ongoing maintenance and development to organisations in UK, Portugal or China. Ability to acquire technical partners or staff with the required local and technical competencies was lacking in the industry. This describes the importance of organisations having the right technology orientation when adopting MC to enhance its performance and value (Martín, et al., 2012).
- iii. **Technology integration:** was considered significant by respondents in enabling MC adoption. Larger organisations offering payment options mentioned the need to integrate applications like Fintech services. There was strong interest in API for logistics to track and trace deliveries, billing processes and stock integration, payments application and credit facilities. Efficient market place integration from supplier to customer was identified. The timing of integration was uncovered with a need for a near real-time integration. Interestingly, embedding collaboration and messaging applications like WhatsApp highlights a cost-effective means of reaching customers. Integration of mainstream operating systems (IOS and Android) was identified as key to enabling MC adoption.
- iv. **Technology reliability:** was identified as impacting customer confidence. Issues such as technical glitches with processing orders, level of security, tracking of orders etc. Response from customer respondents also suggested reliability of service or product as important

factors for realising value from MC applications, thus the importance for MC technology to perform as expected.

- v. Vendor support: relates to the relationship and support infrastructure received from MC vendors (Köster, et al., 2016). In Nigeria, technology support and maintenance are largely imported. Most of the support is handled by foreign resources with local teams responsible for raising support incidents with one respondent stating:

The mobile application is available once they engage with the development team abroad.

Sometimes the Indian team, that initiate plenty of these app [Athena]

6.3.4.2 Organisational factors

- i. Organisation characteristics: revealed company culture and “a mobile mindset”, size, policy and leadership as key characteristics influencing MC adoption. Evidence suggests that company culture driven by its mission and vision influence MC adoption decisions (Damanpour, 1991; Frambach & Schillewaert, 2002). For example, Bacchus utilize mobile marketing to attract customers to its stores, to achieve its goal to be the number one retail brand in the mobile phone space. Similarly, Athena adopts a mobile enabled EC since its inception in its aims to be Nigerians first online fashion retailer of choice.

These firms consider themselves innovative and appear to have a reputation for thinking ahead of the competition with respondents stating:

“... most times we're always one step ahead... it has helped us to still stand. I will say we look at ourselves as an innovative company” [Athena]

“Some of our values is innovation, we appreciate that staff can come up with an idea. It does not have to be the manager or the boss” [Athena]

“[...] the culture is very, very fast paced, sometimes confusing with competing objectives” [Zeus]

“our CEO then was coming in and talking about okay, we need to change our mindset to mobile first, mobile first, mobile first” [Zeus].

Incorporating a ‘mobile first mindset’ orchestrating culture was considered substantive in the Nigerian business context. Most organisations build their website first and then adopt MC later with most acknowledging that at least 80% of orders placed were actually from a mobile device. Senior leadership emerged as a factor influencing adoption. Observation revealed that the leaders were products of foreign universities or had occupied management positions home or abroad leading technology, investment, retail or consulting firms. These individuals are considered pace setters in defining the MC landscape. One respondent noted that the former CEO of Hera and Hades was a product of Harvard University who once worked at Google. Another respondent considered the CEO of Hermes who lives in the US as the “brains behind Hermes”. Zeus Finance Accountant also suggesting that investors only trust or distrust top-management:

“Their willingness to drop more funds, is a function of their trust on the management team”.

Organisation size is one of the most commonly referenced factor that influences technology adoption with size influencing resource availability, decision agility, and prior technology experience (Damanpour, 1991; Zhu & Kraemer, 2005; Del, et al., 2006). Findings suggests that large multinational organisations with global reach operated differently to locally sole owned businesses when it came to MC adoption. For example, respondents from Ares suggested that when it considered implementing a mobile application, it was necessary to visit its offices in Netherlands and South Africa to adopt similar strategy. Ability to respond to changing markets was less of a priority for MNC with other respondent stating:

[...] sometimes you can't be as nimble or move as fast in terms of innovation because everything is looked at, at the group level and everything prioritized.” [Zeus]

[...] having this one development team globally that everybody's uses. We don't have the time or the energy to redesign the thinking of the seller's or customers user journey in mind, you know. We just add new features to the system." [Ceres]

The innovation is driven by the owner, pace and ease of flexibility to adopt MC. Locally owned enterprise was more atune to the local customer needs:

[...] as a one-man business, it has to be run with so much passion, compared to its larger retail comeditors" [Vlucan]

[...] most times, if those at the helm do not understand the market, or those managing the affairs do not have enough drive for the business, then overtime it dies off [Zeus].

Smaller sized firms with less likely to have access to funding, with investors expect quicker return on investment. One respondent stating:

"you know an average Nigerian businessman, when he does a business, he makes profit. Now EC business is such that within your first five years, you are still not making profit" [Zeus]

Another suggesting the shorttermism gratification or success expected by their board:

"[...] going to the board and asking to invest in MC, the response will be 'do you know what the cost of development is? The cost of paying developers'. He wouldn't want to do that. He would not do that as he is a businessman". [Bacchus]

- ii. Top management support: can foster innovation and is consistently found to be an antecedent to MC adoption in terms of time, resource availability and speed (Picoto, et al., 2014; Cobbs, et al., 2016; Chiu, et al., 2017). Positive influnece on TMS to deploy MC, was identified with comments:

"The CEO said, let's make this like a proper business. Let's set up a proper mobile app and website and that was how it started. [...] from just helping family and friends and then, it became a bit too much [...]
[Hermes]

"It's very, very top-down, you know, the global MD's will read about something or see a trend and then they'll come and that's like the focus for the next five, six weeks and then they will see another trend, and that's the next flavour" [Ares]

“We want to make it (i.e., MC) very effective. [...] I think my management are doing their best to make this happen, management is working tooth and nail [...] [Hestia]

Some negative influences on adoption identified with some respondents stating:

[...] but the fact that we are not doing it (i.e., MC) now is because that directive has not come from the top. [Ares]

[...] my CEO is someone that likes to put a lot of stress, he likes to see the numbers and the rest. [...] If you are spending money, you have to be able to show the success from that operation. [Bacchus]

iii. Financial resource: findings revealed access to finance and cost as constraints to MC adoption.

Adopting MC technology was considered cost intensive with respondents stating:

“[...] you either go to the bank for a loan where they will use their interest rates to chase you away or you meet investors who are always breathing down your neck to get their returns” [Zeus]

“Technology has gotten so advanced now, however companies see cost as a huge barrier to entry” [Venus]

“[...] cost is a barrier, because we are not selling very high equipment or all those things. If you see, we are selling supermarket products. So, we don't have a big margin” [Ares]

“We don't want and will not do the R&D because it is a lot of money and yes, a lot of experiment too. Because we don't even know how people respond. We don't even know if it is going to work” [Bacchus]

Venus suggested that the company paid a lot for the phones handed to its agents and the app enabling customer orders. “I raised my eyebrow when they wanted to start the investment with the amount that they were calling. From what I see, at least it is worth it.”

Bacchus and Ceres who are predominantly offline suggested that it would be a huge cost for them to innovate and adopt MC. Apollo also recognised that there are initial costs involved with

adopting MC, however overall, the cost benefit from what was invested in getting the technology, was considered relatively low.

Cost impact was also considered from the customer perspective with respondents suggesting that, mobile phones are becoming cheaper, giving individuals greater access. One suggesting that by having cheaper phones, it has resulted in enabling lots of Nigerians, no matter what their income is, to at least have access to a smartphone, enabling them to use Zeus App. A sentiment shared by respondents from Ceres, Zeus, Artemis, Bacchus and Hera that suggested their organisations worked with leading phone manufactures to bring cheaper phones with longer battery life into Nigeria.

“I guess you can say why the penetration of mobile phone usage has increased in Nigeria [...] we worked a lot with organisations like Infinix, Tecno and NG to develop new smartphones that were tailored to the Nigerian environment and at acceptable prices”. [Zeus]

Providing financing application to customer and sellers as part of their service offering, offers financial support to customers with another suggesting that having an app to monitor vendor ratings, enabled it to recommend clients to its financing division:

“[...] they can sell more volumes on our platform, than what their capacity or their original capital could have done normally” [Hera]

Level of investment and whether this investment was local or foreign investment was sometimes identified to influence organisations resource availability and ability to adopt innovative mobile technology.

- iv. Organisation policy and strategic alignment: suggest that policies and procedures adopted with regards customer returns, delivery and payments guidelines as outlined in the organisations mission and vision influence customer acceptance of MC. If policies are favourable, it in essence can build customers trust, enabling online shopping.

Return policy: inflexible return policy has a negative influence to MC adoption, with offers of 7day return policy as against 14days in say the UK. This makes pre-paid online payment less attractive

to customers. Bacchus suggesting offline store experience was preferred by its customers who could test the product in store before buying, thus reducing the need for returns. One of the main constraints regarding ease of return depends on the sourcing of the product. Local items (i.e., made in Nigeria) generally could be returned within the 7-day return period. However, international or globally sourced goods cannot be easily returned; mainly due to return cost like freight. Except where the item is faulty, or defective and attributable to the manufacturer.

However, to facilitate online trade and secure the protection of consumer rights, the Federal Republic of Nigeria passed the 2018 Federal Competition and Consumer Protection Bill (Udofa, et al., 2018). This exists to protect consumers and promote a fairer, efficient and competitive markets in the Nigerian economy.

Payment option: policy offering payment on delivery (PoD) as against pre-paying³⁷ aids building customer trust. Findings revealed the following organisations offered PoD: Zeus, Hera, Ceres, Venus and Athena; as against pre-paid: Artemis, Vulcan, Hermes and Apollo. PoD is seen as a policy incentive offered by new entrants into online EC or MC, as a means of enticing customers. However, respondents suggested that the policy has changed overtime and is based on certain criteria: (i) seasonality (ii) value (iii) customer location (iv) seller decision (v) item or product (vi) prior customer history or relationship level. Respondents' sentiment on payment policy include:

[...] no problem, you're not taking any risk, place the order, we will bring it to your doorstep, check it, is it what you ordered for? Is it what you want? If it's not please return it; if it is, you can bring out your money and pay us. [Athena]

[...] to enter the market, they really had to go with cash on delivery so people would order and then, they will be surprised when these things actually got to the door, you know and that helped to build trust over time. [Zeus]

³⁷ Pre-paid involves paying upfront for goods and services.

[...] mostly in fact 90% of the time our sales, in fact 95% of the time, even 98% our sales are pay on delivery because of what I told you earlier about people being sceptical, they want to see the item.
[Ceres]

However, issues of reverse logistics, risk and security concerns has led some organisations to re-think its PoD policy, with this having a significant effect on organisations performance.

“[...] why was prepaid more than POD (Cash on delivery), [...] most times when they bring these items that have not been paid, people will not come to collect it” [Zeus].

[...] for Hera, [...] for a while and for a long time, they were doing payments before delivery. [...] I think that was where they had to downsize 50% of their staff at one point” [Athena]

6.3.4.3 Environmental factors

- i. Economic factors: the EC sector has been extant with the early adopters such as Zeus and Hera entering the market in the last 10 years. This sentiment is shared with some respondents stating:

[...] I feel it is a young market, it is an emerging market but within the space of seven years, there are a lot of Nigerians who have come on board”. [Zeus]

[...] from my own evaluation, it's an emerging market. Lots of foreign investors are still very much willing, then local investors are ready to play with assurance of recovery of their initial investment.”
[Hermes]

[...] we have discovered that even though online business is very good, we know that online businesses is still an emerging business in Nigeria” [Artemis]

“EC here is going to take a long time to be adopted. People are doing it; people are using it but they do it with huh... let me just do it (trepidation) [...] [Vulcan]

[...] Mobile and online commerce is a welcome idea, but we are not there yet. The management are working towards that seriously.” [Hestia]

Findings reveal economic growth in mobile technology bolstered through sale of cheaper phones with longer battery life and dual-sim network and choice of network service, tariff and voice provider enables for a MC friendly economy. To promote MC adoption, some case study organisations like Hermes, Hera, Athena and Zeus resort to offering deals, promotions and incentives online on mobile application, evidenced by comments from respondents from Hades, Hera and Zeus who stated:

[...] They're usually incentives (Daily exclusive APP-only "Flash Sales" on top products and brands), you know there are some promos that we do that you can only buy through the mobile app" [Zeus]

[...] There are some products that we display, you know, people will not like it. But when we are doing adds, we try and do huge discounts on those products. We do discounts on it because one of the things with online commerce is, people online are smart. They know that if it's online, then it should be cheaper". [Ceres]

[...] The customers are always expecting discount and more discounts. So, when we are pushing our products, one of the strategies that we use to make sure that our online adverts translate into sales is that we give huge discounts. It works every now and then, it works. So, when you have an item, we can do 30% off, 50% off and its exclusive to online". [Athena]

Other economic factors affecting MC adoption in Nigeria is the exchange rate on the import and sale of foreign products and foreign investments in Nigerian based enterprise. This emerged as a new theme with respondents from Zeus, Hera, Hades, Vulcan and Athena stating that due to the volatility of the exchange rate, it has not only impacted their investment decisions to adopt MC technology but also impacted customer buying power for items sourced from abroad. With one respondent stating that when they started their MC platform, the dollar exchange rate was 130:1 and this encouraged shoppers onto the platform who could aspire to shop on their mobile and buy from retailers in the US and UK, however as at the time of interview, it was 350:1 and is currently at 411: 1 (Source: XE.com as at 4th July, 2021). He went on to confirm that this has

therefore made their products three times more expensive than when they started trading impacting their operations. Consumers have then resorted to shopping offline in the mall due to more competitive prices and access to international brands with significantly larger buying power.

Another respondent confirming the impact on foreign investment stating:

[...] you can imagine somebody bringing in, like \$2 million but by the time it's getting here and it's taken into Naira and it crashes down by almost like 40 to 60% of the business value" [Hera]

- ii. Partnership support: One of the big enablers to MC adoption is the level of partnerships and network collaboration by the retailers as part of their business model. This level of partnership comes in different forms (i) co-investment providing access to capital to invest in technology initiatives. For example, the view from one of respondents suggested that Hera suffered and eventually got sold to local investors because they did not have co-investment. Unlike Zeus that partnered with organisations such as Asa Masaad, MTN, Rocket Internet, AXA, Goldman Sachs, and provided access to capital. (ii) finance partnerships with the retail organisations enable access to financial resources for both the customers in the form of payment plans and instalment payments and finance for the sellers on the market place platforms. For example. Hermes has a payment option called 'Now later' which allows its customers to select to pay in regular monthly payments on their app. Similarly, Ceres has partnership with CREDPAL that provides credit checks and customer access to instalment payment and Zeus has partnered to offer a digital payment option called 'Zeus FLEX' to enable customers to buy high-end devices, like iPhones and MacBook Pros and pay in instalments. By partnering with finance companies, this increases organisations buying power and enhances the customer value. Likewise, on the seller side, it gives them access to greater finance to increase their variety of stock, boost returns, while enhancing the margins of the retailer (iii) partnership with logistic firms both local and international, as part of the business model is identified as a contributing factor to MC adoption across the entire value chain. Of the 13 cases, only one or two had their own logistics services and restricted to only within Lagos and surrounding cities; many reliant on 3rd party logistics services to meet their 5-7day delivery

timescales outside of Lagos. The level of reliability which is defined as “the ability to perform the promised service dependably and accurately” (Pitt et al., 1995, p. 177). is put to bear when fulfilling customers orders (iv.) Partnership with the network providers is important as they provide the level of coverage in both cities and rural areas across Nigeria. Respondents suggesting promotion launched via the networks to get customers to access their services cheaply from their mobile devices.

[...] you know MTN was one of our founding investors. So we worked with them to review a rate for the data session, so you use less data or like, we don't charge you for certain amount of data. When you use the Zeus app, its cheaper to use the app; surf with the app than to surf with the mobile web. [...] we would partner with MTN. [...] and you get a free sim when you buy a mobile device from Zeus, so you get MTN connections, you know, data connections. [Zeus]

(iv) Retail partnerships fostered by some organisations not considered as pure online retailers (e.g. Cerres and Bacchus). One major phone distributor to Zeus, describing the partnership they have with them by stating "bring your friends close, but your enemies closer". They enjoy special privileges and are not treated like other vendors:

[...] We have a different kind of relationship because they are willing to bend in some ways to us to reach some compromise because they know that we also give some value to them.

One retail-pharma organisations interviewed said:

[...] we have considered to partner with another online retail organization to use it as a platform in terms of selling medical products through that channel. [Venus]

Maintaining the integrity of their brand name was important to companies which might explain the reluctance to collaborate and enter into partnerships.

- iii. Awareness and education: the level of awareness among customers was found to affect MC adoption. (Rogers, 2003) attributed 'failed diffusion' to the lack of awareness; with knowledge and awareness as the first of the five stages of adoption process. Some respondents admitted that in

the beginning when EC came out in Nigeria, bigger players in the market such as the pure market place brands did a lot to promote “online” and build consumers’ trust. However, they admit that more needs to be done in terms of understanding the consumer journeys. Lack of education was highlighted by the head of retail at Venus. To increase customer adoption Zeus used ingenious means such as the adoption of J-Force, which is an army of individuals who are technologically savvy to sell their products to friends and family. This initiative proved successful even though it was expensive. Other organisations have tried to increase awareness through the use of blogs informing customers on how to stay safe online and use social media (SMN) such as Facebook, WhatsApp and Instagram, as a way of reaching customers. The perception held is that even the baby-boomer generation can operate a mobile device and access their SMN account:

[...] would say the 'world is going global' in as much as you have people that don't know how to transact on mobile or web. In as much as you have people that don't know how to, even those that cannot speak English, knows how to use WhatsApp” [Athena]

Another respondent suggesting that, the app should be able to cater for the main Nigerian languages as not being able to attend to customers in these main languages could impact business performance.

The findings highlighting the skills (level of education) of the ‘sellers’ on the market place was a challenge to process the orders with one respondent stating:

[...] huge portion of sellers that we can't onboard because there's a requirement to be able to read, to process orders etc. and ability to use the technology” [Zeus].

This suggests that inability to on-board sellers and preferred suppliers to their platform, reduces the level of variety and options that consumers have, and are missing out on what the respondent terms the “best price point” to source local products from the source to cut out the middle-man. Organisations will either have to invest more in training or look to simplify technology to enhance adoption.

iv. External infrastructure: specifically mobile network, electrical power, road traffic was a significant factor impacting MC adoption. Although Nigeria reduced right-of-way fees for laying fibre-optic cables by up to 95% enabling for more efficient and timelier rollout of 4G LTE with trials of 5G networks in some parts of Lagos and key states (GSMA, 2020), there are still issues with network coverage especially in the outskirts of the major towns and cities. Respondent from Artemis stating:

[...] One of the issues that we have generally in Nigeria is that we don't have the kind of internet services to support online commerce. Basically, what we face is that like the kind of internet services that our internet providers give is not as fast a technology as outside Nigeria. You do a transaction and it takes time before confirmation of the order and the customer does not know if that payment has gone through. The speed of internet is an issue even with the 4G LTE. You do a transaction and it takes time before it reaches us”.

Respondent from Bacchus also stated that one of the main issues is the network speed, suggesting that Nigerians pay a lot for “terrible internet”. Similarly, respondents from Zeus, Hera, Vulcan, Hestia and Apollo also suggested that the network is a major issue, confirming that the price of the data network is still very expensive when compared to other African countries. The cry is for the Telco to bring the prices down and improve the connection.

Another infrastructure barrier raised by a few of the respondents was the issue of power and the need to have a mobile device charged to transact. The erratic power supply in Nigerian as supported by Agwu and Murray (2015) when they explored the barriers to EC adoption by SMEs in Nigeria, means that customers have to adopt other means of charging their mobile device by having a power bank (which is another revenue stream for the electronics retailers) or put on the generators (causing noise and air pollution).

Respondents from Vulcan and Ares raised the incessant traffic as an opportunity to encourage customers to order electronically without risking travelling to the stores. However, poor road network could influence adoption with issues of being able to meet the logistics and electronic order fulfilment on time.

- v. Political factors: The political climate in Nigeria has an impact on MC with a respondent suggesting that due to the threat of “Boko Haram”³⁸, they could not expand their business to the North Eastern region of Nigeria. The inability to order certain items internationally for customers on its app due to restrictions imposed by the Nigerian government, was impacting customer experience and adoption. For example, Hermes stated that they used to order drones for customers but this was now banned by the government.
- vi. ‘Nigerian Factor’: otherwise known as the ‘Nigerian way’ is a term that is generally used to describe an “inelegant or improper way of doing things” (Omotoso, 2014) was mentioned by quite a few respondents. Further research suggests this to mean what is generally viewed as reprehensible is paradoxically accepted in the Nigerian context as effective and efficient (Sandu, et al., 2018, pp. 93 - 108). In other words, it is the tendency of believing that anything goes in Nigeria – whether good or bad! The concept is best explained through the voice of the respondents:

Speaking about short-term orientation and logistics:

[...] our challenge with the mobile commerce in terms of logistics, is the way Nigerians are, the way they behave when it comes to placing order online. Some of them will just place the order. You ask them, you call them, please I want to make the delivery, some of them will say ok, go ahead and deliver it, when you send your dispatch over there. Some of them will say, I don't feel like buying again. It has happened before; it has happened a few times before.

[...] In terms of logistics, Nigerians are very impatient, they are very, very impatient. Some, of them can place order, you know, they place order today, you promise them it takes three to five working days to deliver an item from here to Kaduna for example

³⁸ Boko Haram is a known terrorist group with extremist agenda, responsible for displacing over 2 million people and several killings.

[...] Some people are not patient enough. It's not going to come by air as we manage item by airline cargo and not freight. So, after a month they are asking you how far, has my car come and then when it gets to the port it's a different matter. Thieves would remove your side mirror, they will do this and that, you will have to fix it for the customer. So, we did not want to get into the business of bringing in cars as it is a bit too much work.

Speaking about trust:

[...], most Nigerians are curious and actually prefer to test what they want, you understand, and they test it in the shop (or if you deliver), and they make their purchase" [Ceres].

[...] We know that this is a general problem in Nigeria. We are all Nigerians, so we know that people have TRUST issues" [Athena].

Speaking about MC risks and scams:

[...] One of the challenges with online mobile commerce majorly is, let me say, Nigerians, "Nigeria" in quote... EC is lucrative, irrespective of what we think, but the thing there is, like I was saying, "Nigerians", they are kind of people that are kind of gullible people. there are scams they fall for [...]

[...] I think that is the only challenges we are having in Nigeria and in our business in Nigeria. I am not only talking about my business here, but it is affecting all businesses in Nigeria because of there are a lot of "mode" or what will I call it scams in Nigeria.

A respondent from Ceres suggests that to reduce the potential of scans, Nigerians should use their common sense and if we can stop our greed, stating:

"[...] Its mostly greed where people want to get things at ridiculous prices and then you want to get more for less, and you know, it affects everything".

6.3.4.4 Other factors

- i. Trust: one of the more frequently mentioned factors identified was the issue of trust with an agent for Zeus stating that some of her customers were not familiar with online trading are not keen to pay by debit or credit card. Respondents from Ceres suggested that Nigerians were paranoid.

Another respondent suggested that Nigerians were “sceptical” and wanted to see the items before parting with their cash. Another suggesting that customers will not trust the organisation to keep their money with them for a long time. The CEO of Vulcan and respondent from Athena also stating that there is a “trust issue in Nigeria” and “we are all Nigerians, so we know that people have trust issues” respectively, in line with the Nigerian factor explained above underlining the lack of trust in online processes when compared to US or UK. It was difficult for customers to have certainty that what they ordered, is what will be delivered and even more difficult to get your money back. This notion was echoed by Zeus rep. who stated that one of the biggest factors that impacted adoption of not just MC but EC in general, when they first entered the market was “the trust issue” as Nigerians were just getting into the card payment and customers felt it very risky to put in their card details online. A respondent from Hera also stated: Trust is always an issue, in Nigeria especially with the issue of fakes and counterfeit goods; meaning it was important for retail organisations to protect their reputation as word goes around quickly.

The PoD option was the generally preferred method to transact. So, customers will order either via their mobile enabled website or via the app and they would be surprised when the item was delivered to their door step. It was suggested that this helped build the trust and reputation of these retail organisations overtime. Engaging agents who are known to the shoppers, demystify the online shopping experience and build a rapport with the individuals as these agents can share their experiences and shop on their behalf to build that trust. Agents use their mobile device to take pictures of the orders and send to their customers which showing that the payment has been confirmed thus providing the individual with assurance. Another avenue that organisations have sought to improve the consumer trust is through their brand with respondents suggesting that it makes it easier for customers to trust the company if they see their brand offline or read an article or blog from the company. Through brand identity customers can then relate to the brand both offline and online. One respondent suggested that customers do not trust SME organisations but trust larger organisations but there were complaints from customers who had patronised even

the large organisations. A respondent at Hestia stated that one of their key values was around the trust it builds with its customers; suggesting that their company is “too big to hide” and “we cannot run away”.

- ii. Sensory enabled experience such as touch and feel is one of the most identified factors impacting consumer MC adoption behaviour especially for fashion apparels and various stock keeping Units (SKUs) product types and categories. The sentiment suggests that organisations like Zeus and Athena that traded in fashion had a lot of work to do in that aspect. Whereas, it was easier for mobile phones and electronics retail sector, as their products when viewed electronically; its features cannot be manipulated further.

[...] it wasn't what we saw on the picture. It was not what we had in mind, we did not really know whether it was polyester or cotton. We thought it was a cotton material but at the end of the day it was a polyester”. [Zeus Agent]

[...] the picture is not reflective of what product is actually being delivered? So, the picture quality to the item quality is not the same or when you look at the picture to what was delivered, the product or material is not the same quality as expected”. [Hera]

[...] that's some of the challenges we struggle with. [...] Sometimes the company will put a very nice product. The picture will be so sharp and fine. However, when you get the item, you will be like - What is this? This is not what you ordered”. [Ceres]

[...] getting what is ordered as seen is always a problem. [...] You see a picture of something you like and what they bring for you is totally different. It looks like what you ordered for, but it looks like something from 'Aba'³⁹. [Hermes]

³⁹ Aba is a manufacturing town in Nigeria and “Aba-made” is used to describe Nigerian made products, often considered to be of ‘low’ quality.

This raises the issue of fake goods or counterfeit products and ability for the customer to identify this prior to purchase. Speaking to most respondents, they encourage the customer to report poor quality to the retailers. For example, one states:

[...] whenever you get such items that is not what you saw online or mobile then we are recommended to report it". [Apollo]

One of the respondents from Zeus admitted that the potential to buy grey products was a serious issue for them to manage and police but some of the measures they had taken to combat it included: (i) marketplace rules imposing penalties for stocking fake goods was more than the value of the good itself (ii) delisting vendors from the platform if they were repeat offenders (iii) costly quality control (QC) process at the point of fulfilment in the delivery cycle where the vendors actually drop off their items at a delivery hub for inspection prior to dispatch to the customer.

The findings reveal that returning these products could sometimes be a challenge especially where the products are globally sourced (See section 6.3.4.2 Organisational factors).

Organisations fear to be associated with selling "fake goods" as this could damage its reputation. Athena, Vulcan and Venus voiced those customers will continue to patronise the organisation if they are known for quality whether online or in store. To combat the issue of fake or grey market products, especially for the market place organisations, one respondent suggested that the firm had moved up the value chain, such that they will have a greater proportion of real genuine products directly from the distributor or the manufacturer at the best price point. Similarly, for the retail pharma organisations and organisations selling cosmetic products, the findings suggest that they have had to stock only genuine drugs with a shelf life of at least over a year. These retailers also try to ensure that the products have the right Federal government approved NAFDAC (National Agency for Food and Drug Administration and Control) number. NAFDAC is a federal agency under the Federal Ministry of Health that is responsible for regulating and controlling the manufacture, importation, exportation, advertisement, distribution, sale and use of food, drugs, cosmetics, medical devices, chemicals and packaged water in Nigeria.

iii. Perceived Risk: for customers that input their card details online, the perception was this felt very risky especially in Nigeria and therefore negatively impacted MC adoption. So, to enter the market organisations like Zeus and Hera initially had to go with payment on delivery. The respondent from Athena suggested that to eradicate customer worries, build trust and remove any upfront financial commitment while shopping online, it offered its customers the ability to try its service and product beforehand and if the customer was not satisfied with the product, they were free to return it (at no cost to the customer); if, however, they liked it, they could pay on delivery. Athena admitted that by reducing the customer risk, it had helped them gain the trust of customers and build their business. Athena saw this as one of their main differentiators. Reducing customer financial risk was also echoed by a respondent from Venus, as they too had to offer payment on delivery to customers, but offered greater discounts and incentives to customers that pre-paid online. Artemis suggested that Nigeria was willing to adopt MC, however one obstacle is that customers are scared generally when it comes to transacting online and making payments. The lack of network stability exacerbates these transactional risks with the example provided of a customer making an online money transfer but entertains fear because the transaction details are not received promptly. Another transaction risk identified by respondent from Hermes, a pure app player was internal fraud by employee who in the process to support the customers who are not technologically savvy and request the staff to place the order on their behalf, only to inform the customer of a different and higher rate to what was displayed within the app and therefore pocket any exchange rate difference for themselves. The respondent suggesting that overtime, this has affected their reputation and they have had to invest in their recruitment proposition to ensure they hire honest agents and staff as well as try to build internal controls.

The fear of fraud, scams (and being scammed) was raised by a high number of respondents with Zeus suggesting that their agents played an important role convincing customer to adopt pre-paid digital payments. Similarly, respondents from Ceres and Bacchus suggested that they also entertain fear of being scammed when people placed false orders. When they went to deliver the

product and tried to call the customer, they received no response or in some cases, the delivery drivers could not locate the delivery address. To counter this, Ceres ensures that customers pay upfront at least say 10% of the total price of the phone. For example, as part of their online checkout process, if a customer orders a phone that is worth N100,000 expecting delivery to Port Harcourt, the customer will pay N10,000 and N3,500 delivery and when they turn up with the phone, if the customer likes it, they will be expected to pay the outstanding N90,000. If on the other hand, the customer changes their mind, they would refund the 10% paid upfront but not refund the delivery charge. Fraudulent orders and delivery challenges have been headlined by major newspaper in Nigeria, when a delivery agent attached to an online marketing store, was killed in a house in Port Harcourt, Rivers State as he was delivering two iPhones to some customers, who had raised scrupulous orders (Akasike & Folarin, 2017), highlighting the risk faced by organisations and their staff in fulfilling PoD orders.

Another risk identified in the findings were organisations fear of its mobile-enabled website being cloned. The respondent cited examples of what he termed as “Yahoo boys” (referring to the business of scamming people online), who had cloned Zeus site and created an online link advertising the companies Black Friday promotions; selling iPhones for ridiculously low prices of N50,000 naira, others for N30,000. Scammers creating fake locations of Ceres (and competitors) site using google maps. The respondent confirmed that some of its branch details on Google maps were not created by them and one of its customers had recently fallen for this scam and contacted the fake number linked to their branch address online. In thinking the customer was engaging the staff of the actual branch, the individuals on the other line offered a Samsung Note at a ridiculous ‘one day only’ discount of N50,000 (usually three times that price), which the customer was so excited and ended up paying to a personal bank account. The customer now came to the Ceres branch to collect the item but was disappointed when she realised it was a scam. To resolve this, they had to report the incident to Google on the fake branches and they have taken steps to invest in technology to constantly monitor and report such scams, raise awareness of them by

encouraging users to resist very enticing offers and transacting through private bank accounts payments. The huge impact of all these scams often results in reputational damage, additional digital costs and less MC adoption by consumers.

iv. Privacy and security were identified as well as the need to protect customer card details. A Bacchus respondent stating the importance of security and having to build defences to protect their website, mobile apps and customer card details from being hacked. Similarly, Ceres confirmed that through their back-end security system, they try to prevent unscrupulous individuals from using stolen credit cards to make payments online. Hestia suggested that because of lack of security, many customers don't want to go shopping online with his perception that Nigerian people prefer to be reserved with their name and personal information. Similarly, Hera and Zeus suggesting that security of their payment platform was paramount with an agent for Zeus expressing her experience on the payment platform as being safe and very ok Security of data was highlighted by Venus who purchased the mobile applications for their agents, one of the first questions was - how about if I lose my phone? Consequently, they had to implement daily back-ups to ensure all transactions are secure in the event that the phones are stolen or lost. Athena stated that over the years, they have had challenges with platform security, where for 2 - 3 days the site has been down, and they would work night and day to ensure that it was back up. They have had to improve their online platform adopting Magento 2.0 (which is an open-source platform) and they work with the engineers to ensure that their site is safe at all times. Ares ensured the security of their platform with SSL Certificates in place.

v. Customer experience: is one of the factors identified that has an impact on adoption. Artemis suggested that their website can be further upgraded to have better features and its web experience improved for its customers. Hermes respondent suggested that they have had to improve their mobile application making it more user-friendly through the customer journey. Customers go through a navigation guide on their frequently asked questions page to understand how to navigate their site and partner sites. He admitted that to encourage more customers to

use their application, they worked hard on it to make it less cumbersome. Similarly, the respondent from Bacchus stated that their organisation understands the importance of user experience so, they monitor visitors on their website to see where their customer journey stops.

For example:

- *Does the customer log into the site and exit?*
- *Does the customer stop after checking prices?*
- *Does the customer try to buy and they are having issues with the payment or checkout process?*

Having a good website was not the end of the user experience, but ensuring stock availability, and providing customers with variety. Athena had to suspend their mobile application due to the non-responsiveness of the app impacting user experience, with the respondent expressing the operability of the app: "Ok app, I have placed my order, but I am trying to click confirm and it's still not going through but going round and round".

The IT manager of Ares stated that whenever the organisation looks to adopt a mobile application, they need to make sure the mobile app is easy and gives great customer experience. Ceres to improve their customer experience, have had to make their online shopping experience as real. For example, they have recently integrated ordering on WhatsApp and from time to time, run blogs teaching customers how to avoid scammers. The importance of the user experience was also highlighted by Athena on making MC more accessible for less technologically savvy customers, as it introduced WhatsApp contact on their site and encourages customers to send in messages that then subsequently act upon. Athena also provides a list of FAQs that explain how to navigate the site for example "how do I register", "How do I place an order?"

Zeus suggested that at every point in the value chain, there was the opportunity for the customers to rate their experience to understand where they could improve. Athena's mobile-enabled platform enabled opportunities to interact on WhatsApp bearing resemblance to this unique approach to customer involvement. None of the retailers discussed providing a seamless end-to-

end customer journey across their offline and online channels (omnichannel) by unifying their sales and marketing channels.

vi. Perceived ease of use is one of the original TAM constructs (Davis, 1989) that examines the extent to which organisations believe that shopping online is “free of effort”. PEOU was found to have an influence on MC adoption by organisations:

“We need a technology that's easy to use and the back-end communication needs to be easily integrated with our products on offer. [...] it's not hard to understand, it's very simple and it's mobile-friendly also”. [Ares]

Respondents from both Athena and Hermes suggested that they have had to update their sites and mobile apps respectively to make improvements over time admitting that the more they upgrade their website, the more it's easy for their customers to access their service. Athena's respondent further mentioned that they have had to redesign their website entirely, due to user complaints, just to ensure that their customers' have easy access. Other respondent indicated the importance of website design as an indicator of its legitimacy.

“When you come our site, you will see that's it's actually a company site and it's different from all of these fake sites out there. [...] if I go to a site, number one indicator of whether that site is real, or scam, is the design of the site” [Ceres].

The research ran operability test to assess the level of fit that the mobile enabled sites can perform MC related tasks using Google's free application - <https://search.google.com/test/mobile-friendly> [accessed April 2020 and October 2020]. to corroborate the level of mobile-friendliness and easy to use of the case-study organisations sites, with results detailed in Table 6-3 below.

Table 6-3: Case study organisations mobile friendliness assessment

Organisation	Mobile friendliness assessment
Zeus	<ul style="list-style-type: none"> • Page is mobile friendly with 7 loading issues • Average mobile speed of 1.4sec on 4G network (same in month) • Suggested recommendations <ul style="list-style-type: none"> ○ Avoid excessive DOM size ○ Reduce JavaScript execution time ○ serve images in Nex-Gen format ○ Serve static assets with an efficient cache policy

Organisation	Mobile friendliness assessment
Hera	<ul style="list-style-type: none"> • Mobile friendly with 13 loading issues • Slow mobile speed of 4.4sec on 4G network (slowing down by 0.5sec in month) • Suggested recommendations: <ul style="list-style-type: none"> ○ Ensure text remains visible during web font load ○ Eliminate render blocking resource ○ Properly sized image ○ Defer offscreen images
Athena	<ul style="list-style-type: none"> • Mobile friendly with 75 loading issues • Slow mobile speed of 4.4sec on 4G network (slowing down by 0.5sec in month) • Suggested recommendations: <ul style="list-style-type: none"> ○ Eliminate render blocking resource ○ Avoid excessive DOM size ○ Properly sized image ○ Efficiently encode images
Hestia	<ul style="list-style-type: none"> • Page is mobile friendly with 20 pages resources couldn't be loaded • Slow mobile page speed is 20.2 seconds on a 4G Connection • Suggested recommendations <ul style="list-style-type: none"> ○ Load site instantly in less than 1 sec with or without network connection ○ Pre-connect to required origins ○ Reduce JavaScript execution time ○ Eliminate render blocking resources ○ Defer unused CSS
Ares	<ul style="list-style-type: none"> • Page is mobile friendly with 11 pages could not be loaded • Slow mobile speed of 5sec on 4G network (same in month) • Suggested recommendations <ul style="list-style-type: none"> ○ Serve image in next gen format ○ Avoid excessive DOM size ○ Load site instantly ○ Ensure text remains visible during web font load ○ Reduce JavaScript execution time ○ Defer unused CSS
Venus	<ul style="list-style-type: none"> • Page is not mobile-friendly (and difficult to use on mobile device) <ul style="list-style-type: none"> ○ Clickable content too close together ○ Content wider than screen ○ with 17 loading issues • Slow mobile speed of 16.3sec on 4G network (same in month) <p>Re-tested on 25/10/20 on new website</p> <ul style="list-style-type: none"> • Page is mobile friendly with 2page resources couldn't be loaded • Slow mobile page speed is 4.3 seconds on a 4G connection • Suggested recommendations <ul style="list-style-type: none"> ○ Load site instantly ○ Serve image in next gen format ○ Defer unused CSS ○ Efficiently encode images ○ Avoid enormous network payloads ○ Make JavaScript and CSS external ○ Compress components with gzip

Organisation	Mobile friendliness assessment
	<ul style="list-style-type: none"> ○ Add Expires headers
Apollo	<ul style="list-style-type: none"> ● Page cannot be reached – for mobile-friendly test (i.e., blocked by robots) ● Slow mobile page speed is 4.3 seconds on a 4G connection ● Suggested recommendations <ul style="list-style-type: none"> ○ Load site instantly ○ Serve static assets with efficient cache policy ○ Serve image in next gen format ○ Ensure the text remains visible during web font load ○ Pre-connect to required origins
Hermes	<ul style="list-style-type: none"> ● Mobile friendly with 10 loading issues ● Slow mobile speed of 3.7sec on 4G network (same in month) ● Suggested recommendations <ul style="list-style-type: none"> ○ Minify java scripts (lower bandwidth cost) ○ Serve static assets with an efficient cache policy ○ Reduce JavaScript execution time ○ Server images in next-gen formats
Ceres	<ul style="list-style-type: none"> ● Mobile friendly with 194 loading issues ● Slow mobile speed of 3.8sec on 4G network (same in month) ● Suggested recommendations <ul style="list-style-type: none"> ○ Defer unused CSS ○ Serve static assets with an efficient catch policy ○ Avoid enormous network payloads ○ Pre-connect to required origins
Artemis	<ul style="list-style-type: none"> ● Mobile friendly with 7 loading issues ● Slow mobile speed of 13.2sec on 4G network (same in month) ● Suggested recommendations <ul style="list-style-type: none"> ○ Enable Text compression ○ Reduce JavaScript execution time ○ Serve static assets with an efficient cache policy ○ 4. Efficiently encode images
Bacchus	<ul style="list-style-type: none"> ● Page is mobile-friendly with 16-page resources couldn't be loaded ● Average mobile page speed is 2.2 seconds on a 4G connection ● Suggested recommendations <ul style="list-style-type: none"> ○ Load site instantly ○ Avoid enormous network payloads ○ Pre-connect to required origins ○ Efficiently encode images ○ Properly size images
Vulcan	<ul style="list-style-type: none"> ● Page is mobile-friendly with no loading issues ● Slow mobile page speed is 6.7 seconds on a 4G connection ● Suggested recommendations <ul style="list-style-type: none"> ○ Load site instantly ○ Ensure text remains visible during web font load ○ Reduce JavaScript execution time ○ Eliminate render blocking resources ○ Defer unused CSS
Hades	Not Applicable – Company no longer trading

Although all sites result show to be mobile-friendly and therefore easy to use on a mobile device, the table revealed that most sites on average speed were slow despite a 4G network. With slow sites loading in over 2.5sec as per google test tool. When compared to Amazon, the leading marketplace that has a mobile site speed is 1.4 seconds in UK on a 4G connection revealing fast 4G connectivity. The impact of speed on average monthly visits, conversion rates and average order value on organisation performance is further discussed in section 6.3.6.2 Organisation performance.

- vii. Perceived usefulness (PU) one of the original TAM constructs (Davis, 1989), was not a prominent area of consideration for mobile adoption. It examines the extent to which using a mobile application will “enhance the job performance” of the customers. Although referenced by respondents from two of the case study organisations, comments suggests that consumers preference was for a mobile app to spot fake goods during purchase online. A respondent of Hermes suggested that in using its mobile app, customers unfortunately could not access all its 250+ partner stores (except on a laptop on Google chrome) and orders over a certain size had to be managed via an offline special form process, thus defeating the usefulness of the application.

6.3.5. Value co-creation and customer involvement in MC adoption

Studies suggest that innovation and the introduction of new technology can increase an organisation’s growth and competitive advantage. Based on the service-dominant logic of marketing (Vargo & Lusch, 2004), the customer is always a co-creator of value. Market competence requires understanding the customers' needs and wants (Lagrosen, 2001, 2005). Customer co-creation of value through customer involvement should be considered at every stage of product or service development. Managers and customers alike, should be encouraged to consider innovative co-development of new MC offerings.

Customer involvement is one of the key constructs that brings the customer and the organisation together. To effectively address the research question, the research seeks to understand the extent

to which customer involvement influences the interaction between the organisation and customer behaviour using MC through customer interaction, communication, feedback, personalization and managing complaints.

6.3.5.1 Customer interaction

In the B2C context, none of the organisations apart from Hades enabled in-app direct sales interaction between the customer and vendor. The customer could order products or service such as food, while interacting with the vendor directly to either deliver at an additional fee or arrange pick up. The lack of interaction was suggested as impacting MC adoption:

“Direct interactions that’s what we don't have in Zeus or Hera because customers a lot of time, don’t see the vendor, they only see the delivery representative [...] [Zeus]

A model for early customer involvement in product development is the voice of the customer (VoC) (Cooper et al., 2002; Griffin and Hauser, 1993; Matzler and Hinterhuber, 1998; Shen et al., 2001). VoC is used for collecting information in order for firms to make better decisions (Aguwa et al., 2012). Few of the retail organisations admitted running any customer research using surveys to learn and innovate through customer interaction with respondent stating:

“By the time you do surveys, they respond in different ways and from there that guides the decisions on what to be done. So, most of the things we've done as improvement are usually not the ones you see Amazon and Alibaba do, but are mostly the ones that a customer comes up with as request, or complaints at a time or the other” [Zeus]

As part of introducing a delivery application respondent from Ares stated their intention to test the application with its customers: “that is the final stage. to run trials with customers. We have not reached the final stage yet”. [Ares]

“Yeah, there is usually R&D but usually in the way of survey. There's always like a market survey, you know, through reviews of customer feedback [...] We are always having a pilot. The feedback of the

pilot phase will determine the next phase. We determine whether we tweak that software, or we adapt it and actually go back to the drawing board.” [Hera]

Customer interaction reveal next course of action for organisations in terms of sales, marketing or competitive strategy. Findings reveal elements of passive interaction in which interaction was one way from the customer to the organisation with respondents stating:

[...] think almost every EC company does this. We use Google Analytics to monitor customers online [...] because it's very good to understand what's happening. [...] or online it's easier for them to track, so for a particular product, you can check how many times it was hit, like how many times it was viewed and how many you sold, so if you think that Snaira brings a customer to my website and 2,000 people viewed. [...] Ares

“[...] technology is super important, it helps us understand the behaviour of our customers, it helps us deliver messages, we need to deliver to them, it helps us keep them informed. it also helps us with our back-end processes with all the analysis so we can know who to target. I know which customers are buying which phones. [Bacchus]

Results revealed organisations interact and share information (such as deals or promotions, spreading awareness of how to spot fake products or fake sites, surveys etc.) through its social media channels. One respondent stating that on the group WhatsApp page, its customers or agents could identify ways to validate product quality collaboratively and present shared experiences of their customer journey:

“[...] we send them messages; we release messages on our handles - Don't pay to any personal account” [Ceres]

“[...] with every interaction, people can leave feedback. So, we have NPS⁴⁰ monitor after Promoter Score on a weekly basis. So that gives us an idea of how happy our customers are. We measure NPS, it gives us an idea of how happy customers are, how likely they are to recommend us” [Zeus].

⁴⁰ NPS - Net Promoter Score

Findings indicate interactions initiated via MC channel, was more passive (one-way) with no evidence to suggest a cohesion between and across B2C retail channels.

6.3.5.2 Communication (knowledge-sharing)

Communication is a key part of customer engagement with respondents referencing communication channels:

“[...] the main mobile application for interacting with my customers is on WhatsApp or Facebook or social media. (Zeus).

“We have a live chat, we have Facebook, we have Instagram, we have WhatsApp. So, we use all of these platforms to reach and service our customers. We also give a call through or call back if needed. [Athena]

“[...] as part of creating awareness, I am going to use the social media [...] it's going to have somebody like Instagram (IG) influencers [...] to put it on their page” [Vulcan]

The ubiquitous nature of mobile has fostered communication between retail organisations and customers. Also, from the perspective of retail organisations, the ability to communicate through messaging when consumers are making purchase decisions is often highlighted:

“Anywhere the reps are, they log in. Interaction between them and the client is entered into our server [...] it goes direct to the appropriate quarters [...] to take appropriate actions immediately” [Venus]

“Immediately a message will be sent to you that such an item has been purchased, because everything will be paid in your name, your phone number, your address”. [Zeus]

“They believe in Mobile commerce, and they believe that communication is key to business [Hestia]

Live communication between retailer and customers positively influences MC adoption intentions. In various contexts, this has been used to send patient prescription reminders or communications between agents, reps and the customer or interaction from the organisation offices to its customers:

“[...] you can order from WhatsApp, [...] our social media handles, [...] you can even chat us up, you can even chat to us on Facebook, send us messages on Facebook. These are the different channels that we use to communicate to our mobile phone users and customers and all these avenues translate into sales” [Ceres].

“We send messages to hospitals, that these items (drugs that are approaching less than 1 year expiry shelf life) are available at a reduced amount [...] We would like to send customers reminders [Venus]

[...] major percentage of people that receive the information are going to receive it on their mobile phones [...] we can get your phone number, email address and the rest, so we could always send you messages once in a while” [Bacchus]

Effective communication aims to drive certainty and provide customers with confidence as supported by Zhang, et al. (2018). Effective communication through the different mobile channels can positively co-create value with the customer having a feeling of satisfaction, enjoyment as well as increased sales revenue for the organisation and communication is also seen as a factor impacting MC adoption. Backed by respondents quoted as saying:

“if you send out pictures or send out the link and the people finish reading it, they are like wow, this thing is available and affordable, so let me try it.” [Zeus agent]

“I finished doing everything, took the screen shots, sent her; she sent me the money, and it was delivered. She is enjoying it [...] she was so happy” [Zeus]

“[...] we also try to tell the customer to communicate with us. We like the customers to chat with us as well. When they chat with us, they know we are real people and will deliver the item. [Ceres]

“[...] communication in Nigeria is growing but not like what you get in the Western world” [Hestia]

Conversely, our findings revealed that lack of effective communication mechanism can negatively impact customer interaction with the organisation and result in value co-destruction.

“[...] this issue of fakes and things like that, you know that reputation goes around people talk about it and stuff. We try to communicate our policy around that and then what we do to prevent fakes [...] we try to communicate things around that, but that definitely, impacts profits [Zeus manager]

[...] but sometimes the customer finds it difficult to get to us. Maybe because of jam-packed line or network problems and all that. But I think is something we are looking forward in this year to resolve [Hestia]

[...] bad news flows faster and stays in peoples mind more. You can hear people talking about oh there are fakes in Zeus and there is news about it on social media, but you will not hear about what we've done to counteract that. [Zeus Manager].

6.3.5.3 Feedback

Soliciting feedback as part of an organisations policy and procedures through mobile-enabled technology can enhance the interaction with customers and co-create value. Most of the organisations under study have a level of customer service or feedback mechanisms albeit manually to measure customer satisfaction with its product or service. Reflected by the sentiments below:

“When you look at the rating or how many people have got feedback, I can use it to tell how good that product or supplier is” [Zeus]

“In our local stores we have. If you went to Ilupeju you have the feedback system [...] on the site, you can make comments” [Ares]

“We have two people in the office as part of our customer service and they would call some of our customers and ask them, have they been satisfied with the service they receive” [Bacchus]

we have different mechanisms to get customer feedback, so via customer services or via the feedback forms. [...] we send out at every order; you can even rate your delivery driver as well. [...] at every different point in the value chain, rate your experience with the customer services agent if you call them, rate your experience on the order, rate products that you received as well. So, there is feedback on the site, that talks about that specific product” [Zeus].

Sometimes, in as much as we are an online platform, we do customer open days [...] Customers can call us to give us feedback. We do follow up with customers and ask for feedback but its manual or over the phone. [...] We also take our time, but we are still working on IT and IT platform as regards feedback from customers. [Athena]

The lack of well-integrated feedback loop supported by technology is further strengthened through observation of the organisations mobile enabled site. This revealed that most of the sites had no electronic feedback form integrated into their site. Hermes allows customers to rate and review their experience on its app, however with very limited views, it shows a lack of integration with the rest of the MC application. Observation shows only Zeus as having a customer review, product and vendor ratings section on its page. It is not conclusive the extent to which customers view how their feedback solicitation demonstrates that the organisation cares about them and values their inputs. Similarly, there was little evidence of how feedback was acted upon and the measures organisations used to communicate back to the customers which creates an opportunity for further study. In conjunction with findings from the quantitative studies, the research aims to explore this further.

6.3.5.4 Personalization

Findings did not reveal any element of personalisation during the course of customer interaction. This loss of opportunities for relationship building is an area of for further investigation.

6.3.5.5 Complaints

Some of the feedback received by customers comes in the form of complaints. The impact of organisations policies and procedures in response to customers complaints as discussed in section 6.3.4.2 Organisational factors positively influences how customers co-create or co-destroy MC value. There were two types of complaints identified in the study (i) usage of the MC technology (ii) online customer journey interactions.

Findings reveal that organisations tend to respond to complaints relating to its mobile application service. For example, where a retailer introduced a mobile application but had to put it on hold due to non-responsive and non-user-friendly complaints raised by its customers. Organisations acted upon such complaints by implementing some form of system improvements. Other comments include:

“Sometimes what triggers some of these IT developments is customer complaints. The customer lodges a complaint to the customer experience team” [Hera & Zeus].

“[...] so far, helping to resolve the customers complaints in the right manner has helped and has kept us in business. [...] most times people were complaining - I can't seem to complete my purchase. [...] so, from now, we have had to suspend the app. [...] We have had to change the face of our website entirely, as a result of complaints and just to ensure that our customer have easy access to our website”.

[Athena]

Similar complaints expressed by respondents relate to the customer journey. As mobile transactions are performed electronically with minimal personal contact, the expectation is that customers receive the service end-to-end from raising an enquiry, placing an order, making payment, product delivery and after sales service. One of the main causes of customer complaints identified in the study is as a result of products not matching the description seen on the mobile device, when delivered. Also “stock-outs” where the customer buys the item (as listed) but is later informed that the item is out of stock. Complaints arise also where a customer changes their mind and demands a refund. For example, customer raising complaints around cost of delivery charge, especially for products shipped

internationally; not receiving full refunds The interaction between the customer and the organisation in resolving such complaints could either create or destroy value as expressed by respondents:

[...] and you have a stock out, the customer gets really upset. That's the biggest cause of detraction and that's kind of a driver of us introducing sanctions" [Zeus].

"Some of them complain, but if you look at it, it's still their fault. They are the ones that made the mistake to begin with [...] some customers will go all the way to use social media to make a report. Some will even send email, write your name and everything. So, when we see cases like this, we try as much as possible, to correct the staff". [Bacchus]

"I called the regional manager and complained. Some people I told on WhatsApp group said this is not really allowed and not proper (item thought to be cotton was polyester), Zeus should find a way of returning it and refunding me. She said we can only return it if there is a damage or something of a fault" [Zeus agent].

The extent to which complaints are acted on, how the customers are notified and the timeframe for this remains to be seen? Similar to the feedback loop, this creates opportunity for further research.

6.3.6. MC value outcomes

One of the objectives of the research, was to validate the value outcomes of MC usage on: (i) customer value and (ii) organisation performance. Any new themes to extend the value outcome within the concept of MC technology adoption and literature is also explored.

As per the literature, it takes years for technology projects to translate into organisation success (Mathauer & Hofmann, 2019), to see if such have been able to create customer value, and enhance its organisation performance, we examine only case study organisations that have implemented MC technology.

6.3.6.1 Customer value outcomes

The results proved important in validating the level of customer satisfaction, customer value and word-of mouth post MC adoption outcomes experienced as part of the customer journey, as expressed by the case-study organisations.

Some of the MC enabled benefits that have been found to deliver customer value include:

- Convenience
- Global reach
- Customer incentives
- Ubiquity
- Time savings

Customer satisfaction was a value outcome for customers that accepted retailers MC applications either directly or via an agent. For example, using an app as part of the ordering process:

[...] I finished doing everything, took the screen shots, sent her; she sent me the money, and it was delivered. She is enjoying it. Her own did not even take up to three days and it was delivered, and she was so happy" [Zeus agent]

"When Hermes started, it blossomed: people welcome the idea, people loved the fact that they could actually buy items from source on their mobile device" [Hermes]

For customers that pay online, findings reveal that it was important to ensure that items were delivered on time as this impacts trust and customer satisfaction:

[...] you have to make effort to satisfy the customer. The maximum is within 2 days, you might place an order and pay money online, and the goods is not available. We need to make effort to meet up and make every effort to satisfy the customer [Venus]

Common to most organisations in the study, is that customers are considered key to their success; either referenced in their mission and vision or as identified from interviews with respondents. One

of the ways organisations seek to give value to customers is through the experience they provide. Through partnership and collaboration, they are able to provide customers with incentives such as mobile-app only discounts, access to cheaper mobile data and finance incentives to give more value to customers. The variety and amount of mobile-enabled offering could be attributed to enhancing customer satisfaction:

[...] But so far, we have been standing and for us to still be here today is a testament, I think we are meeting our customers' needs above all. [Athena]

Even when the customer has issues either with the delivery, logistics, item procured, to keep its customers happy one offers customers a discount on their next online purchase, stating *"we value our customers"*.

MC has had a positive effect on not only customer shopping behaviour but also on the organisation performance as discussed below with respondents from Athena reflecting on how they managed to increase their customer base even with the pure marketplace players through word-of-mouth referrals. This is mirrored by comments from the agent from Zeus who stated that most of her new and existing customers come through referrals, broadcast directly or indirectly via WhatsApp.

However, the impact of negative publicity arising from substandard service, poor delivery management, stock-outs and fake goods could negatively impact customer MC adoption and organisation performance, therefore should not be underestimated:

[...] The other thing I would say is trust is always an issue, you know. So, this issue of fakes and things like that, you know that reputation goes around people talk about it and stuff. [...] So, we try to communicate things around that, but that definitely, impacts profits and all. You understand, because bad news flows faster and stays in peoples mind more. You can hear people talking about oh there are fakes in Zeus and there is news about it on social media, but you will not hear about what we've done to counteract that" [Zeus]

6.3.6.2 Organisation performance

In addition to the customer benefits specified above, other MC enabled benefits that sometimes realised in delivering organisation performance includes:

- Reduced marketing cost
- New business model (i.e., Omni-channel sales and marketing)

With organisations like Zeus, Hera and Hermes adopting mobile applications, when compared to mobile-enabled web purchases, the conversion rates are higher on the mobile application with one of the respondents attributing this to their ability to utilise push notifications functionality and thereby gain customers in a cost-effective manner. Bacchus, Ceres and Athena although they don't have mobile applications, they too send out SMS or MMS messaging to their customers on a regular basis as an attractive form of reducing marketing costs, whilst avoiding other advertising strategies like TV, radio or banner advertisement.

“At first, I think in the first, second and third year, we were trying to get stickers on taxi drivers' cars to create awareness [...] a branded sticker; so, passengers get to see our phone number, web address and how they can contact us on social media. But over time it was not really doing so much for us in terms of return, so we just had to scrap that”. [Athena]

One is able to track their sales to marketing ratio more effectively for mobile-enabled online purchases. This gives the organisation the ability to manage and direct marketing effort and control the 4Ps (Price, Place, Product, Promotion):

“[...] we have a particular amount of money that we think should bring a number of sales. We budget for every phone we sell, the marketing money I want to spend for every phone is four naira. For offline it is more difficult to monitor and to actually manage [...] but for online it's easier to track, so for a particular product, you can check how many times it was hit, like how many times it was viewed and how many you sold”. [Ceres]

Another is able to monitor the impact of their digital marketing and choose to deliberately reduce the marketing cost because of a lack of capacity to cope with new customers and order demands:

“I can only say that the more we push out our adverts, that determines the number of sales we get [...] So, a lot of times if we do not push adverts, it can be very intentional probably we have so many orders to fulfil [...] currently, we have so much orders at hand and we decided to just take a "chill" like oh let's not push adverts. [...] So, times like this we are very busy, because if we decided to push adverts online, the sales that comes in, we might not be able to manage the whole lot, there could be mix ups or mistakes and all of that. So, we try to be careful.” [Athena]

MC has brought about new business models and multi-channels for organisations to engage their customers. Athena has been able to expand its operations by opening up a new offline store in Port Harcourt from its success online with the respondent stating that customers in seeing an item on its website, are now able to go to their offline store and check and test the item in store. This feeds into the trust and curiosity issues faced by Nigerians in adopting MC, as they can search for products and then test in store before they make a purchase. Athena confirms that customers can contact them on the phone or via WhatsApp to place orders on their behalf for delivery in the offline store. Similarly, another organisation has a Customer Service Centre (CSC) where they sell returned stock, while a marketplace retailer trades both offline and online:

“...instead of having that item as a loss, because we can't take it back to the store abroad, we keep the items in our store. We keep the items in the show case and we sell them to walk-in customers”. Hera a marketplace retailer has offers both offline and online. [Hermes]

Another aspect of multi-channel retailing was how they realised the benefit of creating brand awareness and transcending from offline to online and vice-versa:

[...] we opened a shop in Akure recently and we had so many customers came online and social media handles to say oh, I can see a building that looks like Bacchus. [...] Are you guys in Akure, are you guys coming to Akure now. [...] people are coming online, people are taking pictures of the shop and sending on social media saying Bacchus is in Akure, [...]” [Bacchus]

Findings suggest that MC adoption can positively influence organisation performance (see Table 6-4).

Emerging constructs identified included:

- Brand enhancement
- Increased sales revenue
- Increased return on investment (ROI)
- Productivity
- Growth

As a result of adopting MC organisations are able to have country wide and “global” presence, increase brand awareness built on customer trust fostered through the user experience of the MC application.

There is a greater correlation to sales revenue with increased digital marketing. Hermes stating that it recorded significant sales in the first few years of implementing a mobile-enabled business model especially around festive period, however the impact of exchange rate and the economy had affected the organisations overall profitability. Athena spoke of the gains of mobile advertising suggesting that they tend to be overwhelmed with the number of orders they receive following a digital campaign and to be able to cope with capacity, they reduce or stop such digital campaigns. Hermes and Hera benefit from advertising income larger EC platform has. Similarly, additional revenue is derived from mobile payment applications through transaction fees and interest on instalment payment plans. As part of the business model, Hermes claim to only make revenue from ‘convenience fees’ charged.

ROI can also be increased with MC adoption as evidenced from Venus, Apollo and Athena. They agree that large capital investments (in ratio to organisation size) was needed to support MC adoption, which could also yield large returns with following comments stating:

“I know they are making a lot of sales through that investment. They are not regretting it; they are making it” [Venus]

“...from a return on investment that outweighs the cost of actually investing in such mobile technology”. [Apollo]

Contrarily, organisations that don't take a long-term view of the investment may not succeed with one respondent, the Accounts Officer at Hades and now Finance Manager at Zeus suggesting that other organisations such as Yudala (acquired Hera) and Kaymu (acquired by Zeus market place) to survive in the market:

“There are a lot of them that came on board that didn't survive in the market because of poor return on investment.” [Zeus]

Other potential value outcomes identified include the increased staff productivity as a result of providing mobile accessibility. For example, Venus agents have reportedly been more productive and with Zeus, J-Force are able to reach out to friends or family on WhatsApp and mobile communication. Also, by being able to bring lower-end suppliers onto the mobile-enabled platform it has increased productivity as vendors have been able to increase their capacity. This has led to the overall expansion and growth of the leading market-place platforms. The finding in Table 6-4 suggest that digital platforms have helped small-scale enterprise, enabled by EC or MC technology witness business growth. Historically, these vendors intention was just to trade via the traditional brick and mortar either in open marketplace, central markets and more recently malls. This digital platform is giving them the opportunity to sell their products via larger platforms like Zeus and Hera.

6.3.6.3 Economic growth

The potential economic value that MC technology can create in a society is supported by Terziyan (2002) that defines MC as a business transaction with an economic value conducted using a mobile terminal.

The findings revealed an ecosystem of organisations, institutions and individuals able to create value for potential economic growth. This is well-demonstrated from the platform organisations with the view that their organisation has created value across retail and throughout the entire value chain.

Zeus states:

“Both the marketplace players and even the platform gets the opportunity to expand their business.

The economy at large is improved because there is better variety” [Zeus].

MC value was also expressed in the ability to harmonize the fragmented nature of retail in Nigeria and bring suppliers closer to their end customer. The availability of vendor to platform to customer interaction has made it possible for the small market traders to thrive. For example, those trading in the multiple open market centres A respondent from Hera stating:

[...] you have people or organisations that were not looking at m-commerce, that we have brought them onto the platform. For example, the guy at TEJUOSHO market or something like that before he will not have thought of how he can get their items to the customers” [Hera]

[...] because we allowed for medium and some small-scale players, a lot of these small-scale players never ever planned technology growth or EC or m commerce as a medium to get there store online.

This platform is giving them the opportunity to sell whatever they want to sell. [Zeus]

Clearly, in this case the driver for economic growth is strengthened with the collaboration and the co-creation potential that MC presents; the value network of labour force, technology and customers.

Table 6-4: Case study organisation comments relating to performance value outcomes

(*) indicate where organisation performance has been impacted negatively

Quotation from interviews (selection)	Category	Nodes	Case
EC platforms advertising income is a major source of revenue. So, they open up the channels for people to advertise products and once they advertise because they believe that they have traffic.	Organisation performance	Revenue income	Zeus, Hera & Hestia
We developed Zeus PAY because obviously that's also one of the issues that we've had a long standing at Zeus in profitability. Second, looking at you know, generates revenue from the transaction fees, etc. could be another good revenue stream.	Organisation performance	Revenue income	Zeus
The convenience fees go to Hermes. Of course, you need to make a little return.	Organisation performance	Revenue income	Hermes
they have been able to have a large market, like the finance company that I told you about, will come around and provide funds to them. Now, that has improved their productivity, it improved their sales. It has helped them increase their capacity and, on that basis, a lot of them have been able to expand as they have enjoyed economies of scale.	Organisation performance	Productivity	Zeus, Hera & Hestia
The reps become more productive and we can easily monitor what they are doing. We can monitor (from the mobile app) their position, whether you are at home and you are supposed to be on the way to the customer.	Organisation performance	Productivity	Venus
As we expand, we are looking at how do we, you know, how do we remain profitable so that our partners and even the stake holders as you know, we are generating revenue enough for them to see profits or dividends from there.	Organisation performance	Productivity	Venus
2016 was when we had our biggest sale in Kaduna. We had at some point we had customer traffic of up to 200. In Abuja, they had between 300 to 500 customers every week.	Organisation performance	Increased sales	Hermes
let me say the number of orders we get per day is on average about over 200 depending on our online marketing	Organisation performance	Increased sales	Athena
Some times like this we are very busy, because if we decided to push adverts online, the sales that comes in, we might not be able to manage the whole lot	Organisation performance	Increased sales	Athena
brand enhancement for instance is one key benefit, people are going to trust you more, people are going to be dependent on your quality service. So, yeah, that's another reason why we are adopting such online mobile-enabled technology.	Organisation performance	Brand enhancement	Apollo
They are not as prominent a brand today. To be honest, I think the MC model is a good model maybe it just needs some tweaking here and there, especially dealing with exchange rate fluctuation and the logistics and then making the mobile application more user friendly. (*)	Organisation performance	Brand enhancement	Hermes
Zeus focused on growth and attention to performance management and really being aggressive on that. I think that's what made Zeus win because they realized, it's a winner takes all market	Organisation performance	Growth	Zeus
There were a lot of EC businesses that came up. Waka now now, Hotel.ng. I think waka now now, is still existing? Yudala, OXL (online exchange), Efritin. There are a lot of them that came on board that didn't survive in the market because of poor return on investment. (*)	Organisation performance	Return on Investment	Hestia
So, they spent a lot of money, and money was spent. I know they are making a lot of sales through that investment. They are not regretting it; they are making it.	Organisation performance	Return on Investment	Venus
The decision to have a web platform and use the app was to make profit and yield maximum return.	Organisation performance	Return on Investment	Venus
I'm saying there may be financial cost, but at the end of it, you know, the benefits outweigh the cost, you know, from a return on investment that outweighs the cost of actually investing in such mobile technology.	Organisation performance	Return on Investment	Apollo

Quotation from interviews (selection)	Category	Nodes	Case
We have been in business since 2014 and we are still standing. And for a one-man business, this is something that I really appreciate about our company. It is not easy to have an EC company that is profitable [...]	Organisation performance	Return on Investment	Athena
We thought about it and said, ok why not put our products online and see how it goes. And so far, so good. It has been going so well.	Organisation performance	Performance	Ceres
The conversion rate on mobile is definitely higher? I don't remember the exact number and in comparison...	Organisation performance	Performance	Zeus
So, most people actually access the website via mobile web. But I remember, I don't remember the exact number. But I remember that at Zeus, the mobile app had the highest conversion rate. So, there was a push to drive or increase app downloads and app usage.	Organisation performance	Performance	Zeus
you can remarket to them much cheaper. And also, they tend to, purchase more often. And the conversion is higher on the mobile app. This then encourages more repeat customers.	Customer Satisfaction	Repeat Customers	Zeus
My IT gives me report every week. The app is helping with the business and is growing the company	Organisation performance	Performance	Venus
I raised eyebrow when they wanted to start the investment with the amount that they were calling. With the amount, but what I see, we are getting the return now. From what I see, at least it is worth it.	Organisation performance	Return on Investment	Venus
looking at it from the stakeholder perspective, I think there could be some initial costs involved but when we look at it overall, the cost benefit from what was invested in getting the technology, is relatively low. I think that overall, in the longer term, the organizational performance is also enhanced	Organisation performance	Stakeholder Value	Venus
The issue of Hermes is the overall performance now has declined, although at the time it grew but it profits is now reduced because is coming down a bit because of challenges like the exchange rate and overall economy. (*)	Organisation performance	Performance	Hermes
Most of my customers they come back. [...] Despite that, the customer has since been buying other things from me.	Customer Satisfaction	Repeat Customers	Zeus
we need the old customers to come back, we need them to tell their brothers to patronize us. We need them to tell people to patronize us, because I think one good customer, I mean could result in a lot of sales	Customer Satisfaction	Repeat Customers	Bacchus
"You have like lots of rejection, and people don't accept orders and so the Gross to Net is impacted by that. Maybe that doesn't necessarily affect adoption, because people will still try or use EC [...] like the final delivered orders. Yeah, so that affects the margins". (*)	Organisation performance	Stakeholder Value	Zeus
because we allowed for medium and some small-scale players, a lot of these small-scale players never ever planned technology growth or EC or m-commerce as a medium to get there store online. So, most of them their intention is just to do the brick and mortar. This platform is giving them the opportunity to sell whatever they want to sell.	Economic Value	Stakeholder Value	Zeus
Zeus has created value across the retail sector. You know it's a commerce, it's a chain. So that's where the advantage is. You open it up to everybody. Both the marketplace players and even the platform gets the opportunity to expand their business. The economy at large is improved because there are better variety	Economic Value	Stakeholder Value	Zeus

6.4. Thematic discussions and conclusion

The results show themes that have emerged from the Organisation value-based adoption model framework in Figure 6-8. The research has used the example from 13 case study organisations to illustrate the antecedents of MC adoption in organisation and its potential value outcomes within Nigerian retail sector. Themes identified from the organisation study seem to align with the Tornatzky and Fleischer (1990) TOE model. However, sub-themes that seem interesting to the Nigerian context were also identified such as the “copy and paste” hybrid model to adoption resulting in 22 antecedent variables identified. In order for MC to be adopted and create value, these factors that need to be considered. These factors represent a combination of complex themes, where the level of influence of each factor could impact organisations MC adoption and use as well as the value outcomes. The study has proposed that the organisations business model, organisation MC adoption strategy, technology, organisation, environmental and other factors influence MC adoption and ultimately the value potential to its customers, the organisation and wider economy.

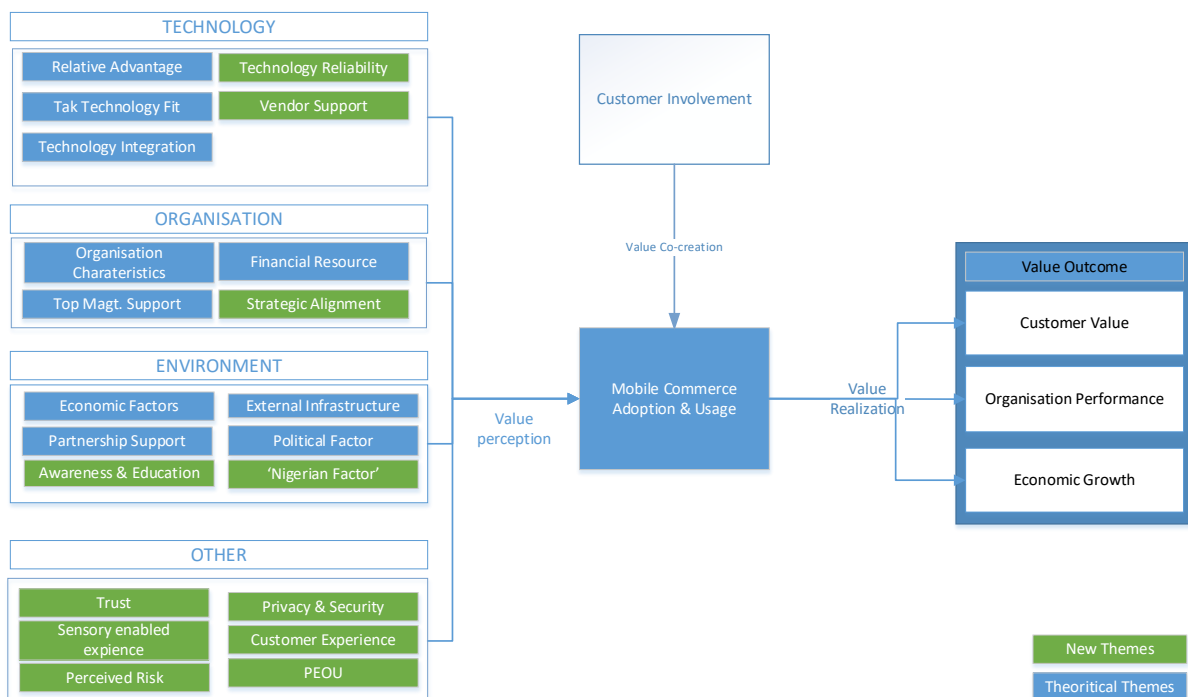


Figure 6-8: Organisation value-based MC adoption model

6.4.1. MC adoption intention and usage should create value

This research asserts that the adoption of MC innovation as part of the value proposition is important for retailers and consumers to create growth. A good business model made up of the customer value proposition, the resources, processes and profit formula can enable companies to be resilient in the face of change and create growth (Christensen, et al., 2016). This research asserts that the adoption of MC innovation as part of the value proposition is important for retailers and consumers to create such growth. Organisations identified with the potential of MC value attributes (Z-attributes) (Clarke, 2008; Chung-Shing and Ho, 2010; Winnie et al., 2014). The respondents recognised the potential convenience and time-saving attributes of MC with the suggestion that Nigerian traffic, created opportunity to target customers that do not have time to travel and visit the malls. Supported by literature highlighting MC mobility offering with “on-the-move” functionality (Ngai and Gunasekaran, 2007) and ubiquity with anywhere any time commerce (Zhu and Kraemer, 2005; Chong, 2013; San-Martín et al., 2015) capability. However, a number of organisations did not feel Nigeria was “there yet” when it came to MC adoption as they did not see convenience as being relevant with the view that although it took minutes to order, it still took significant time for products to be delivered (and at least 2-3 weeks for orders from overseas) due to logistics constraint as well as the view that Nigerians were typically ‘short-term thinkers’; if they had a need now, it needs to be met now; customers would rather go to the mall or market and buy it immediately without having to wait, corresponding to Hofstede (2011) short-term orientation. It follows that more needs to be done by both academics and practitioners to seek ways for organisations to exploit the value attributes of MC while at the same time looking at innovative ways to make the experience more convenient for its customers.

The findings revealed that organisations adopted mobile-enabled shopping applications in the main, however neglecting a “mobile-first” strategy but rather opting for MC as a mere extension to EC (Ngai & Gunasekaran, 2007; Alfahl, et al., 2012). Some early adopters; Zeus and Hera adopted mobile shopping and payments applications presenting customers with additional value propositions through mobile only discounts and incentives. Organisations that adopted off the shelf mobile technology like

mobile social media related to commerce such as WhatsApp offering communication and collaboration between the organisation and its customers. By adopting effective social media within the B2C context, organisations are able to create competitive advantage. This is supported by Bolat et al. (2016) in their study of businesses and mobile social media capability suggesting that organisations that utilize MSM are able to reinforce their strategic position agreeing with earlier studies on mobile application usage (Mahatanankoon, et al., 2005; Li, et al., 2008). This research provides insight on creating value through MC application adoption such as MSM that can be acquired by firms at minimal costs (Bolat, et al., 2016).

The emerging theme of 'copy and paste' (imitation) is not surprising for a developing economy like Nigeria with limited skills, R&D budgets and capital investment. Scholars are divided on the issue in that while innovation (the development of new technology) may lead to divergence between firms or nations, imitation tends to erode such differences in technological competencies, and hence lead to convergence (Fagerberg & Verspagen, 2002). It is possible for a country facing a technological gap, at a lower technological level than the countries on 'the world innovation frontier', to increase economic growth through imitation or 'catching-up'. However, to what extent does this tie in with the diffusion of innovation and technology adoption? According to scholars that ascribe to the Schumpeterian model, economies can either copy "frontier technology" or copy "backward or less sophisticated technology" with the view that firms will copy the most advanced technologies based on their income-level and growth rate. Mies (2019) concluded in their study that copying less-sophisticated technologies enables economies with poor initial conditions to escape a low-growth equilibrium in the long term.

Imitation is problematic because laggard economies that copy less advanced technology, they tend not to be able to truly innovate and bring about transformational change. Organisations in the West with more stringent Intellectual Property Rights and laws appear highly on the world innovation Index with such economies showing more economic growth. Counter arguments suggest that organisations

that engage in the adoption of new technologies, face difficulties in enjoying the fruits of their labour as competing organisations attempt to imitate successful innovations and adapt them to their own use (Helpman, 1993). This means, where there are no legislative policies in place organisations are more attune to imitating the competition where as in developed economies the availability of patents, trademarks, and copyright laws prevent infringements and abuse of intellectual property rights. This presents opportunity for further research to examine extent to which a hybrid MC adoption process impacts long term economic growth. With one view that favours a more stringent IP rights (and less “copy and paste”) to encourage innovation to benefit the wider economy or the other view that tighter IP regulations serve to strengthen the monopolistic power of larger organisations that have access to foreign investments and can afford R&D and marketing budgets.

6.4.2. Customer involvement, channel strategy and why it matters in the Nigerian context

This research has empirically shed light on the level of customer involvement that aims to integrate the customer and organisation through the value creation potential of MC. Using conceptual framework, this research supposes that the greater the customer interaction (involvement and consumer feedback) can enhance organisation intention to adopt MC. The level of customer involvement from interacting with the customers to managing customer complaints and feedback as well as personalized interactions was seen to vary across organisations and inconsistent across channels.

Findings revealed offline players like Ceres and Bacchus typically adopted more of a multichannel retailing strategy in which the online mobile offering was seen as a secondary and a separate extension to their existing “brick and mortar” store which could be confusing to the customer. Hera has an EC and mobile application and its physical store. Other scholars suggest that retailers operating separate channels as independent ‘silos’ end up with these channels (EC, MC and traditional stores) sometimes competing for customers attention (Turban, et al., 2015, pp. 204 -206). The executives of these organisations, did not seem to be aware of the concept of omnichannel retailing thus creating further

opportunity to apply MC not just as an extension of existing business strategy but to further utilise its innovative Z-attributes to redefine their overall business model. This could be from customer engagement, to expanding on its customer experience, to creating new offerings where customers are able to enjoy an end-to-end immersive interaction with the organisation. Also, evidence suggests that by adopting a retail model that is integrated across all channels, this can build brand equity and customer trust.

Findings suggest that rather than passive interactions, opportunities exist to extend the customer engagement to active reaction, relational marketing and personalization to enhance MC adoption. Organisations operating a more traditional retail strategy suggests are able to provide a 'personal touch' as part of the customer service. The question is can this only be offered offline? Is the mall experience crucial (preventing users from accessing the stores online via their mobile?) With respondents suggesting the offline experience offers customers the ability to walk, look around, touch and feel the products before they buy. This was discussed extensively as part of the sensory enabled factors that impacted MC adoption as discussed in section 6.3.4.4 Other factors. The issue of identifying "fake" or "grey" products, the opportunity to offer 'immersive customer experience' (hedonic elements) the ability to create mobile moments, for example have been found to be significant on MC adoption from organisational studies (Taylor, 2016). Similarly, organisations adopting a mobile-first mindset and focusing on the micro-moments which are the critical touch points within the consumer journey, when added together, determines ultimately how the journey ends (Adams, et al., 2015), can enhance the customer experience and ultimately create value. Such organisations can offer experiential and emotional aspects of MC derived from the multisensory, emotive, and entertainment aspects of consumption experience (Babin, et al., 1994; Holbrook, 1996) thus the opportunity for retail organisations to further exploit this as part of their value proposition. This really matters within the Nigerian context as we have discussed mobile internet penetration and opportunities for the younger 'digital dependents' generation that have grown up in a world of broadband and mobile internet (unlike the older generation that struggled with NITEL phone

connectivity). There are opportunities for organisations to excel, drive huge value and build a competitive edge by being mobile.

6.4.3. External Infrastructure (network & logistics) impacts MC adoption

From the findings, we assert that the lack of infrastructure can negatively affect the successful adoption of MC. This was identified as the lack of reliable mobile networks, which was considered the most expensive in Africa. This has inevitably led to erosion of customer trust in the overall reliability from the MC service provider. Similarly, MC is reliant on supply chain and logistics network communication to be fully effective. However, due to issues with transport related infrastructure (i.e., bad roads and traffic) to connect the organisations and its customers in a timely manner, this has been seen as a barrier, as the level of time convenience gains offered via MC is reduced. Picoto, et al. (2014) supports that the mobile environment (level of mobile technology usage and support in the market), impacts MC adoption. Impacts of reverse logistics due to costs has also negatively impacted organisation margins and MC value performance outcomes. It is argued that although reverse logistics incur expenditures, an efficient return experience may give a positive image of the online retailer by signalling trustworthiness. (Sakshi, , et al., 2020; Tandon, et al., 2021).

6.4.4. Organization characteristics and foreign reliance impacting MC adoption

The size of the organisation was identified as impacting MC adoption (Frambach & Schillewaert, 2002; Aguila-Obra & Padilla-Mele´ndez, 2006) in multiple ways. Locally owned and controlled organisations are nimbler to respond to the local needs of the customers. Whereas larger MNC are less likely to adapt MC specific local requirements due to shared resources and mobile platforms across country divide. Also, larger firms have greater access to foreign investment and utilise foreign based skilled resources to implement such MC innovation. The evidence suggests that the technological competence is not always locally available, with a reliance on foreign resources. Organisation should look to build a MC savvy workforce to cope with ever changing customer experience and close the technical skills gaps by building local talent rather than buying imported talent.

6.5. Summary

The research identified themes in line with the TOE framework that impact organisation MC adoption behaviour. However, it identified 'other' variables such as customer trust, sensory enabled experience, fear of scams and delivery risks. The chapter analysed the level of customer involvement in the co-creation of MC value and found this to be mainly post adoption. Value outcomes relating to customer value, organisation performance and economic growth outcomes were identified.

Chapter ends

Chapter 7: B2C MC Adoption - Joint display of findings and discussions

Previous chapters highlight the preliminary steps of data collection, cleansing and data analysis of customer survey and organisations semi-structured interview. The key contribution of this research lies in presenting a holistic approach to MC adoption from a business to customer (B2C) perspective. This chapter is aimed at unpacking the MC adoption constructs and broadly examining its value creation potential with integrated data analysis from the consumer and organisation perspective to expand the body of knowledge in this area of research.

Various studies on the business model (Osterwalder & Pigneur, 2010) and value proposition (Osterwalder, et al., 2014), MC value proposition (Clarke, 2008; Chung-Shing & Ho, 2010; Picoto, et al., 2014), customer value (Zeithaml, 1988; Woodruff, 1997; Holbrook, 1994; Holbrook, 1996; Leroi-Werelds, 2019), value co-creation (Prahalad & Ramaswamy, 2004) and the experience economy (Pine & Gilmore, 2011), have expanded our understanding of value creation through organisation to customer interaction. There has only been modest effort on MC adoption (MCA) research that provides a framework on how MC value proposition might be exploited within the retail sector of a developing economy, and how customer value perceptions of MC can be realised through adoption and how organisations co-create MC value to drive or destroy organisation value.

The principal objective of this chapter is therefore two-fold: (i) to expand the MCA research agenda; the value proposition potential of MC to transform business and create value. (ii) present an empirical mixed-methods study using MMR to portray multi-dimensional aspects of MC from the perspective of the customer and the organisation.

The research question to answer in this chapter is, could an integrated conceptual framework be developed as a holistic approach to MC adoption from the business and consumer's perspective? To that end, as part of the empirical study, using the individual and organisation technology adoption lens (Rogers, 2003; Tornatzky & Fleischer, 1990; Davis, 1989; Davis, et al., 1989), value-based adoption model (Kim, et al., 2007), and following a convergent mixed-methods design.

As seen in the earlier chapters, the mixed methods data set was collected at around the same time (April 2019) culminating from quantitative data collected using questionnaires from 392 customers and a qualitative approach, in which 16 in-depth interviews were conducted across 13 retail organisations in Nigeria.

This chapter presents discussions following integrated data analysis; using tables, charts and graphs as a basis for analysing the results from the quantitative aspects of the customer hypothesis in Chapter 5 and themes from the organisation adoption identified in Chapter 6. The discussions are divided into four parts. The first part presents a discussion of the JDA adopted. The second part presents the finding by examining the level of fit between customers MC value perception and organisations MC value proposition; their acceptance and usage and ultimately the value outcomes from adoption. The third provides a discussion of findings and implications. Finally, the conclusion and summary are presented.

7.1. Joint display data analysis

This research applies a JDA to integrate, analyse and interpret the data. A joint display is considered an approach for showing the integrated data analysis in a single table or graph of both qualitative and quantitative data. Leading scholars of MMR have called for greater articulation of data integration methods and increased use of joint display to provide additional insight into results from mixed methods data (Bazeley, 2012; Guetterman, Fetters, & Creswell, 2015; Yin, 2006). Joint display can be defined as a way to “integrate the data by bringing the data together through a visual means to draw out new insights beyond the information gained from the separate quantitative and qualitative result” (Fetters, et al., 2013). By merging the data, it allows for a more distinct and nuanced comparison of the results (Fetters, 2020). One of the key benefits of applying a joint display is its visual presentation of data integration and synthesis aimed at providing clear and easy to understand information.

The circular joint display utilizes the side-by-side joint display as against other displays such as statistics by themes or Geo-coding by themes provides an innovative and visual means to both integrate and

represent mixed-methods findings to generate new inferences. The merging analysis follows these three steps: (i) Analyse separately (ii) create joint display (iii) interpret (Guetterman, 2019).

Step 1 – Analyse quantitative and qualitative data separately:

In this phase, separate analysis of both customer and organisation data is conducted as detailed separately in the chapters above.

1a. Customer data is analysed separately: information from customer survey data set was analysed by presenting a descriptive analysis of the questionnaire data. The customer MC adoption (MCA) intention was assessed in terms of mobile technology usage (mobile device vs smart phone vs feature phone), network usage, mobile application usage. EFA and CFA was conducted to detect the possible number of underlying factors and factor analysis produced a six component-model that explains 61 percent of the variance. CFA assessed the validity, reliability and model fit, followed by a CB-SEM against the model constructs. The following constructs were considered significant with perceived benefits of MC adoption positively related to perceived value; perceived value positively related to MC adoption intention; Trust positively related to adoption intention; and personal innovativeness positively related to adoption intention. However, the following constructs were not supported as perceived cost and perceived risk were considered not significant in influencing consumers MC value and customer involvement was also considered not significant in influence MCA intention. Refer to section 5.4.

The five open-ended qualitative questions from the survey were coded in NVivo 12 and using the Crosstab query, shows intersections between codes and attribute value (and cases). Some of the attribute questions were juxtaposed against the open-ended questions to (i) demonstrate additional reliability of the survey data. This is to also support the Cronbach alpha reliability test that was performed as part of the quantitative analysis. (ii) to show levels of correlation between what the customers were saying (their responses to the closed-ended question). This is presented in two main categories: Customer benefits of adopting retail providers MCA and sacrifices of adopting MC.

Customer value cross-tab query – when asked about the use of the organisation MCA and its delivery of excellent value, the responses were as follows: 13% strongly agree; 47% agree; 6% disagree; 3% strongly disagree. However, 31% neither agree or disagree. These same respondents responded to the question - suggest most important factors for improving the value you receive from organisations MC applications offering. Cross referencing the top ten frequency-search with the top five coded responses highlighted customer service, improved security, ease of use, product quality and improved network as MC value drivers. From the findings, even though 47% of customers agree that overall, the use of organisations MCA delivers excellent value, the heatmap in “dark green” shows that there are areas where value can be enhanced further (see Table 7-1). The same can be said for those customers that are undecided yet. What is slightly surprising is that for the number of customers that disagree or strongly disagree, only very few commented on the areas where MC can add value. These customers do not appreciate the value potential from embracing MC. These customers will be considered as laggards in Rogers (2003) DOI theory.

Table 7-1: Customer benefit crosstab query analysis

Survey Respondent	Overall, the use of organisations mobile applications delivers me excellent value = 5 = strongly agree (49)	Overall, the use of organisations mobile applications delivers me excellent value = 4 = agree (184)	Overall, the use of organisations mobile applications delivers me excellent value = 3 - neutral (120)	Overall, the use of organisations mobile applications delivers me excellent value = 2 = disagree (26)	Overall, the use of organisations mobile applications delivers me excellent value = 1 = strongly disagree (13)	Total (392)	Top 5 ranking
Customer Service	8	33	30	4	3	78	1
Delivery Service	2	15	10	3	0	30	
Ease of Use	4	18	15	2	1	40	3
Improved Network	4	20	9	3	2	38	5
Policy	1	6	3	0	1	11	
Price value	2	11	10	1	0	24	
Product quality	2	19	17	1	0	39	4
Provide timely customer feedback	2	11	13	3	0	29	
Improved Security	4	32	23	3	0	62	2
User friendly experience	4	12	8	0	0	24	
Total (unique)	25	118	95	16	5	259	

Customer sacrifice cross-tab query – when asked if there are financial barriers such as the cost of network and data charges, impacting MCA; the responses were as follows: 8% strongly agree; 40% agree; 17% neither agree nor disagree; 5% strongly disagree (see Table 7-2). However, 29% disagree that there are financial barriers to MCA. These same respondents responded to the question - what do you consider as the key finance related constraints to using MC in Nigeria and identified three main influences as: finance or money issues, network barriers and data. The heatmap also validates the customer sentiments based on the number that agree that there are *financial barriers to MCA*. This sentiment was linked to the cost and quality of voice and data networks. The cost of the mobile phones was seen as a lesser barrier, perhaps due to availability of cheaper phone inputs from China.

Table 7-2: Customer sacrifice crosstab query analysis

Financial Factors							
Survey Respondent	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications = 5 = strongly agree (33)	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications = 4 = agree (156)	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications = 3 = neutral (67)	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications = 2 = disagree (115)	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications = 1 = strongly disagree (21)	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications = N/A (0)	Total (392)
Finances or money Issues	5	30	5	12	0	0	52
Network issues	7	27	15	11	4	0	64
Poor data	6	16	0	2	1	0	25
Total (unique)	15	63	19	25	5	0	127

Another customer sacrifice cross-tab query considered was risk. When respondents were asked if there is considerable risk involved in using MCA such as the risk of disclosing bank details; the responses were as follows: 23% strongly agree; 49% agree; 12% neither agree nor disagree; 12% disagree and 4% strongly disagree that there are intrinsic risks to MCA. Few of these same respondents expressed risk as a key constraint to using MC in Nigeria. The heatmap strongly validates this customer sentiment that *there are considerable risk barriers to MCA* (see Table 7-3).

Table 7-3: Customer risk crosstab query analysis

Risk Factors							
Survey Respondent	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce app = 5 = strongly agree (92)	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce app = 4 = agree (191)	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce app = 3 = neutral (47)	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce app = 2 = disagree (48)	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce app = 1 = strongly disagree (14)	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce app = N/A = (0)	Total (392)
Risk	6	7	1	0	0	0	14
Total (unique)	6	7	1	0	0	0	14

The final customer cross-tab query was about Trust factors impacting MCA. When respondents were asked their perception of using their retail providers' MCA, if they were considered trust worthy; the responses were as follows with: 42% strongly agreeing and 50% agreeing, while 5% neither agree nor disagree; 1% neither disagreeing nor strongly disagreeing. When analysed against the question on key constraints to MC as fear of scam (issues of trust), the customer sentiments agreed:

"Most sites sell fake products; Some scam the customer and do not sell the real package" - Respondent 121

"The fear of disclosing personal information due to the alarming rate of scam in Nigeria (fear of fraudsters" - Respondent 225

"Scamming (419ers)" - Respondent 249

"I think in a country like Nigeria, it is not safe as a lot of people are scared of being scammed" - Respondent 279

"Scam / 419 - Yahoo, Yahoo boys" – Respondent 290

Trust was expressed to be a factor that can hinder MC adoption (MCA) as per Table 7-4.

Table 7-4: Customer trust crosstab query analysis

Trust Factors							
Survey Respondent	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy = 5 = strongly agree (165)	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy = 4 = agree (197)	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy = 3 = neutral (21)	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy = 2 = disagree (4)	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy = 1 = strongly disagree (3)	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy = N/A (2)	Total (392)
Fear of Scams	18	14	1	0	0	0	33
Trust	19	25	2	0	0	0	46
Total (unique)	37	38	3	0	0	0	78

1b. Organisation data is analysed separately – organisation semi-structured data is analysed in the qualitative analysis section under the following themes (1) MCA intention and usage (2) Antecedent factors influencing organisation MCA (3) Organisation – Customer value co-creation (4) MCA value outcomes (refer to section 6.3).

Step 2 – Merging of results to create a Joint Display:

In this phase the customer and organisation related data is merged using a joint display (Fetters, 2020). Initially multiple side-by-side display is presented of the quantitative constructs against the qualitative themes by presenting the customer MCA perspective against the organisation MCA perspective (see Appendix 10.5 Thematic analysis process (steps 1& 2)).

The merged data is grouped in four main dominant themes: (i) MCA adoption and usage - the level of fit between the organisation MC application offering and customer needs (ii) Adoption antecedents – assesses organisation value proposition to customer value perception (iii) Impact of Trust on MCA (iv) Value outcomes – MC value co-creation between organisations and its customers, value expectation and value realization. To represent the MC value adoption interrelatedness, merging the data through a graphical display, enables the identification of similar and dissimilar results; development of a circular display; comparison of statistical variables and themes; and confirmation, disconfirmation, or expansion of the results (Creswell & Plano Clark, 2018).

Through three initial joint displays (refer to Appendix 10.9 Joint Display Analysis), we further developed a single circular joint display by applying an iterative analysis process as prescribed by Guetterman (2019) with the analysis inspired by the Technological Pedagogical Content Knowledge (TPACK) integration of qualitative and quantitative data (Bustamante, 2019) that integrates the customer and organisation perspective of MCA. The joint display developed for this study is therefore a mixture of a side-by-side display and a results comparison display (Guetterman, 2019; Cresswell, 2015). Data triangulation is applied by presenting a combination of qualitative and quantitative results to provide a single visual representation of the data, and at the same time indicate congruencies and discrepancies in both data sets. It integrates the Value-based adoption model (VAM) theory as the basis for its development. In this case, MS Visio is used to develop the circular joint display, using basic shapes, lines, and fill effects.

TOC represents the combination of Technology (MC), Organisation and Customer to understand how particular elements of value are proposed, perceived and realized through organisations adoption and consumer acceptance of MC (Figure 7-1). Studies suggest that MC technology on its own has no value, as according to Chesbrough (2010) the economic value of technology like MC will remain latent until it is commercialised via a business model. This research argues that exploring MC adoption from the customer perspective and organisation perspective separately is not sufficient to generate long lasting value. According to Teece (2010) a good business model is considered as one that provides value to the customer and at the same time provides the enterprise with a significant proportion in revenue Kim, et al. (2007) agrees. VAM against the business model value flows, using the TOC enables better understanding of the interactions between MC technology, organisation and customer, also for effective acceptance of MC by customers, organisations need to design and implement MC that aims to capitalise on its unique attributes to fulfil its business needs and deliver value outcome.

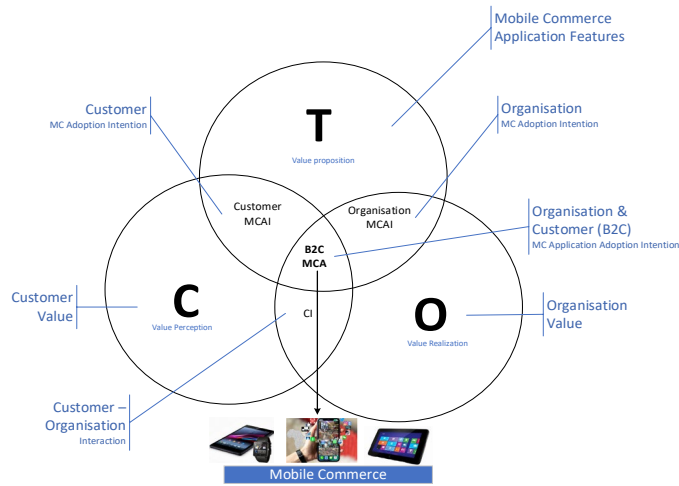


Figure 7-1: Alignment between MC adoption Technology, Customer and Organisation (TCO)

At the heart of the joint display are three concentric circles and the interrelationships between the MC Application (MCA) features, customer MC adoption intention (MCAI), organisation MC adoption intention (MCAI) and organisation - customer interaction (CI) (B2C relationship). See Figure 7-1 above. Highlighted in grey (see Figure 7-2), the quantitative analysis consisting of survey variables (aggregated values of coded references) from NVivo. The survey variables directly match the components of the customer VAM (Kim, et al., 2007), it is logical to include the quantitative analysis at the initial point, given the level of significance of the key constructs. It shows descriptive results of MC applications based on quantitative analysis of the “agree” scale in percentages.

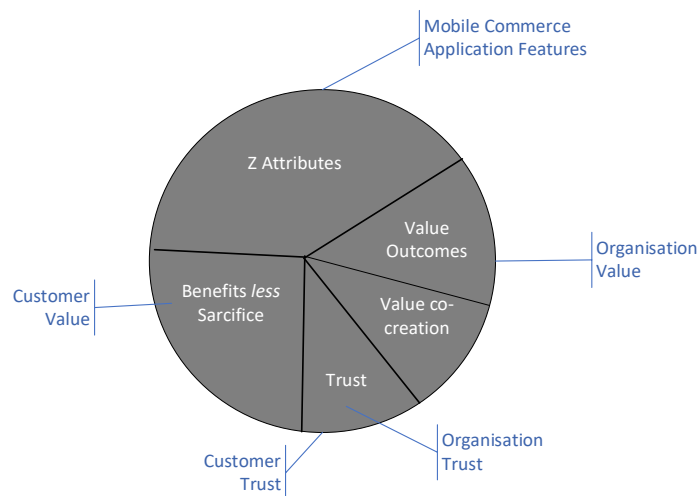


Figure 7-2: Quantitative variables within the TCO

Quantitative variables that produced ‘not significant’ results were highlighted to further analyse against the qualitative results. The second and third rings in white, include the corresponding themes and quotes that emerged from the organisation qualitative data as well as the qualitative results from the open-ended customer survey. Qualitative results that did not align to the quantitative results were highlighted as a way to represent lack of concordance or congruency. The fourth ring, in light grey, indicates the convergence of the qualitative and quantitative results, based on fit of data integration, by using the words concordance, expansion, complimentary and discordance (Fetters, 2020). Lastly, the outer most ring, in white identifies the emerging themes from integrated customer and organisation perspective of MC value. Refer to Figure 7-3 below.

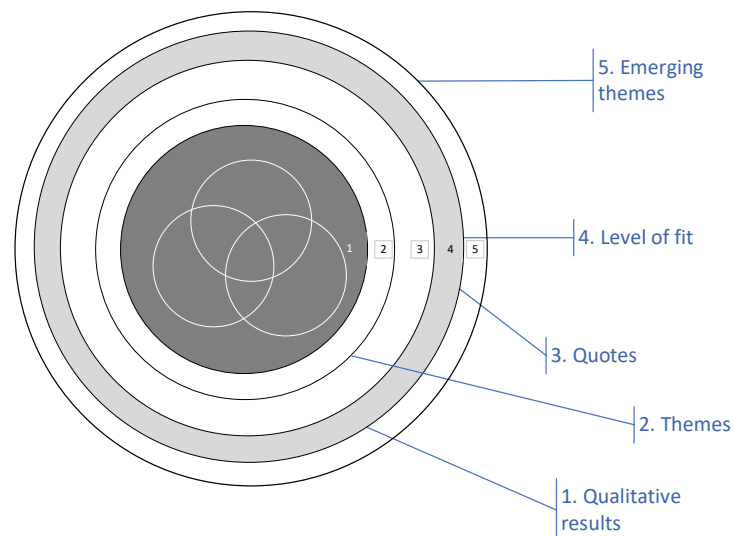
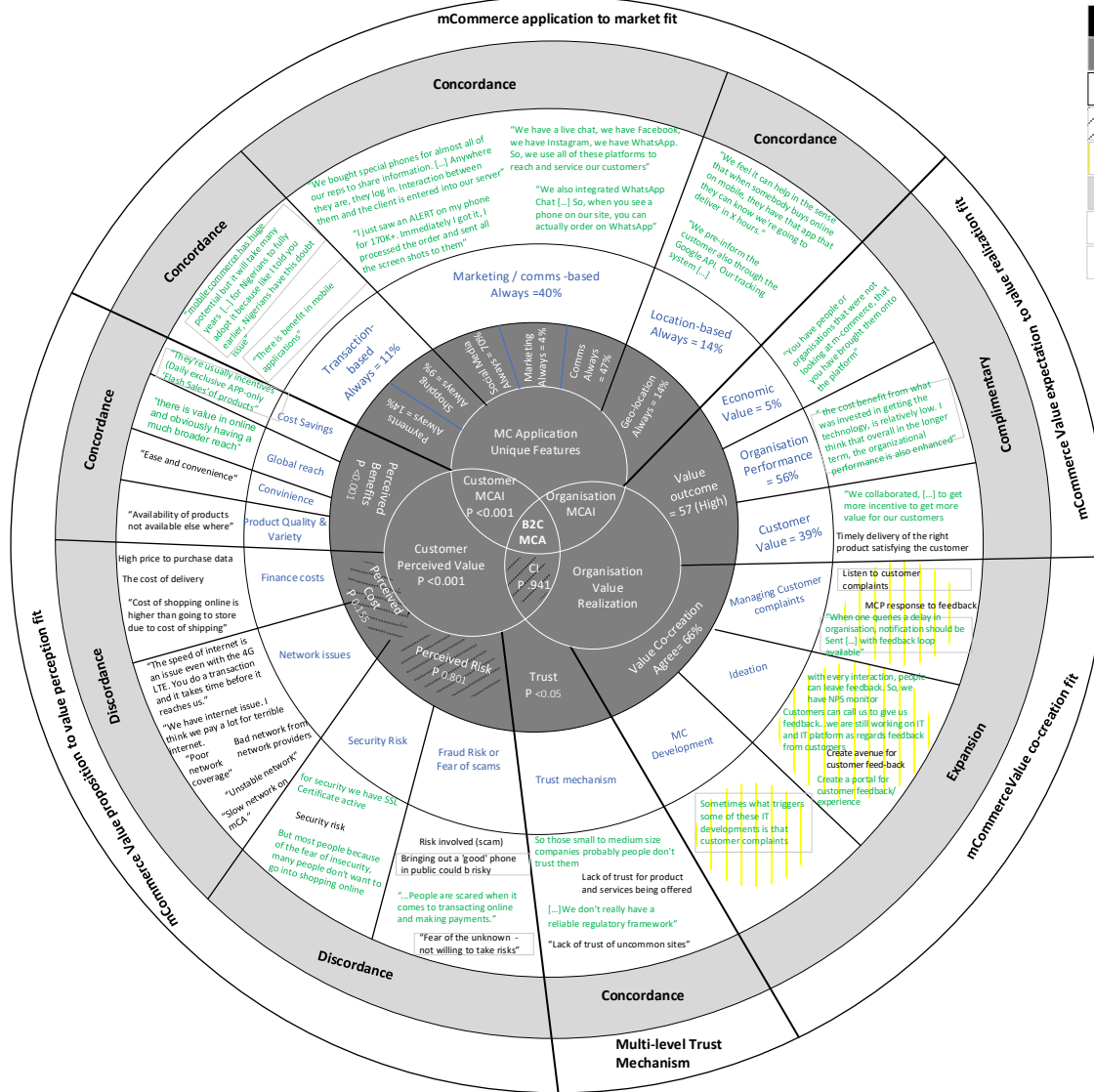


Figure 7-3: Level 1 to Level 5 circular rings within the TCO

So far, we have explored the customer adoption perspective: different MC application features that customer adopt; usage experience according to customer needs. Additionally, retail organisation MCA proposition: application features they have adopted and how they utilise it to create customer value, both responses have been synthesised accordingly, and the level of fit as shown in the circular display. The structure of the diagram (Figure 7-4) visually conveys merging of data as opposed to connecting data, so it is consistent with a mixed methods convergent design (Bustamante, 2019).




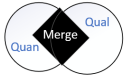


Legend	
	Quantitative scales
	Emerging themes and sub-themes
	Non-significance
	Qualitative disparity
	Level of Fit between QUANT and QUAL
	Customer quotes
	Organisation quotes

Figure 7-4: Joint Display: MC value-based TCO integration of quantitative and qualitative data

Step 3 – Interpret and develop inferences:

In this phase, a mixed methods analysis and interpretation was performed after the merging of results. This is so meta inference and level of fit between the customer MC acceptance and organisations MC adoption and usage can be assessed by looking across the data set. The following levels of fit as defined by Fetters (2020) and expressed using the symbols in Table 7-5 below is presented as part of the findings:

Table 7-5: Four possible combination of fit with quantitative and qualitative findings

Concordance	Elements of quantitative and qualitative findings from both customer and organisation perspective lead to the same interpretation	
Expansion	Elements of quantitative and qualitative finding from both the customer and organisation perspective provide a central merging as well as non-merging interpretation	
Complementarity	Elements of quantitative and qualitative findings from both customer and organisation perspective, illustrate different but yet non-conflicting interpretation	
Discordance	Elements of quantitative and qualitative findings from both customer and organisation perspective, led to conflicting interpretations	

7.2. Findings from Joint Display Analysis (JDA)

In this section using the JDA, the findings are split into four major themes / sections and summarizes the level of “fit” between the quantitative and qualitative data and the merging of results that validate a concordance, expansion, complementarity or divergence (Fetters, et al., 2013; Fetters, 2020):

- i. MCA and its unique value proposition (MC application and features)
- ii. Antecedents of MCA (Benefits less sacrifice = value)
- iii. Trust and impact on value adoption
- iv. MCA Value outcomes

Where customers MCA intention, antecedent constructs and value outcomes aligned with the retail organisations MC offering, concordance is confirmed (transaction based, comms, marketing based).

Location-based MC applications; cost savings, global reach, convenience, product quality and variety benefits; trust mechanism). Where there are elements that are contradictory, a discordance is confirmed (perceived cost, perceived risk). Where there is a central theme of each of the components that align with the customer and retailer perspective with additional variations, expansion is confirmed (MC development, ideation and complaints as part of value co-creation) and when there are elements of the components that illustrate differences in the finding but that are non-conflicting, complementarity is confirmed (customer value, organisation performance and economic value outcomes).

7.2.1. MCA and its unique features

This section looks at the extent to which the customers' MCA needs and wants are satisfied by the organisation's MC offering. In section Descriptive analysis and Classification of MC application explored the different MC applications features what MCA applications organisations have adopted and how they utilise it to create customer value. If consumers MCA intention and usage experience of mobile application high or low and the retail organisations adoption and usage of MC (through its offerings to customers) was positive or negative, then integration of data cumulated is in concordance. If overall the customers perspective was positive and that of the organisation's sentiment did not match, then a level of divergence and disparity in the interference is presented.

As presented above in Figure 5-3, evidence for customers' mobile application usage showed a high rate for social media and communication applications (social media >70%, communication >40%, location-based services >14%, mobile payments >14% and mobile marketing >4%) – refer also to Appendix 10.9 Joint Display Analysis. The view of how organisations adopt these applications as part of their customer offering is also positive. Findings revealed a relatively high rate of social media application adoption by customers. This was equally matched with most organisations adopting social media handles such as Facebook and WhatsApp as communication tools to interact with their customer base and their ability to utilize application capabilities to create value. For example, social

media commerce; integration of applications within websites to provide a “chat-bot” like OTT feature. Retailers are able to take orders, manage queries and interact with customers using a cost-effective and familiar interface.

Customer’s response showed a less than average rate of adoption for transaction-based services such as mobile payments, shopping and location-based apps. Three major retailers had an app with some other organisations looking to adopt payment or transaction-based apps in future. Most organisations only adopted a mobile-enabled web platform for transacting. Virtually all of the EC retailers have mobile applications. A manager of the leading EC platform (Zeus) stated:

“There is benefit in mobile applications. Hera has (Hera App, Hera Pay); Zeus has (Zeus App, Zeus Pay), Pay Porte. However, the view was that Nigerians were not there yet when it came to transaction online and adopting mobile payment applications due to fear of fraud as well as its associated risks”.

Both customer usage and organisation adoption and offering of mobile related marketing such as QR codes was at a low rate.

In terms of the level of fit between organisation MC application value proposition and customer acceptance, a concordance or convergence of interpretation is supported (see Figure 7-5).

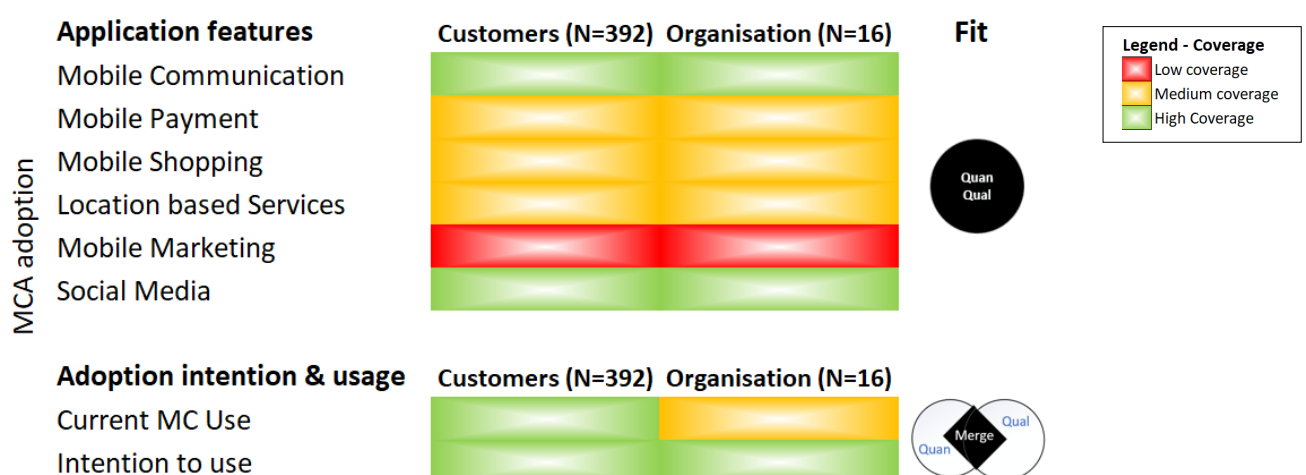


Figure 7-5: MC application adoption fit

The percentage of customers that “agree” that they currently adopt or intend to adopt MC in future is high, demonstrating its commercial acceptability validated by the rate of mobile phone penetration in Nigeria. However, although MC is offered in one form or another (e.g., mobile-enabled websites) by most organisations interviewed, (shopping or payment apps, mobile chat etc), their perception on consumer acceptance is still sceptical with the view that MC is still emerging.

“We do online transactions and we have stores nationwide. Our stores are scattered all over Lagos and outside of Lagos [...] Online is good, online mobile commerce has huge potential, but it will take many years and still have many years for Nigerians to fully adopt it because like I told you earlier, Nigerians have this doubt issue” [Manager Ceres].

For organisations that are early adopters, the findings present an opportunity to propose new business models with MC at the centre of the value proposition that aligns to customer benefits / “gains versus sacrifices / “pains”. This confirms some convergence in the potential of MC adoption in Nigeria in future from both the customer and organisations but more importantly, reveals customers intention to adopt MC and its features (with level of significance $P < 0.001$) but that organisations are still not as positive in providing innovative mobile propositions that customers are after in the organisation’s adoption of the technology. Thus, the merging of results creates avenues for organisations to seek new business models inspired by MC phenomenon, the potential for further research into the challenges of MCA by organisations.

7.2.2. MCA antecedents and value creation potential

The trade-off (between benefits less sacrifice = value) is shown using the joint display. The inner ring shows the statistical analysis of the MCA intention using the value-based adoption model (Kim, et al., 2007) The extent to which customers are willing to adopt MC. The customer participants surveyed indicated a positive relationship between perceived value ($\beta = 0.517$, $p < 0.001$) and adoption intention ($R^2 = 0.58$). This is supported with the qualitative value benefits identified by customers, (i.e., the value proposition of MC that organisations identified).

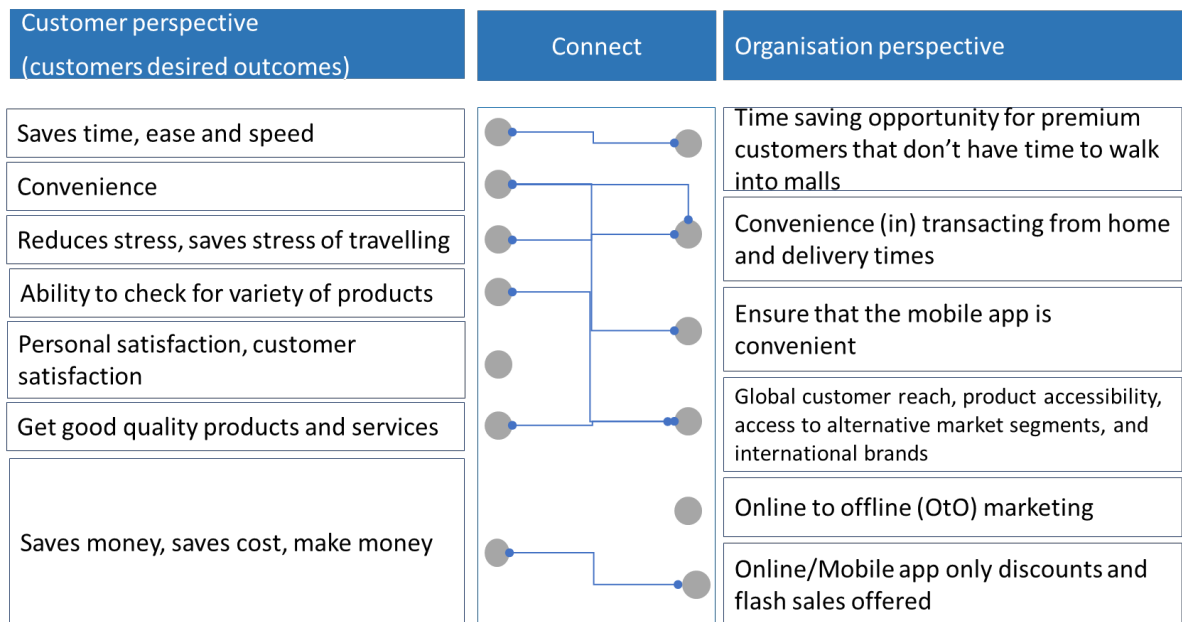


Figure 7-6: Qualitative customer and organisation value fit

The analysis in Figure 7-6 showed convergence between the perceived value of MCA from the customer perspective as shown in the inner circle, supported by the qualitative sentiment and value offered through organisations MC offering (second and third circle) of the joint display. This included the convenience, time-saving and access to variety and quality of products through a global reach.

The findings from the crossbar query (see section 6.1) further reveal that 45% of customers agree that MC delivers excellent value as their personal needs have been met. However, there are 38% that neither agree or disagree “dark green” showing that there are areas where value can be enhanced further; customer service, improved security and PEOU. See Appendix 10.9 Joint Display Analysis.

The concept of value can further be sub-analysed using the two themes of benefits less sacrifice. Using Osterwalder’s pain and gains concepts (Osterwalder & Yves, 2010) to analysing value, examined the level of fit between (i) perceived benefits or gains and retailers gain enhancers and (ii) perceived sacrifices or pains and retailers pain killers we examined how organisations are looking to solve those issues using “pain killers”. and how organisations are looking to enhance such gains to create greater value using “gain enhancers”.

7.2.2.1. Perceived benefits and gain creators

The merging of results revealed concordance between customers perceived benefit of MC and organisations value proposition that MC can offer. The customer participants indicated a positive and significant relationship between perceived benefits (Perceived enjoyment, PEOU, PU, personalization) ($\beta = 0.74, p < 0.001$) and perceived value ($R^2 = 0.54$) as displayed in the inner ring of the joint display. Similarly, this is supported with the qualitative MC perceived benefits (expected from customers) and benefit creators (offered by retail organisations) as depicted in sentiments in Figure 7-7 below and the third circle of the JDA.

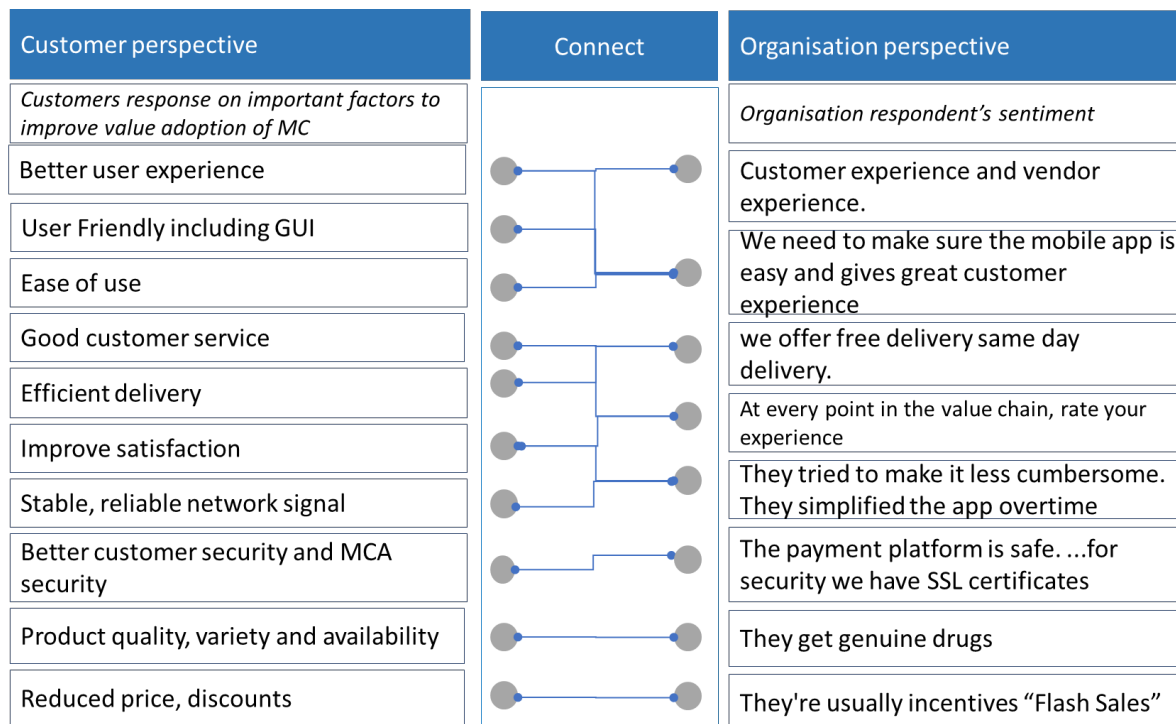


Figure 7-7: Qualitative Customer and organisation benefits fit

7.2.2.2. Perceived Sacrifices (pains - pain killers)

The merging of results revealed discordance between the customer quantitative data (close- ended questionnaire) and the qualitative data from both retailers (semi-structured interviews) and customers (open -ended questionnaire) perspectives with regards to perceived sacrifice (represented by the fourth circle) in Figure 7-4. The customer participants indicated a not significant relationship between perceived cost ($\beta = 0.091, p = 0.155$) and perceived value ($R^2 = 0.54$). Similarly,

the customer participants indicated a negative and not significant relationship between perceived risk ($\beta = -0.016, p = 0.801$) and perceived value ($R^2 = 0.54$) as shown in the inner circle of the joint display. Contrarily, customers and retailer organisations sentiments (see Figure 7-8) both show the following perceived sacrifice related factors as significantly impacting MC adoption.

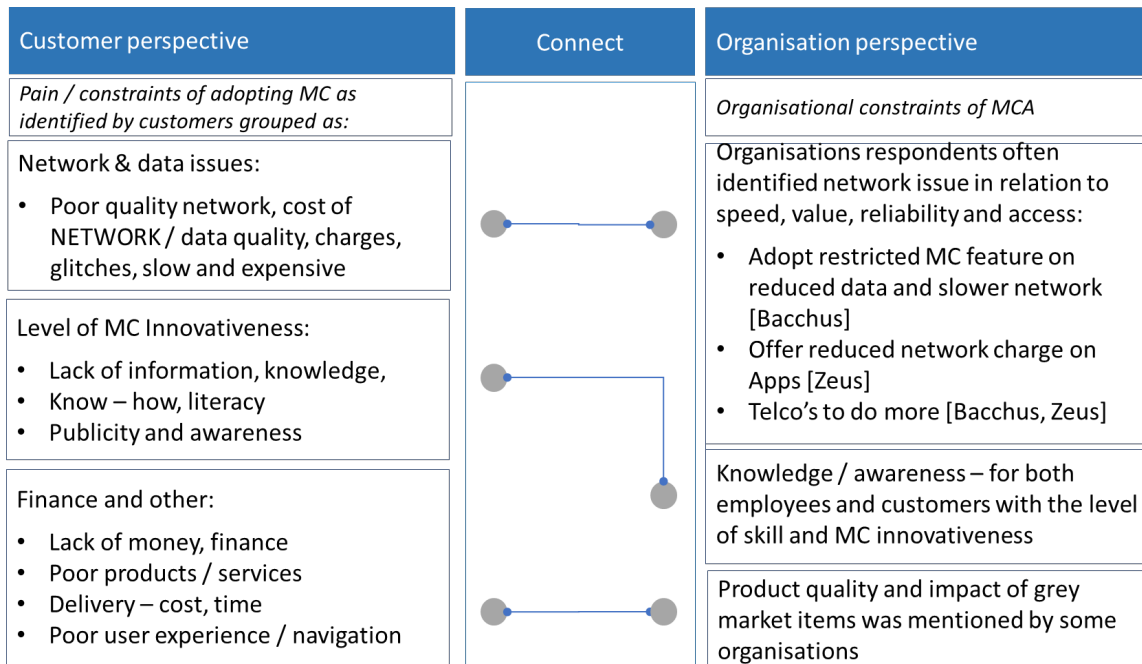


Figure 7-8: Qualitative Customer and organisation sacrifice fit

The results of these constraints are compared from the perspective of the customer as well as the organisation depicted in the themes and comments See second and third circles of the joint display:

Finance Cost –Network Cost is considered not a barrier to MCA from the survey however network cost and data are barriers as supported by organisations perspective as not providing value for money. Other cost pain points included delivery cost and time

Network issue – mobile network providers need to do more in terms of cost of data and availability of network. Also, organisation participants suggested that MCA should utilise less data as part of the features.

Risk – was not considered significant from results of the customer survey that there was considerable risk worth providing information online; however, the second and third rings reveals security risk and fraud risk as impacting MCA.

Knowledge / level of Innovativeness – considered as a new theme or pain point constraining MCA. Organisation's struggle getting the right employees with the right skillset and knowledge but also creating customer awareness on MCA. With the introduction of reps (Apollo) and affiliate agents (Zeus & Hera) retailers have been able to reach target audience and reduce the technical knowledge barrier to MC adoption. Athena proved this by using social media such as Facebook and WhatsApp.

A possible explanation of the cost sacrifice discordance can be attributed to the two scale items used in the questionnaire (i. Phones with Mobile Commerce application capabilities are expensive; ii. There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications). The influx of cheaper phones into Nigeria reducing the price barrier and therefore not a significant sacrifice to MC adoption. Another consideration is participants stressed the issue of network not necessarily in terms of cost value but in terms of service, availability and reliability.

Qualitative and quantitative results regarding risk in terms of customer perspective and organisation perspective is discrepant. Reviewing the sample population, we found a younger generation that could be considered less risk averse. This presents an area for further studies. A consideration of the impact of age on MC adoption.

The discordance provides opportunities for scholars to evaluate and refine research questions especially in area of cost and risk taking into account technology advancements since early adoption studies. It also highlights "pain killer" with improvement of reliable, strong and affordable network from network service providers. An area of expansion could be reducing the "pain" associated with lack of knowledge / innovativeness of MCA (considered significant in Customer adoption studies and highted as an organisation adoption factor).

7.2.3. Trust and impact on MC adoption

The fourth circle of the JDA shows concordance between the customer and organisation perspective on Trust and the impact it has on MC adoption. The customer participants indicated a positive and significant relationship between perceived trust ($\beta = 0.117$, $p < 0.05$) and adoption intention ($R^2 = 0.58$) as per 2nd ring in the joint display. 92% of customer participants agreed or strongly agreed that they will use MCA if their retail provider was trustworthy. This suggests issues of trust as a barrier to MC adoption from a customer perspective. Organisations agree with this view, they embrace the need to build customer relationships, offer payment on delivery and build brand enhancement to foster trust. Qualitative trust themes identify customer comments in relation to trust and the organisation view point on trust as it also impacts the customer (see Figure 7-9).

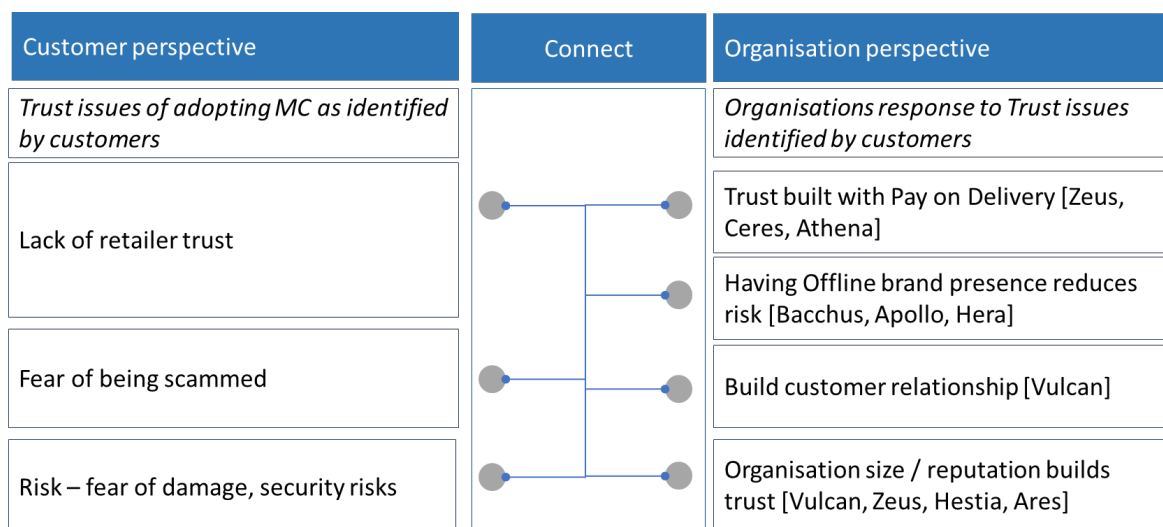


Figure 7-9: Qualitative Customer and organisation Trust fit

7.2.4. MCA Value Outcome

Findings of MC value outcome is presented under two key themes: (i) MC value co-creation and (ii) the value outcomes received from the customer and organisation perspective. With the merging of data revealing expansion and complementarity respectively.

6.2.4.1 Value co-creation

The inner ring of the joint display represents the finding that a high percentage of customers (66% of customers) agree to co-create value through shared experiences, ideation and MC development ideas

(see Appendix 10.9 Joint Display Analysis), with retail buying and selling mostly selected by customer respondents as preference to MC value co-creation in Nigeria. However, the results from the quantitative survey show that customer interaction ($\beta = 0.053$, $p = 0.463$) does not have a statistically significant effect to Adoption Intention ($R^2 = 0.58$) as depicted by the customer and the retail organisation in the inner ring of the joint display.

The data from the second and third circle of the joint display reveal the qualitative themes and comments from organisation participants. When asked how they involved customers in the MCA process, it was mainly post-adoption (in the form of reactive response to customer complaints or following feedback).

[...] So, most of the things we've done as improvement are usually not the ones you see Amazon and Alibaba do, but are mostly the ones that a customer came up with as request, or complaints at a time or the other [...] [Manager Hera].

Similarly, Athena suggested that they had made changes to their mobile-enabled platform following customer feedback. However, can one consider this as sufficient level of customer involvement? From the findings, organisations were aware that with customers instant access to social-media platforms, it is just as easy to co-destroy value through negative feedback.

The discrepancy between the retailer and customer results regarding customer interaction revealed partially congruent as far as value co-creation fit. The integration of co-innovation staging is an area of further pre-ante and post-ante value co-creation research. Customers are keen to get involved in pre co-creation process and less inclined with engaging in post-ante aspects, perhaps due to the stress factors involved - see sections 5.5.1 and 6.3.5. Retail organisations in Nigeria passively engage customers as part of post-ante MC adoption, so more needs to be done to explore why this is the case. Through its interaction with its customers, organisations need to ensure they engage and actively seek out customer interaction and active engagement throughout the whole MC adoption process to realise the potential benefits of MCA.

6.2.4.2 Value expectation – value realisation fit

The survey data did not measure post adoption outcomes except for the adoption intention as discussed in section 6.3.1. However, the qualitative analysis from both the customer findings and organisations findings revealed complementarity and a level of fit between the customer value expectation and retail organisations value realization.

When exploring the Expectancy Value theory, Vroom (1964) postulates that the probability of a wanted outcome (Mobile Commerce Acceptance) is dependent on how much the customer values the desired outcome (Motivation = Expectation x Value).

The coding visualization shows that there are three main value outcomes customers are interested in: customer satisfaction, customer value (intrinsic, utilitarian value and hedonic value) word of mouth. This is linked to the MCA benefits explored in section 7.2.2, where customers identified reasons to adopt MC; saves time, saves money, access to variety of products convenience, reduced stress and customer satisfaction. With the motivating driver for customers to adopt MC identified as: individual's own level of innovativeness (17%); mass media influence (30%); friends and peer pressure (37%); celebrity influence (3%) amongst other factors. Social media plays an influential role in consumers adoption of MC through social influence in which an individual's beliefs, attitudes and opinions are affected by someone else (Venkatesh, et al., 2012):

“When Hermes started, people welcomed the idea, people loved the fact that they could actually buy items from source on their mobile device”

The organisations view that customers MCA expectation can be met by delivering customer satisfaction, by ensuring timely delivery of products ordered via mobile applications or mobile-enabled website. The ability for organisations to also offer free delivery within the state, reduced data tariffs etc as well as meeting customers' needs throughout the customer journey can enhance customer value. Conversely, organisations accept that the impact of not being able to meet customers'

needs on time can adversely impact the value. Organisations have been able to grow organically by word-of-mouth referrals from customers showing their MC service is working.

A correlation exists between the value outcomes from the customers and organisation value outcomes like: organisation performance, stakeholder value, repeat customer patronage and growth with Venus stating:

“I raised eyebrow when they wanted to start the investment with the amount that they were calling. [...] but (from) what I see, we are getting the return now. From what I see, at least it is worth it”.

However, respondents from organisations accept that the value outcomes are not easy to realise with constraints of reverse logistics and Pay on Delivery options, the Nigerian economy and exchange rates. This impacts business performance as it affects profit margins:

“Mobile commerce has huge potential [...], because I'm a salesman, I will not say that mobile commerce is doing better than the traditional offline”

Findings revealed potential economic outcomes as Organisations embrace job creation through the use of affiliates and sales representatives that earn sales commission. A leading market platform mentioned:

“We developed something called the J Force - a Network of agents across the country, and it's like, hundreds of thousands of them. [...] J-FORCE is a huge, huge contributor [...]

The mobile platform and network partnering shows potential to connect SME and the fragmented market to a global reach of customers thereby creating economic growth. The findings identified good opportunities to connect buyer and seller-side as well as connecting cross boarder supply and demand on a mobile-enabled platform.

The merging of results reveals that the outcome expectation for customers is different but complimentary to achieving organisational and economic value outcomes.

7.3. Discussions and implications

This mixed-method study gave a comprehensive insight of the potential for MC; value-based adoption including value outcomes for customers and retail organisations using a meta-inference across different data sets.

The circular joint display results are summarized into five main themes following the triangulation of qualitative and quantitative research, multiple adoption theory, as well as customer and buyer side conceptual frameworks. This is aligned to MMR literature that posits the usefulness of triangulation in mixed methods studies as a “dialectical” process whose goals seek a more in-depth nuanced understanding of research findings (Mertens & Hesse-Biber, 2012). These themes examined the level of fit between organisation and customer perspectives of MC adoption to include: (i) MC application to market fit (ii) MC value proposition to value perception fit (iii) multi-level trust dimensions (iv) MC value co-creation (v) MC value expectation to value realization fit. We therefore propose an integrated value-based MC adoption framework as a holistic approach to MCA from both the business and consumer’s perspectives.

7.3.1. MC market fit

The Joint display results suggest a concordance in MC application adoption between consumers and what organisations are offering; communication and marketing-based applications providing initial and transaction-based applications, viewed as emerging and “not there yet” in the Nigerian context, creating a mobile market fit. Nigerian consumers prefer using mobile phones for information searching and communication (sending or receiving e-mails, SMS or MMS messages) with one of the most important MC attributes offering the sense of “always-on” and consumers convenience (Zhi-shuang, et al., 2011; Emmanuel & Hippolyte, 2010; Mahatanankoon, 2007). Nigerian retail organisations also seeing the application as a promotional marketing tool to reach its wider customer base (Shareef, et al., 2017).

Social network platforms can be considered an essential pathway for MCA in Nigeria as it the combination of social media, shopping of products and services online (Wang & Zhang, 2012; Wang & Yu, 2017). With the emergence of cheaper mobile internet and smartphones (including tablets and phablets), the growth in social networks presents the opportunity for Nigerian organisations to leverage cheaper and readily available platforms, to reimagine and adopt new business models. Scholars suggest that the emergency of digital structures enable greater interaction and human activity thus creating a way for radical changes in how we work, socialize and create value in the economy (Kenney & Zysman, 2016). According to Internet World Stats, there are over 200m Nigerian internet users (96% penetration rate) with 31.8M and 45M active Nigerian subscribers on Facebook and WhatsApp respectively, as at December 2020. This growing trend in the use of social commerce like WhatsApp and Facebook to offer customer support, chat bots and sales service shows a huge business potential that can result in economic benefit. With consumers and organisations looking at adopting social media applications, it enables B2C users to collaborate, communicate and manage relationships with each other (Hartmut, et al., 2015; Bolat, et al., 2016). With a high number of customers influenced by mass media as well as friends and family in their adoption intention, the ease at which consumers could interact with each other is high. Scholarly views hold that social influence was a strong predictor of MCA (Chong et al., 2012; Omonedo and Bocij, 2017; Moorthy et al., 2017) although (Tarhini, et al., 2019) in their study revealed that social influence may not have an impact on Omani customer's intention to adopt MC.

On the contrary, adoption of transaction-based applications; mobile shopping and mobile payment applications were less prominent amongst Nigerian consumers and retail offerings. The general perception is that "Nigeria is not there yet" when it comes to MCA. The concerns around trust, security, fear of scam (419) and privacy concerns could be seen as a barrier to adoption (Zhi-shuang, et al., 2011). Also, the fear of buying "fake goods" and the inability to see what is purchased online. This ties in well with earlier studies by Mahatanankoon, et al. (2005) that suggest why "transaction mode" applications did not rank high due to consumers' concern over the security and privacy of their

mobile transactions. To bring about consumer confidence, additional security measures; two-factor authentication offered by most banks in Nigeria, instant “alert” notification to know once payments have been made from an account and better email and SMS notification confirming a transaction should be embraced. The issues of Trust must be addressed to bring about further transaction-based adoption by both consumers and retailers alike with retailers adopting innovative ideas for “Pay on Delivery” as not just a short-term marketing initiative but as part of their business model.

Retail organisation can look at providing a better and consistent user experience when it comes to shopping display and visualization of items on mobile apps which may ease customer’s fear of mobile transacting and making payments online. The idea of “mobile-first” was not at the forefront of organisations adoption strategy with only few retail organisations looking to adopt a mobile based strategy that offered customers mobile-only incentives and a targeted user experience framed around mobile. Mobile-enabled shopping via conventional websites was a common means of offering customers mobile transactions. To further enhance transaction-based adoption, that results in a call to action and reduces the number of incomplete transactions, abandoned shopping carts etc., retailers need to understand and exploit the micro-moments (which are critical touchpoints within today’s consumer journey. By building specifically for mobile, retailers can create a more personalized user experience for the customer deciding on what or how to buy. Taking advantage of MC features and adoption strategies, creates potential to bridge the gap between retailers’ “cold feet” in fully embracing MC while exploiting the high potential with customer current use and intention to use MC in Nigeria. Business models must be re-imagined and driven by the MC adoption phenomenon. Also, further studies in tackling the challenges faced by organisations embracing MC is called for.

7.3.2. MC value proposition to perceived value fit

Using the value-based adoption model as the theoretical underpinning for the joint display, revealed both concordance and discordance (Fetters, et al., 2013; Bustamante, 2019). Examining the level of fit, it shows that customers perceive that there is value in organisations value proposition in which

value = benefit / less cost (Lindič & Silva, 2011) and a statistically positive and significant relationship with adoption intention. The benefits of accepting MC was positively discussed with both customers and organisations. There was conformity that customers will buy the benefits that adopting MC offers. Whether this is intrinsic or utilitarian benefits; saving time, reducing stress or access to quality and variety of products. By adopting MC, through the interaction with the organisation, this in turn leads to customer satisfaction and ultimately organisation performance (Picoto, et al., 2014). The analysis therefore reveals a level of concordance on the overall value: confirmation that MC can result in perceived benefits for customers and retailers providing greater credibility to the study.

Elements of discordance were identified, when it came to costs assessed between organisation MC value proposition and the value perception fit. Cost is considered a critical part of value proposition assessment which customers should also evaluate (Lindič & Silva, 2011). Results shows some discordance between the customer quantitative analysis of “sacrifices”; both monetary and non-monetary value (Kim, et al., 2007; Zeithaml, 1988) with nominal cost and risk considered not so significant in impacting customer perceived value of MC. Qualitative themes identified “other” costs; frustration with network, delivery time and poor product quality. This is aligned to other scholars that consider customer sacrifices to include non-monetary resource time, energy, effort, unsatisfactory spending and technicality (Zeithaml, 1988; Kim, et al., 2007; Lindič & Silva, 2011; Keong, 2016). The survey variables mainly focused on notional costs such as cost of mobile phone and network costs which could have been important during the time of earlier studies (Luarn and Lin, 2005; Chong et al. 2012). With today’s phones, you can get a mobile device with ample processing power comparable to PCs at a significantly reduced price. Also, the research was conducted in Lagos city, which could be considered the more affluent part of Nigeria. Similarly, with the sample size of the survey participants favouring a younger demographic, they could be considered less risk adverse and risk considerations could be considered subjective and dependent on the individual. We can therefore surmise that value is specific to the context with time, cost, perceived risks, convenience among others, factors that vary from individual to individual; organisation to organisation and country to country. The implication is

that organisations should aim for technological advancement to increase customers benefits and minimize sacrifices to enhance their value proposition and drive competitive advantage (Barnes, et al., 2009) within the environment it operates.

7.3.3. MC and multi-level Trust mechanisms

The findings reveal concordance on Trust from both consumers and retailers as being an antecedent barrier to MC value-based adoption. Very few scholars have examined Trust and technology adoption from both the perspective of the customer and organisation with (Kim, 2014) providing one of the only notable studies aimed at understanding the multilevel and dynamic nature of trust in EC. Previous studies have elucidated the role trust plays and its antecedents to MC adoption from individual customer perspectives (Persaud & Azhar, 2012; Chong, 2013; Murillo, 2017) or organisation perspectives (Taylor, 2016; Köster, et al., 2016). What is also interesting from the Joint Display findings is the dynamic, and multi-level nature of trust in the MC adoption context. From the literature review, we examined trust from Zucker (1986) three angles: characteristic based, process based and institutional based. Characteristic-based trust refers to trust that is developed through similarities between consumers and organisations (Luo, 2002) or similarity between consumers and family or friends (Hillman & Neustaedter, 2017). This can also be considered as a customer's individual-level traits or organisations-level traits that define their trustworthiness expectations (Kim, 2014). Results showed that consumers will adopt MC if they considered organisations and their mobile-enabled sites and applications to be trustworthy. Similarly, organisations that demonstrate a propensity to trust customers will look to offer customers trust-building incentives as part of its value proposition; for example, payment on delivery and favourable returns policy, which will have an influence on their acceptance of MC. Although customers and organisations differ in their inherent propensity to trust because of their different personality; firm size, customer experiences and organisational experience of MC, the findings suggest that the larger the size of the organisation, the higher the trust for such organisations.

Process based trust as one of the most common trust approaches associated with the transaction-processing built through a history of past transactions (Luo, 2002; Hillman & Neustaedter, 2017). It can also be considered as interpersonal trust in which there is a relationship between the trustee and trustor (Kim, 2014). In the MC context, the trustee is the individual or organisation serving as a transactional partner, while the trustor is the individual willing to accept a degree of risk to transact via MC. Our findings revealed that even though customers are experiencing content and communication-based transactions (MCA and its unique features and MC market fit) the low interest in adoption of transaction-based features such as mShopping and mPayments could be attributed to a lack of trust. Mayer, et al. (1995) suggested that trust may evolve as the trustor and trustee interact. The expectation is that as customer and organisation interact, the level of trust should increase based on positive outcomes. When applied to MC, successful completion of the initial transaction is an important first step in an MC relationship, however to enable long-term relationship, customer outcomes such as customer satisfaction, word of mouth as demonstrated in the findings can foster trust. Scholarly evidence agrees that trust changes over time with variations in the level of trust in pre-purchase phase stage and satisfaction with previous transactions (Kim, 2014). Organisations can start off with basic MC interactions such as providing reliable mobile content as a basis for developing that trust with the customer overtime. Similarly, to boost the level of transaction based mobile interactions, organisations must strive to fulfil initial transactions with the customers to encourage future relationship and continue to build up the dynamic nature of future trust through continuous feedback between the customer and organisation.

The final aspect of trust is institutional trust that relates to trust established by presenting a public presence that is respected and shows integrity through third-party organisations, guarantors, distribution models etc.(Luo, 2002; Hillman & Neustaedter, 2017). It can also be considered as system-based trust that examines to what extent the needed structural conditions are present to foster MC value-based adoption (McKnight, et al., 2002). Our study found that having a physical store with human presence and human contacts was more natural, commonplace and in some cases more

relevant than having an online presence, and consumer trust was naturally developed this way. The fear of the unknown presented a barrier to online mobile transactions, a trust barrier and antecedent to MC adoption. Organisations should look to adopt structural assurance mechanisms to mitigate security risks, such as SSL and encryption service as well as building robust mobile-enabled sites that cannot be easily replicated or cloned by fraudsters. This will give users added belief that the mobile application is secure (Choudhury & Karahanna, 2008). We examine concordance in trust as a factor, one common view is a lack of effective regulatory system or bodies to arbitrate in trust related matters. Following observations, there is a lack of evidence to suggest organisations membership in associations with professional code of conduct (Luo, 2002) as a means of building institutional trust. For example, in the UK the presence of regulatory bodies such as FCA, OFWAT and OFGEM; complaints commission, ombudsman and National trading standards aimed at protecting consumers and safeguarding businesses rights could be considered as a means of enhancing Institutional Trust. The implication of institutional trust is that organisations that have a multichannel or omnichannel strategy can enhance the institutional brand trust through the online-to-offline interactions. The introduction of National Information Technology Development Agency (NITDA), the 2018 Federal Competition and Consumer Protection Bill in Nigeria could be seen as a positive step in the right direction to foster trust and promote fair, efficient and competitive markets in the Nigerian economy. Hillman & Neustaedter (2017) in their study of, institutional trust and mobile commerce in North America found that brand awareness and trusted marketplaces were not enough to mitigate many users' trust concerns in their use of mobile payments. Also, more needs to be done by government to foster trust in mobile transaction processing and centralised control of information to protect both the right of customers and organisations in a digital economy, to increase the MC adoption potential.

7.3.4. MC value co-creation fit

The findings from the joint display revealed a need for expansion in the value co-creation fit between customers and organisations. As mentioned previously, customers are active participants according to Service Dominant Logic (SDL). Co-creation occurs between the organisation and the customer and

has been defined in terms of co-creation of value (Prahalad & Ramaswamy 2004; Vargo & Lusch 2004). There is shared understanding of the fact that customers can play a role together with the organisation in creating value outcomes. Many scholars suggest consumers assume an active role and create value together with the firm through direct and indirect collaboration (Prahalad and Ramaswamy 2004; Kohler et al. 2011).

However, in assessing the extent to which customers are considered to be involved in the MC co-creation through customer involvement and interaction, there was discordance as customer interaction ($\beta = 0.076$, $p = 0.463$) was considered not statistically significant in determining value-based MC Adoption Intention. However, interaction is considered to be the primary interface between parties (the organisation and customers) undertaking co-production (Ranjan & Read, 2016). The co-production phase usually involves customers and organisations collaborating in the MC product / service design. Our case study organisations reveal customers raise complaints as part of post-ante “value in-use”, which is the derived value through interaction with the firm and its offerings. These findings suggest that although this has resulted in changes in the mobile-enable website and applications as a result of customer feedback following poor user experience. Other scholars’ reference this as “the value beyond exchange value, through use, and experience” (Ballantyne & Varey, 2008). The case study organisation provides some form of feedback mechanism for customers to interact, the customer perception is that they are not always acted upon in a timely manner. With the availability of customer choice, access to information and greater decision-making potential to influence, it is easy to also co-destroy value through negative publicity. To further enhance behavioural adoption intentions, the gap between passive and active co-creative ways in which organisations and customers behave, interact, interpret, experience, use, and evaluate MC value propositions needs to be bridged. This creates opportunity to extend the literature in areas of both co-production (with consideration for knowledge, equity and interaction) and value in use (with consideration for experience, personalization and relationship). More needs to be done in terms of engaging with organisation and educating them on the value of actively engaging and seeking out

customer interaction and involvement throughout the whole customer journey. Interaction is considered a source of value in itself because it has a discursive nature and it triggers social practices across one or more stages of production and consumption (Vallaster and von Wallpach 2012; Ranjan and Read, 2016).

7.3.5. MC value expectation to value realization fit

The final finding in the joint display study revealed elements of complementarity as the level of fit between the value expectation and value realization was examined. As part of the SDL, it suggests that all actors involved in co-creation might gain value, as the study posits that there is potential realised value in adopting MC from both the customer, organisation and the economy. However, each of the potential value outcomes are considered complementary to each other in delivering an effective retail B2C value chain. As this study has not been a longitudinal study to actually measure and qualify the value post-adoption, the view is based on the perceived or current value customers are experiencing through their adoption of mobile applications, to achieve organisation performance and ultimately economic value. This aligns with the view that value realisation can involve a diverse range of perspectives depending upon the participating actors and may take place, and change, over an extended time period (Hilton, et al., 2012).

7.4. Summary

Overall, integrating the different data sets in this mixed-methods case study enhanced the understanding of MC adoption and acceptance across the B2C value chain in Nigeria. It was useful in evaluating a holistic value-based mobile adoption from the perspective of the customer and the organisation. MMR enabled a deeper understanding of the MC phenomenon with complexity around organisation adoption and consumer use.

Creswell and Plano Clarke (2011) discussed the need to examine validity of mixed method research through data collection, analysis and interpretation of quantitative and qualitative data. Through the process of iterating the joint display, the research has sort to the provide rigor and validity in the MMR

by deciding on the suitable quantitative and qualitative data to include, comparing and contrasting data sets, identify themes, patterns and trends through the process of abstraction and meta inference. To minimize the risk of validity threats, the research went through a convergent design, data analysis involving three iterations, use of a joint display to interpret results through data inference.

As part of the analysis, integration of data via a TCO circular joint display revealed concordance, expansion, complementarity and discordance between the customer survey and the organisations interview and customer open-ended results (Fetters, 2020). Using the mixed analysis, the study assessed the level of fit between MC value-based adoption intention and usage allowed for an in-depth understanding of organisation and customer perspectives that otherwise would not have been exposed, thereby providing a holistic understanding of the mobile commerce phenomenon. Table 7-6 summarises the findings from the Circular joint display as below.

Table 7-6: Level of fit - customer and organisation MC value-based adoption

Ref #	Theme description	Level of MC value-based adoption fit
1	MC market fit	Concordance on current MC adoption features offered
2	MC value proposition to perceived value fit	Benefits less sacrifice - results show concordance and discordance fit respectively in the MCA perceived value for both customers and organisations
3	MC and Trust dimension	Concordance in multi-level trust issues between customers and organisations impacting MC adoption
4	MC value co-creation	Value co-creation reveal expansion fit between customers and organisation
5	MC value expectation to value realization fit	Value expectation - value realization fit demonstrates complementarity

This section of the research examined a customer and organisation perspectives of mobile technology adoption using value as a theoretical lens. The mixed methods research adopted a convergent design, revealing a level of fit between the organisation MC value proposition; retail / mobile offering, customers perceived value, trust, value co-creation and value realised. The findings demonstrated

features of MC that organisations should seek to pursue based on customers' current MC usage and intention to adopt. With a level of concordance and discordance in value perceived in MCA, with implications for organisations to increase customers benefits and minimize sacrifices to enhance their value proposition. By highlighting the trust dilemma across customers and organisations, the result demonstrated prospect to further foster trust between all parties involved in MCA. The findings also present unique and new opportunities for organisations to co-create value through co-production and value in use since value realisation can involve a diverse range of perspectives from the customer, organisation and the economy at large.

Chapter ends

Chapter 8: Research conclusion, contributions and recommendations

8.1. Introduction

This chapter concludes the study on understanding factors influencing MC adoption and acceptance and its value creation potential within the B2C retail sector in Nigeria. Other MC research approached the subject from a consumer or business perspective, this multi-level research focused on examining the perspective of the B2C. The research began with a literature review of the MC phenomenon within the B2C retail sector. The research effort involved a quantitative analysis of 392 customer survey data, qualitative analysis of 13 case study organisations, observation and semi-structured interviews. The relationship between organisation MC adoption and consumer acceptance was investigated to ascertain the value offering, using a mixed methods analysis with findings presented in Chapter 5, Chapter 6 and Chapter 7.

This chapter summarises the different stages of the research in line with the research aims and objectives. It draws the research to a conclusion, identifies research contributions to theory and practice and implications for future research directions. Limitations of the research, together with reflection on the research journey is considered.

8.2. Summary of research

This research was conducted between 2017-2021 through a series of iterative steps. Within this section, a summary of the salient content of each chapter is discussed.

Chapter one provided an introduction to the research setting out the problem statement. – In today's digital economy, MC is an important contributor to GDP, however it only represents less than 1% of retail GDP in Nigeria. MC adoption studies in developing economies is still at a nascent stage. Existing studies mainly tend to focus on a single perspective relating to customers. Not a single study has attempted to consider technological, organisational and consumer dimensions of MC adoption, acceptance and its value creation potential simultaneously. Within the Nigerian retail sector, the

research adopted a field study approach to answer research questions posed in context and most importantly expunge the significance and contributory value of the research from a theoretical and practical perspective.

Chapter two reviewed extant literature within the MC retail domain. It provided a definition of MC, MC applications and business models (Teece, 2010; Osterwalder & Yves, 2010). A systematic review as recommended by Kitchenham, 2004 was necessary to explore the current state of MC. The review identified that: (i) further technology adoption research was needed in organisation-wide studies, (Huang and Liu, 2009; AlHinai et al., 2010; Alfahl et al., 2012; Groß, 2015) reconsidering MC innovation as part of the business model (Christensen, et al., 2016); (ii) the need for further MC adoption studies particularly within Sub-Saharan Africa and South America regions; (iii) the need for researchers to embrace alternative methodological approach to MC adoption above quantitative studies; (iv) opportunities to expand and extend main theories. A review of organisation level theories (DOI/IDT, TTF and TOE) and individual level adoption theories (TPB, TAM, UTAUT and VAM) were explored in detail. By examining the merits and de-merits of each of the theories, significant constructs emerged that were considered significant and provided opportunities to extend on existing theories of the TOE and VAM at organisation and customer level. The role of Trust in MC adoption was examined as a major construct in understanding the multilevel and dyadic nature of trust in B2C value chains.

Chapter three examines theoretical backdrops, literature and conceptual framework underpinning the study. The concept of multi-level perspective (Burton-Jones and Gallivan 2007; Bélanger et al., 2014; Zhang and Gabel, 2017) examining both organisation and customer unit of analysis was explained. Technology innovation, business capability (business-level adoption factors), consumer segment (consumer-level) adoption factors and the business value flows of value proposition, value perception and value expectations were evaluated.

Chapter four presents the philosophical paradigm (pragmatism) and approach (case-study) underpinning the research. It examined the research methodology (concurrent parallel mixed-

method), research methods of questionnaires, semi-structured interviews and artefact observations; and research techniques involving tools such as IBM SPSS 27, IBM AMOS 27, NVivo 12 / Pro and MS PowerPoint. A rationale for the chosen research approach was discussed and research design details; pilot study, data collection procedures, sample size and selection, data analysis techniques, risk analysis and ethical considerations were presented.

Chapter five presented the customer MC acceptance quantitative findings with a sample size of 392 and level of reliability and validity of the data assessed as good fit. Seven hypotheses were tested and SEM was used to answer the second research question. Findings revealed four hypotheses; perceived value, perceived trust, individual innovativeness to be predictors of MC adoption intention and perceived benefits, a predictor of customer perceived value), while three hypotheses (perceived risk and cost were considered not significant in predicting sacrifice constructs and customer involvement was considered not a significant predictor of MC adoption intention). A discussion of the findings followed as well as implications for theory and practice presented.

In chapter six, the qualitative findings from the semi-structured interviews of 16 senior executives and regional / branch managers across 13 retail organisations and site⁴¹ observation was presented with a thematic analysis. MC applications currently used by these organisations were discussed. A total of 22 variables from TOE and “other” factors impacting MC adoption were identified. Unique to the context was the “copy and paste” concept, the lack of “mobile first” mindset and the impact of “short-termism” on MC adoption. This chapter associated the level of customer involvement with value co-creation found to be post ante (value in use) rather than as part of co-production. Customer value outcomes, organisation performance and economic growth were discussed as value realised.

Chapter seven presented a holistic view to MC adoption from business and customer perspectives based on a novel TCO model where MC adoption is at the centre of Technology, Customer and Organisation by applying a JDA (see Figure 7-4). This examined the level of fit of MC application

⁴¹ Site refers not only to the physical site of the organisation but also website and mobile app/site.

adoption (MC market fit), with concordance identified between consumers' needs and organisations MC offering (product or service), with communication and marketing-based applications 'topping the charts' - representing the most current fit. The MC value proposition to perceived value fit both revealed levels of concordance - confirmation that MC can result in perceived benefits for both customers and retailers. In examining the sacrifice element (cost and risk) elements of discordance were revealed. Further concordance in multi-level trust issues between customers and organisations was shown. The need for expansion in the value co-creation fit between customers and organisations was identified through value in use (reaction to customer complaints and feedback) as well as in MC value co-production through customer involvement. Customer sentiment expressed the interest to actively engage in co-production using MC initiatives for potential value creation. Complementarity in the level of fit between the value expectation and value realization between customers and organisations was examined using quantitative and qualitative datasets. With the study suggesting that the MC value potential can be actualised from various contributors including customers', organisations and the economy (Vargo & Lusch 2004; Hilton, et al., 2012).

The final chapter – eight presents the research summary, implications and recommendations, with a concise view of the findings and implications for retail organisations, research community and scholars alike. It is presented along with limitations of the study, suggested areas for future studies and reflexivity following the researcher's journey.

8.2.1. Discussions of research objectives and questions

The overall aim of the research was achieved with four major objectives as described below:

Objective 1 – to review the literature exposing the scope, main themes and theoretical perspective of MC adoption studies in the retail sector. Chapter one introduced MC within the Nigerian retail context (section 1.1.2), while chapter two identified the current state of MC research; (section 2.3) discussed the breadth of MC adoption studies; from 2010 to 2017, studies by region (Figure 2-2) studies by

research methodology and methods (Table 10-2) and the theories, frameworks and models applied within these studies (Table 10-3).

Objective 2 – to examine the MC adoption process, identifying factors influencing organisational adoption and identifying potential MC value outcomes from adopting MC applications. In chapter six, the three MC adoption phases from initiation, decision making to deploy were discussed (section 6.3.3). Antecedent factors influencing retailer’s adoption were presented (section 6.3.4). Findings following an examination of the value potential and value outcomes were presented (section 6.3.4 and 6.3.5), followed by a thematic discussion around the objective (section 6.4).

Objective 3 - Identify antecedent factors influencing customer MC adoption behaviour intentions within the Nigerian B2C retail context. Chapter five showed where factors including: (PB, PV, INN, TRUST) were identified as either significantly having a direct influence on MC adoption or not with factors including: (PC, PR, CI) identified as not significantly having a direct (or indirect) influence on customers MC adoption behaviour (Figure 5-7).

Objective 4 – develop an integrated conceptual framework as a holistic approach to MC adoption from both the business and consumer’s perspective. Chapter three highlighted the initial conceptual framework model (Figure 3-1) relevant to the Nigerian context. In chapter seven, the TCO model emerged based on the themes identified in applying a circular joint display (Figure 7-4) to the data.

The research generated questions all of which were answered at various stages spread across the thesis.

1. What are the determinants of Organisations MCA intention in the Nigerian B2C retail sector?
2. What are the potential drivers influencing perceived customer value and MC adoption intention and how significant are they in the Nigerian B2C retail sector?
3. To what extent can Nigerian retail organisation leverage MC to create customer value and positively impact organisational performance?

4. How can an integrated conceptual framework be developed as a holistic approach to explain MC adoption from both the business and consumer's perspectives?

Research Q1 was addressed in chapter six by conducting a qualitative data analysis and thematic analysis of the findings (section 6.3 and section 6.4).

Research Q2 was addressed in chapter five through a quantitative analysis of the latent and observed variables / constructs (PI, PE, PEOU, PU, PERS, PB, PC, PR, CI, Trust, PV and IA) using CFA to present the significance of the measures within the model and CB-SEM to demonstrate the relationships between the variables and constructs. The summary is presented in Table 5-8.

Research Q3 was addressed in chapter six through a quantitative analysis of the value outcomes grouped with three main themes: customer value outcomes, organisation performance and economic growth (section 6.3.6). The results were further synthesised across both customer and organisation perspective in chapter seven (section 7.2.4).

Research Q4 was addressed in chapter seven, by combining data from quantitative and qualitative sources and a JDA was employed to present a holistic organisation and customer adoption model. (Figure 7-4 and Table 7-6).

8.2.2. Major research findings

The studies suggest that MC is a vastly growing market with total global retail sales of \$1.385T. However, in Nigeria this only represents less than 1% of its retail sales despite a presence of one of the youngest populations in the world with 54% of the Nigerian population said to be less than 19 years in 2021 (Statista, 2021) and the existence of the Nigerian cash-less policy introduced by the Apex bank in Nigeria, CBN in 2012. Scholars also suggest that MC adoption studies in developing countries is still at a nascent stage. This thesis posits (i) that the greater the match between organisations assumed customer value and customer perceived value of MC adoption, the more likely customers' acceptance of their MC offering. (ii) organisation adoption of MC can create customer value and

enhance organisational performance and economic growth. Therefore, it is important that organisations, as part of their business model, investigate the antecedents to customers' and organisations' MC adoption intention behaviours to drive value outcomes. The adoption of MC innovation as part of the value proposition is important for retailers to create growth (Christensen, et al., 2016). It follows logically, that more needs to be done by mobile network providers, financial institutions and government to foster an enabling environment to drive MC adoption by customers and organisations alike in developing economies.

Evidence from findings show that perceived value is a significant and positive predictor of customers' MC adoption, at least within the Nigerian context. It is therefore important that organisations consider the conceptualisation of the TCO in order to influence customer value and to drive organisation performance and economic growth. Although the sacrifice attribute of cost and risk did not show significant influence in predicting customers' MC adoption, both hedonic and utilitarian benefits (i.e., perceived enjoyment, personalisation, PEOU and PU) were significant predictors of customer perceived value. Organisation's MC proposition should aim to deliver on those customer benefits.

Multi-level dyadic trust was a significant and positive predictor of not only customers' acceptance but organisation adoption behaviour. Meaning that Nigerian customers were more likely to adopt MC if they perceive it to be reliable and trustworthy. Lack of trust "fake" or grey market goods, failures associated with logistics and timely delivery, payment and transaction risks, scams, customer gullibility etc. emerged as a significant threat to MC adoption even in the organisation-side of the study. Also, organisations were more likely to trust its customers to make purchases based on pre-paid payment terms other than payment on delivery or credit terms. To mitigate trust issues the concept of payment on delivery was an integral part of the organisation policy even though, it is argued that reverse logistics also places a burden on the organisation. Identity verification, integrity checks and customer validation are still a huge challenge. With poor customer education, brand awareness suffers too. This

calls for media and MC publicity, plus visionary brand and relationship-building starting from the leadership level.

Level of customer involvement in the MC adoption process was examined through the lens of value co-creation and value in-use (Vargo & Lusch, 2004; Ranjan & Read, 2016). Surprisingly, the findings revealed CI not to be significant in customer MCA probably attributable to a non-confrontational cultural disposition and with MC being secondary to their lives. Similarly, organisations recognised CI merely as a passive and post-ante engagement in fostering MC adoption; thus fundamentally creating opportunities for expansion in the value co-creation fit between organisations and customers.

From the organisation perspectives, 22 variables across four main constructs (technology – organisation – environment – other factors) were identified as antecedent factors influencing Organisation MC adoption. These findings were categorized into four main themes. Overall, three value outcomes were identified that included customer value, organisation performance and the wider economic value.

The study revealed concordance in MC application adoption with customers' acceptance around social media commerce and organisations MC offering. Communication and marketing-based application providing that initial use and transaction-based application considered as emerging and “not there yet” in Nigeria. This growing trend in the use of social media commerce like WhatsApp and Facebook to offer customer support, and customer service offering business potential that can result in economic benefit.

The mixed-method analysis applied to the study allowed for further investigation of how MC adoption influences customer value perception and organisation value realisation. The convergent parallel method involving both quantitative and qualitative analysis conducted within the same timeframe and adaptation of a circular joint display provided both confirmatory results and in-depth understanding of the relationships identified within the framework, strengthened the validity of the

TCO model. As part of the value proposition (Teece, 2010; Osterwalder & Yves, 2010), the study demonstrated how value can be realised through the adoption of MC technology.

The findings revealed that customer value (such as customer satisfaction, WoM, convenience, access to variety of quality international and local products etc), will result in organisations value outcomes (such as organisation performance, stakeholder value, repeat customers and growth). Simultaneously, the opportunity to drive economic growth and the job creation potential through affiliate marketing, use of agents and representatives to reach target populations was identified. Finally, there is the opportunity to narrow the gap between the informal and formal markets with realisable tax advantages.

8.3. Research contributions and implications

8.3.1. Theoretical Implications and contributions

The following section aims to provide a concise summary of the main contribution to literature:

The research referenced up to date literature bringing together the extant work on MC adoption in retail and the current state of MC studies (section 2.3).

This study extends previous researches in the domain of technology adoption specifically within the MC sphere conducted in the developed and developing countries. It focused on coverage of number of mainstream MC literature including material from the Nigerian and sub-Sahara Africa context and attempts to bridge the research gap when it comes to coverage of MC in developing economies (chaptersChapter 1, Chapter 5,Chapter 6 and Chapter 7).

The study expanded on the VAM by introducing additional variables to the benefit and sacrifice of the perceived value, beyond just benefits and cost in examining customer MCA by adding innovativeness, customer involvement and perceived trust. With such an integrated model, it builds on the rather simplistic nature of the VAM which is based on variables from the original TAM, thus improving the flexibility and cohesiveness of the model. By adding constructs based on individual

characteristics (perceived innovativeness) co-creation construct (customer involvement) and trust-based constructs (perceived trust), the study used a comprehensive approach and presents a considerable improvement in value predictability and adoption intention of the proposed model (section 5.4 and Figure 5-7: Customer Value-based MC Adoption model Results).

The research narrows the gap on MC organisation-based adoption studies by providing an update to literature on the process of MC adoption and the antecedent factors influencing MC from an organisational perspective (sections 6.3.3 and 6.3.4).

This study expanded on TOE by identifying “other” factors impacting Organisational MC adoption. It highlights such antecedent factors such as trust, sensory enabled factor, perceived risk, security and privacy, PEOU etc. as well as identifying new themes within Organisation factors - (strategic policy alignment; and environmental factors) – such as how the ‘Nigerian factor’ influences and the role partnership can play to provide organisations with additional revenue streams and avenues to consider when redefining their business model (section 6.4 and Figure 6-8)

This convergent parallel method research approach expanded on the methodology and methods used in collecting and analysing data within the technology adoption domain. The study used a convergent mixed methods design by integrating qualitative and quantitative results to evaluate B2C MC adoption behaviour. It demonstrated a flex and practical way for researchers to collect and analyse data for academic purposes and for thoroughly addressing both the organisation adoption and consumer acceptance of MC technology (section 4.3 and Figure 4-1).

The presentation of a multi-level perspective brings a fresh and holistic approach to MC adoption from a B2C value-chain perspective. By so doing, the study has unpacked the MC adoption constructs and examined its value creation potential at its core by developing a circular joint display (Guetterman, 2019). Finally, the study developed a novel TCO framework for B2C adoption studies. It is hoped that

this innovative visual display and presentation will serve as a guide for researchers and students, and move the needle when it comes to discussions on creative ways to present mixed methods studies especially within the technology adoption domain (section 7.2 and Figure 7-4).

8.3.2. Practical contribution and recommendations

Nigeria is one of the developing economies forecasted to be largest mobile market in the world. The expectation is relevant for a shift from store-based retailers towards an omnichannel model, in which consumers become more comfortable with mobile-enabled shopping and cashless payment. An economic recovery and increased consumer acceptance of MC will be the main drivers of this, followed by access to quicker consumer broadband and 4G or 5G mobile internet. The growing number of Nigerian consumers switching from feature phones to smartphones presents a unique opportunity for retailers, practitioners, technology investors and institutional stakeholders. Retailers should seek opportunities to enhance their mobile operability and customer MC experience (section 6.3 and Table 6-3).

Retailers and governments alike need to collaborate with other stakeholders to create greater MC technology awareness and education (Pankomera & Greunen, 2019). To close the MC education, knowledge and skills gap (section 6.3 and Figure 6-8), Government needs to do more to collaborate with stakeholders including retailers to create awareness about MC technology and its benefits to the individual, retail sector and economy as a whole. Creating awareness encourages an enabling environment to foster greater trust in the MC application providers.

Legal and regulatory frameworks need to be set up in developing countries in Africa including Nigeria to protect and strengthen the B2C value chain and foster greater innovation. Many countries do not have proper regulation of MC transactions (Bosire & Ntale, 2018; Omonedo & Bocij, 2017). The Government needs to do more to protect the rights of customers and organisations in a digital economy. Education and effort through recognition bodies like the National Information Technology Development Agency (NITDA) can increase technology innovation, MC adoption and acceptance

potential, more so, if there are bodies to arbitrate on behalf of individuals and organisations (section 7.3.3). Technology standards need to be enforced to enhance the smooth data and information exchange. In addition, non-proprietary mobile solutions can take advantage of cost effective, open-source networks that can be shared across different landscapes (Bosire & Ntale, 2018). Nigerian Communications Commission (NCC) and further government incentives and policy is required to accelerate MC adoption by creating an environment to foster innovation in a model that prioritises the development of intellectual property over unfettered imitation. The findings also demonstrated the need for retailers and key stakeholders to demonstrate transparency, provide clear policy guidelines to improve customer confidence; managing product returns, payment policy, cyber security, data protection and legal consumer rights (section 6.3 and section 7.2.3).

Challenge still exists when it comes to addressing the rural-urban digital divide and the provisioning of infrastructure and network speeds typically only available in larger cities of Nigeria. The research has shown that more can be done when it comes to Mobile network and electric power infrastructure in fostering MC adoption (Winnie et al., 2014; Huang and Liu, 2009; Alfahl et al., 2012; Groß, 2015). Retailers should consider the development of functional mobile applications that have less strain on battery life for low and non-network areas (section 6.3.4).

To foster MC adoption, MC skills training and employee empowerment should be an integral part of organisation and employee learning (Padhi et al. 2014; Taylor, 2016) as opposed to reliance on foreign or outsourced teams. Retailers should be more flexible, agile and responsive to react to local customers MC requirements (section 6.4.4). Investment in technology hubs and knowledge centres (such as [CcHub](#), NG hub, [Leadpath](#) and [African start-up events](#)) that aims at providing seed funding, training of local expertise, similar to the approach embraced by HERA, should be encouraged.

Interaction is considered a source of value in itself (Ranjan and Read, 2016) therefore there is the need to encourage organisational alliances to harness the value derived from co-creation, actively engaging and seeking out customer interaction and involvement throughout the customer journey (section

7.3.4). Partnerships in the areas of finance, logistics, network and B2B retail can elevate MC adoption. As the benefits of partnering and forming alliances as part of the business model (Pena, et al., 2014; Osterwalder and Pigneur, 2010) was discussed, with evidence of forming partner networks shown to promote MC adoption (section 6.3.4 and Figure 6-8).

Retailers should therefore seek opportunities to reinvent themselves by evaluating customer pains and customer gains (section 7.3.2). Reimagining of business model and adoption of MC technology offers organisational value and could result in economic growth (Teece, 2010; Osterwalder and Pigneur, 2010). The study therefore conclude that organisations can offer experiential and emotional aspects of MC derived from the multisensory, personalised, emotive, and entertainment aspects of user experience (Babin et al., 1994; Holbrook, 1999). Practitioners and retailers can adopt a mobile-first mindset (section 6.3.4) to exploit the value attributes of MC (e.g., social media commerce) at reduced cost.

8.4. Research limitations

There are a number of limitations identified in the study. The data was only obtained from customers and firms operating mainly in Lagos and across Nigeria. This limits the generalisability of the findings to other countries, however, findings can be generalised to the extent of the population from which the sample was taken (Bryman, 2016; p. 193). Furthermore, the area in which the research was conducted is considered the economic hub, a high-brow area with access to more working class and central to technology development. Some survey data was collected online; and as part of the purposive sampling, organisations selected operated in multiple states or regions within Nigeria. Respondents from different regions were able to provide valuable organisational insights beyond Lagos.

Data was collected using both online and paper surveys. Basic analysis was performed using Microsoft Excel to understand the numbers collected by online (88: 22%) vs paper (304: 78%) and there was no difference so treated as one combined data set permitting generalisability.

The time-of-day data was collected could impact the participants responses. Interviews and surveys were planned based on the organisations availability and following customers completing shopping as they exit the malls. The warm climate and the general attitude at the time may have had a negligible effect on an individual's mood and responses to survey questions, but this was not apparent. The case study research was also conducted at a point in time, with data collected from April – May 2019 (pre-pandemic). This contradicts the scholarly view that case studies frequently included a longitudinal element (Bryman, 2016, pp 64-65). However, this creates opportunities for further longitudinal studies in a post-pandemic environment. Also, further studies can examine consumers' continual usage intention, and compare the results with the intention to adopt MC.

The study provided a comprehensive MC adoption from customer and organisation perspectives by including various adoption factors, future studies can include variables not included in this study, e.g., subjective norm.

The joint display also identified some limitation in the way mixed methods data were collected across both quantitative and qualitative data sets. According to Feters et al., (2013), the integration of data via a theory-based joint display results in concordance, discordance, expansion and complementarity (refer to Figure 7-4). Where concordance brought more credibility to the study, data discordance between non-significant results from the quantitative analysis and positive results from the qualitative analysis was identified. This shed light on data, with the need to re-word the number of items linked to cost and risk variables, presenting better research question clarity. Results also identified areas of expansion that may lead to future research.

8.5. Future research direction

Current findings suggest that the notion of value is strongly linked to adoption intention that could result in customer value outcomes, organisation performance and overall economic growth. New research directions are suggested as well as possible line of enquiry throughout the work. To improve the generalisability of the value-based multilevel TOC framework, further research to extend upon the

findings of this study is needed. Further research might include investigations of organisation-based adoption studies; including the extension of VAM drivers (Kim, et al., 2007) in organisation studies. Organisations are in a position to capture, create and deliver value through adoption of MC innovation as part of their business model (Osterwalder and Pigneur, 2010; Dubosson-Torbay et al. 2002).

Future work can focus on conducting a multi-region, multi-country comparison study on MC adoption. This could be as a comparative cross-cultural study that explores SN from the TPB influenced by social pressure, to adopt or not to adopt MC? These could be through using Hofstede (2010) six dimensions of culture (power distance index; individualism vs collectivism; masculinity vs femininity; uncertainty avoidance index; long term vs short term orientation; indulgence vs restraint) to further examine adoption intentions across similar cultural environment or economic geographies. Similarly, comparisons could be made between developed and developing economies.

Furthermore, work can focus on extending the literature in areas of MC and value co-creation specifically co-production (with consideration for knowledge, equity and interaction) and value in use (with consideration for experience, personalization and relationship). This is to satisfy the gap identified by retailers in their application of passive rather than active co-creative ways in co-innovating with their customers.

This study could be seen as the completion of first phase of the design which involved collection, analysis and merging of qualitative and qualitative data in a multi-case study. It aims to build on theory and problem formalization within the Design Science Research (DSR). Further longitudinal studies are an area of enquiry that seeks to apply MC intervention as part of DSR⁴² methodology applied within case studies (Rothenberger, 2003; Peffers et al. 2007) could be considered. The next phase could seek to develop innovative ideas and bring into being DSR outputs in the form of MC intervention based on the TCO value-based model. This will follow the DSR cycle overtime and will involve an iterative

⁴² DSR involves the construction of a wide range of socio-technical artifacts such as decision support systems, modelling tools, governance strategies, methods for IS evaluation, and IS change interventions **Invalid source specified..**

process between the objectives, design and artifact evaluation within the same case study organisations.

The significance of risk factor influencing MC adoption intention could be an area for further research consideration as results from the circular joint display MMR was discrepant. When evaluated against quantitative and qualitative data sets, the results from the customer perspective were as not significant and attributed to the demographic sample. The impacts of age, gender, education etc. could therefore be examined further in predicting MC adoption determinants (Chong, 2013; Liébana-Cabanillas et al., 2014; Osakwe and Okeke, 2016) but this was not the objective of the study, so this was not explored further.

In considering the adoption of omnichannel offering as part of MC intervention that can be measured as part of a longitudinal study, the study can be further extended, by applying elements of the TCO results to the original business model canvas defined across the 13 case study organisations. A reinvention of the organisation existing MC business model (Osterwalder, et al., 2014).

Another research direction could focus on the informal market. This will invariably provide further empirical evidence by building on the literature review that examined the opportunities, benefits, barriers, and adoption factors underlying MC in developing countries in Africa (Pankomera & Greunen, 2019). A comparison of the results from the formal and informal retail sector will identify potential differences between their patterns of MC adoption. a large proportion of Nigerian based SMEs offer smaller, specialist service, provides an opportunity to identify the potential for adopting MC within such enterprises.

8.6. Learning, reflection and reflexivity

Reflexivity as part of critical reasoning to the research is broken into planning the research (chapter 1-4); research methodology and data collection (chapter 5); data analysis and write-up (chapter 6-9), followed by the researcher's reflective pragmatist approach to problem-solving and application of learning to practice.

8.6.1. Reflexivity

Various scholars suggest that the researcher is the primary “instrument” of data collection and analysis, therefore reflexivity is deemed essential (Watt, 2007; Russell & Kelly, 2002; Stake, 1995). It is important to consider reflexivity when pursuing a qualitative line of inquiry that could be subjective in understanding the external world (Easterby-smith et al.2015; pp181-182). Easterby-smith emphasises the need for researchers to consider their role and the way it impacts the research process.

The researcher adopts a philosophical self-reflection. This is against a more methodological reflective self-criticism attune to critical realism and social constructionism ontology and epistemological grounding (McLachlan & Garcia, 2015).

Planning my research – Although this researcher brings over 15 years practical experience as a Finance Solutions Architect and Consultant, I was looking at applying ‘best practice’ using innovative solutions to meet organisations requirements. It took a while to have clarity in terms of defining the research purpose. Using a research journal enabled the researcher to work through a number of reflective learnings (Cameron & Price, 2009, pp. 558-559), in identifying her research questions, explaining the personal, practical and research purpose of the study.

I wanted to understand if the phenomenon of MC technology innovation is a fad, buzz word? My professional bias already tells me it is not, but a reality in which businesses and enterprise in the global economy are supposed to be reaping the benefits. However, after attending the lecture on mixed methods, it has made me to question my ontological and epistemological view to develop well-grounded research. Concepts that in the past couple of weeks, I have found difficult to grasp.

Journal entry 17th March 2017

Researchers need to be aware of their personal reasons for carrying out a study. Subjective motives could impact the trustworthiness of a project and risk creating a flawed study (Watt, 2007).

Throughout this phase, I focused on steps within my research plan that would crystalize in my mind, what it was about MC innovation that was worth researching:

Table 8-1: Research plan of the researcher

Date	Event	Purpose	What did I learn?	How will I use it?
20/3/2017	Buy the Creswell book 'A concise introduction to mixed methods research'	Understand how MMR can be applied and the approach.	Thanks to Creswell for the clear and simple explanation of MMR	Be more critical in identifying how scholars have applied MMR in MC studies and identify how best it applies.
24/6/2017	Attend the lecture on research methods	Provided more clarity on what is my research, why do I want to do the research?	Had not realised how complex the methodological argument can get.	Enabled me to refine my research aims and objectives.
22/02/2017	Read papers by Kitchenham (2004 & 2007)	How to perform a systematic literature review	Critical review of the literature – why was I reading it, were the authors convincing? What were the arguments, what did I learn?	Helped me understand systematically what the literature was saying about the topic.

This followed months of inquiry to gain further research clarity as portrayed in my journal.

Panic attack! How can I fit in case study with mixed methods and design science research? All the literature I am reading and technical issues seem to be making it more complicated.

3rd July 2017

Seems I have not achieved much. I am still not clear on my research method. I have decided to invest in books that could explain if case study is a method or design. Did not realise these research books were that expensive!

10th July 2017

By taking a step back and realising that I had deep interest, but no prior or pre-existing knowledge of certain topics, I wondered if my bias was founded and if there were truly any benefits in exploring the MC technology adoption process. My literature review demonstrated that the MC adoption process from multiple social perspective and across different regions had been under studied. There was a gap in knowledge regarding multi-level MC adoption from the perspective of the individuals and

organisations. Writing and reflecting on my learning enabled me to clarify my research purpose and objectively separate my motivation from a mere passion for pursuing this topic.

Having greater clarity on my research aims and objectives, it logically flowed towards the design of a conceptual framework as applied in the research. The conceptual framework and research design which requires much thought and reflection progressed over time to the final submission stage. The application of conceptual framework to the research question and continuous review of literature, clarified why value was so important in MC adoption studies.

One major challenge faced was access to the organisations. According to Easterby-smith et al. (2015), it is difficult to gain access to companies out of the blue. Most researchers seriously underestimate the amount of time and patience that can be required to gain that initial access.

Following ethics approval, I followed the research protocol to identify organisations through purposive sampling. I sent e-mails without getting a response. It was challenging calling organisations in Nigeria from overseas to speak to a contact. At one point, I was told by my supervisory team to consider multiple case study organisations, when I was struggling to gain access to the four initially proposed – I felt like giving up.

13th October, 2018

Getting Nigerian organisations to respond to request to participate in research study is still a challenge. I had to postpone my field trip planned in November 2018. Discussed the two options on research focus: a) carry on with topic – MC organisation adoption & Consumer acceptance in Nigeria b) consider a work-related topic, closer to where I live mobile application adoption & employee acceptance in UK organisations.

15th February 2019

With some reflection, I questioned my motivation to continue with the topic of inquiry though my personal background and experience of living in Nigeria provided a good understanding of the people, organisations and their culture. On the advice of my supervisor, I was able to travel and speak directly to these executives through a combination of purposive and convenience sampling. A key lesson learnt was that Nigerians tend to engage better face-to-face in research, once the rapport and trust is

formed or through professional associations - 'snowball' sampling. By keeping journal entries, I was able to engage with stakeholders and grow my own awareness of some of the potential risks inherent in conducting research.

When the time came to carry out the actual field study, the journal enabled me to reflect on the outcomes of the pilot study and how crucial realism (McLachlan & Garcia, 2015) played in the interviewing process and what I needed to consider for the semi-structured interviews

The insight from the lecture on 'Research philosophy in practice: A qualitative perspective' was invaluable. I don't know how much this has been a success but I will say is that it felt quite natural and although sometimes rigid; food for thought for my research questions. I even applied the approach of Ontological "what's" and epistemological "how's" to the pilot study interview.

March 2019

Using this reflective approach, I avoided (or rephrased) leading questions from the interview protocol (see appendix 10.3) that could influence the research outcome. For example: (i) Do you think there is a significant opportunity for mobile commerce applications to create competitive advantage in Nigeria? If so, which areas? (ii) How is the perceived value of Mobile Commerce impacting your customer adoption / retention? The notion of reflection-in-action (Smith, 2001, 2011, 2021) was applied in-situ of the interview.

Keeping a field notes journal helped me to remain flexible and focused on the research. I had a better appreciation of the power relationship and ethical consideration when collecting the data. I was entirely reliant on participants' cooperation as the researcher is dependent on a participants' willingness to take part in the research and to share their knowledge of the research subject (Karnieli-Miller, et al., 2009).

Got to the office around 2pm. It looked like a residential estate from the façade. Upon speaking to one of the staff, we were told to wait in the security room. Sat outside for nearly 45minutes without anyone speaking to us. After further questioning why we were left waiting, the staff suggested that the senior

executive was busy and unable to see us and we had missed our time of appointment. I was quite upset and questioned the role the company participants have in my research. Upon telling my cousin that we had to go, he tried to find out what was happening while I went to wait in the taxi. One of the staff then rushed out and tapped on our taxi, saying we could now come in. My cousin and I were finally seated in front of the HR director (Athena) and we went on to have a good interview. 30 April 2019

Ethical considerations influenced the researcher's disposition. My attitude had to change to be more patient and professional, demonstrating understanding and respect for their time. Lincoln & Guba (1985) underline the need to strike a balance between developing friendship with participants and maintaining the distance calls for professional judgment. During the collection of data, the interviewer aims at creating a welcoming, non-threatening environment in which the interviewees are willing to share their experiences (Karnieli-Miller, et al., 2009). Another learning from my journal entry, reflects on the need for researchers to adapt and reflect-in-action⁴³:

Went to Computer Village in Ikeja to speak to retail organisations that operate an online presence. Unfortunately, could not speak to the regional Manager following contact via Facebook messenger as it was a public holiday. I was told to come back the following day. Proceeded to complete the customer survey with the customers whom patronise phone, electronic and other gadget retailers. With temperatures of about 34 °C, it was difficult to speak to participants in that heat, so I decided to enter the retail stores and speak to the store manager asking if we could speak to their customers. We were able to stay inside the air-conditioned stores. At the end of the day, we managed to interview about 23 respondents on the day. 1st May 2019

Avoiding the disappointment of a cancelled appointment get in the way, I was able to make the most of the day and gather other data while in the field.

⁴³ Reflection-in-action is brief and happens in the moment, while reflection -on-action is reflection at the beginning or end of the day or research project, that forms part of reflection in learning (Cameron & Price, 2009, pp. 554-557)

Data analysing and write-up: Keeping a journal entry helped me to make sense of the research. involves organising what has been seen, heard, and read so that sense can be made of what is learned (Watt, 2007).

Interesting reading customers' views and comments. themes for some of qualitative questions are emerging: What are favourable outcomes with MC (customer satisfaction; quality goods; time saved). what are the key constraints of MC interaction? (Data costs; data quality and data coverage; scams; products delivered are not representative of what is advertised; lack of knowledge). need to study the literature further on the DOI theory.

27 May 2019

Patton (2002) suggests that the final destination remains unique for each inquirer, known only to them when they arrive. Through the research analysis phase, a key area of reflection was how new research can be offered.

Some of the challenges faced in transcribing included noise, intonation and accent. This affected the quality of the recording. To counter this, I had to use sound enhancing software – Audacity to improve the audio quality and take short breaks. My suggestions to research students are to ensure that interviews are conducted in a quiet and distraction free environment, devoid of any noise.

25 May 2020

After reaching the final stage to analyse the data with my notes, I had transcribed data and quantitative data, I was at a loss as to what to do next to ensure data validity and reliability. Reading the article from Saldana (2013) provided a systematic approach to conducting thematic analysis. I was able to identify existing themes arising from theory – TOE, with the view that pre-established sociological theories can inform, if not drive, the initial coding process itself (Layder; 1998). I kept on questioning the quality of the research for contributions to literature and practice.

8.6.2. Reflection

Reflection is considered as an essential component of professional learning from experience through observation, mental replay and questioning (Cameron & Price, 2009).

I have found reflection in action very useful in my professional practice. As a consultant, I am used to taking consulting notes following client engagements. However, by writing things down, I have begun to appreciate journaling. I have been able to quickly pivot and re-direct questions of inquiry by simply listening more and writing down salient notes.

In professional practice, I have been able to review my learning points and identify what went well, and areas for improvement. I have learnt to be more questioning and critical of reviews or reports provided by my team and during the interview process with clients. For example, in response to RFPs⁴⁴, I have started to ask “the so what” question, what data supports our point of view? Do validated case studies that support the approach presented to the client exist?

8.6.3. Lessons learnt – technical and practical challenges to research

Maintaining a journal helped to consolidate my learning, capture my thoughts and finish the study.

I have gained a deeper understanding of the nature of the mixed method research, the process and a strong appreciation of the vital role of reflexivity and reflection in a research project.

Having the resources and access to the right tools enabled me to conduct research effectively

As a research student, I have found technical glitches and dealing with expired software really challenging and frustrating in making progress at pace, with my research I decided to save myself the trouble and order the student version 26 off on the hub for £85.00 plus VAT.

January 2020

The importance of data storage and multiple backups of your research cannot be over emphasised.

One of the darkest times of my research was around Mid-May 2020, when my research almost came close to a halt. My trusty computer gave me the BSOD⁴⁵ after I shut it down on one

⁴⁴ RFPs – Request for Proposal where IT vendors respond to clients’ tender requests as part of a procurement process.

⁴⁵ BSOD – Blue screen of Death, typically associated with error screen on windows computer systems

faithful night and making some updates. Upon boot up, it requested for a security code., I thought that this will be relatively straight forward to contact office for IT support, and technical assistance. I provided the make and model of my laptop, but was in a critical stage of the research following a supervisory meeting online (during the outbreak of COVID-19 and national lockdown. I completely panicked because NVivo that held transcription data not a cloud version. Fortunately, Otter was accessible via the online link and I was able to recover the data from my backup drive as advised, however it was least a month old. May 2020

Combining full-time work and research project is a massive commitment. Watt (2007) in their reflexivity diary stated that “carrying out a qualitative inquiry demands a major commitment of time and energy”.

This is a challenging time, working from home now means getting to grips with the “new normal” and significantly longer days. I am still providing go-live support till the end of March at work and it really gives me little or no time to focus on my research. April 2020

In this time, I am at a point where I have recent data on my research and able to kick-start the next stage which is completing my qualitative analysis and write-up. 31st August 2020

In my experience, the journal entry reminded me of the challenges of research. I was able to remind myself of the purpose of why I embarked on the study and how far I had come.

8.7. Summary

This chapter has presented a view of the research conducted on the factors that influence the successful adoption of MC by organisations and acceptance by consumers through mobile technology in a developing country, Nigeria. The chapter provided a summary of the major findings of this research, research contributions, theoretical and practical implications. The limitations and future research directions from the study was presented. Finally, the researcher’s reflection and reflexivity in learning has been discussed to provide insight for students interested in mixed methods research.

Chapter 9: References

- Abdullah, H. H., Bohari, A. M., Warokka, A. & Abdussalam, A., 2012. Strategic Role of Mobile Commerce (M-Commerce) Payment System:: Establishing New Competitive Advantage. *Journal of Electronic Banking Systems*, Volume 2012.
- Adams, L., Burkholder, E. & Hamilton, K., 2015. *Micro-Moments: Your Guide to Winning the Shift to Mobile*, United States: Google.
- Agarwal, R. & Prasad, J., 1998. A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, 9(2), p. :204–215.
- Aguila-Obra, A. R. D. & Padilla-Mele´ndez, A., 2006. Organizational factors affecting Internet technology adoption. *Internet Research*, 16(1), pp. 94-110.
- Agwu, E. M. & Murray, P. J., 2015. Empirical Study of Barriers to Electronic Commerce Adoption by Small and Medium Scale Businesses in Nigeria. *International Journal of Innovation in the Digital Economy*, 6(2), pp. 1-19.
- Akasike, C. & Folarin, S., 2017. *Jumia delivery man killed by customers over iPhones*. [Online] Available at: <https://punchng.com/jumia-delivery-man-killed-by-customers-over-iphones/#:~:text=A%20delivery%20man%20with%20an,he%20was%20attacked%20and%20killed.> [Accessed 23 April 2029].
- Aldás-Manzano, J., Ruiz-Mafé, C. & Sanz-BlaS, S., 2009. Exploring individual personality factors as drivers of M-shopping acceptance. *Industrial Management & Data Systems*, 109(6), pp. 739-757.
- Alfahl, H., Sanzogni, L. & Houghton, L., 2012. Mobile Commerce adoption in organizations: a literature review and future research direction. *Journal of Electronic Commerce in Organizations*, 10(2).
- Babin, B. J., Darden, . W. R. & Griffin, M., 1994. Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, 20(4), p. 644–656.
- Baker, M., 2020. *Shopify Tries On a New App*, USA: Gartner.
- Ballantyne, D. & Varey, R., 2008. The service-dominant logic and the future of marketing. *Journal of the Academy of Marketing Science*, 36(1), p. 11–14.
- Barnes, C., Blake, H. & Pinder, D., 2009. *Creating and Delivering Your Value Proposition : Managing Customer Experience for Profit*. London and Philadelphia: Kogan Page, Limited.
- Bazeley, P., 2012. Integrative analysis strategies for mixed data sources. *American Behavioral Scientist*, 56(6), pp. 814-828.
- Bentler, P., 1990. Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), pp. 238-246.
- Bertille Guitton, 2016. *African mobile trends*, Nigeria: Jumia.com.
- Blaise, R., Halloran, M. & Muchnick, M., 2018. *Journal of Internet Commerce*, 17(2), pp. 96-114.
- Blochlinger, M., 2012. *Mobile Payment Systems*, Zürich, Switzerland: Communication Systems Group (CSG).

- Bolat, E., Kooli, K. & Wright, L. . T., 2016. Businesses and mobile social media capability. *Journal of Business & Industrial Marketing*, 31(8), p. 971–981.
- Bolat, E., Kooli, K. & Wright, L. T., 2016. Businesses and mobile social media capability. *Journal of Business & Industrial Marketing*, 31(8), pp. 971-981.
- Braun, V. & Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101.
- Bryman, A., 2016. *Social Research methods*. 5th Edition ed. Oxford: Oxford University Press.
- Bryman, A., 2016. *Social Research Methods*. Oxford: Oxford University Press.
- BusinessDay Research and Intelligence, 2015. *The Nigerian Retail Report 2014/2015*, Lagos: BRIU.
- Bustamante, C., 2019. TPACK and Teachers of Spanish: Development of a Theory-Based Joint Display in a Mixed Methods Research Case Study. *Journal of Mixed Methods Research*, 13(2), p. 163–17.
- Cameron, S. & Price, D., 2009. *Business Research Methods: A practical approach*. London: Chartered Institute of Personnel and Development.
- CBN, 2021. *Cash-less Nigeria*. [Online]
Available at: <https://www.cbn.gov.ng/cashless/> [Accessed 11 April 2021].
- Cerny, B. A. & Kaiser, H. F., 1977. A Study Of A Measure Of Sampling Adequacy For Factor-Analytic Correlation Matrices. *Multivariate Behavioral Research*, 12(1), pp. 143 - 147.
- Chiu, C.-Y., Chen, S. & Chen, C.-L., 2017. An Integrated Perspective of TOE Framework and Innovation Diffusion in Broadband Mobile Applications Adoption by Enterprises. *International Journal of Management, Economics and Social Sciences*, 6(1), p. 14 – 39..
- Choi, J. et al., 2008. Customer satisfaction factors of mobile commerce in Korea. *Internet Research*, 18(3), pp. 313-335.
- Chong, A. Y.-L., 2013. A two-staged SEM-neural network approach for understanding and predicting the determinants of m-commerce adoption. *Expert Systems with Applications*, 40(4), pp. 1240-1247.
- Choudhury, V. & Karahanna, . E., 2008. The relative advantage of electronic channels: A multidimensional view. *MIS Quarterly*, 32(1), p. 179–200.
- Christensen, C. M., Bartman, T. & Bever, D. v., 2016. The hard truth about business model innovation.
- Chua , P. Y. et al., 2018. Elucidating social networking apps decisions: Performance expectancy, effort expectancy and social influence. *Nankai Business Review International*, 9(2), pp. 118-140.
- Cobbs, L. M., Mejia, C., Ozturk, A. B. & Wang, Y., 2016. A technology adoption and implementation process in an independent hotel chain. *International Journal of Hospitality Management*, Volume 57, pp. 93 -105.
- Cresswell, J. W., 2015. *A concise Introduction to Mixed Methods Research*. London: Sage Publishers.
- Creswell, J. W. & Plano Clark, V. L., 2018. *Designing and conducting mixed methods research*. 3rd ed. Los Angeles, CA: Sage..

- Dai, H. & Palvia, P. C., 2009. Mobile Commerce Adoption in China and the United States: A Cross-Cultural Study. *The DATA BASE for Advances in Information Systems*, 40(4), pp. 43-61.
- Damanpour, F., 1991. Organizational innovation: a meta-analysis of effects of determinants and moderators. *Acad Manage J*, Volume 34, pp. 555-590.
- Dash, G. & Paul, J., 2021. CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting & Social Change*, 173(1).
- Davidson, E., 2019. The Menace of Fulani Herdsmen Attack and Its Effects on the Socio-Economic Development of Nigeria. *SSRN*, Volume 1, pp. 1-7.
- Davis, F. ..., Bagozzi, R. P. & Warshaw, P. R., 1989. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), pp. 982-1003.
- Davis, F. D., 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems*, 13(3), pp. 319-340.
- Del, A. R., Aguila-Obra & Padilla-Mele´ndez, A., 2006. Organizational factors affecting Internet technology adoption. *Internet Research*, 16(1), pp. 94 -110.
- Demir, S., Kaynak, R. & Demir, K. A., 2015. Usage level and future intent of use of quick response (QR) codes for mobile marketing among college students in Turkey. *Procedia - Social and Behavioral Sciences*, 181(1), pp. 405-413.
- Devaraj, S., Krajewski, L. & Wei, J., 2007. Impact of eBusiness technologies on operational performance: the role of production information integration in the supply chain. *Journal of Operations Management*, 25(6), pp. 1199 - 1216.
- Easterby-Smith, M., Thorpe, R. & Jackson, P. R., 2015. *Management and Business Research*. 5th ed. London: Sage Publication.
- Ejemeyovwi, J. O. & Osabuohien, E. S., 2020. Investigating the relevance of mobile technology adoption on inclusive growth in West Africa. *CONTEMPORARY SOCIAL SCIENCE*, 15(1), p. 48–61.
- Euromonitor International, 2020. *Apparel and Footwear Specialist Retailers in Nigeria*, s.l.: Passport.
- Euromonitor International, 2020. *Health and Beauty Retailers in Nigeria*, s.l.: Passport.
- Euromonitor International, 2020. *Mobile E-Commerce in Nigeria*, s.l.: Passport.
- Euromonitor International, 2020. *Supermarkets in Nigeria*, s.l.: Passport.
- Fagerberg, J. & Verspagen, B., 2002. Technology-gaps, innovation-diffusion and transformation: an evolutionary interpretation. *Research Policy*, Volume 31, p. 1291–1304.
- Fetters, M. D., 2020. *The Mixed Methods Research Workbook: Activities for designing, implementing and publishing projects*. Thousand Oaks, California: Sage Publications Inc.
- Fetters, M. D., Curry, L. A. & Creswell, J. W., 2013. Achieving integration in mixed methods designs- principles and practices.. *Health Serv Res*, 48(6), pp. 2134-2156.
- Field, A., 2017. *Discovering Statistics Using IBM SPSS Statistics*. 5th Edition ed. London: SAGE Edge.

Frambach, R. T. & Schillewaert, N., 2002. Organizational innovation adoption A multi-level framework of determinants and opportunities for future research. *Journal of Business Research*, Volume 55, p. 163 – 176.

Garvin, R., 2019. *Awario*. [Online]

Available at: <https://awario.com/blog/w-social-networks-influence-74-of-shoppers-for-their-purchasing-decisions-today/> [Accessed 24 April 2021].

George, D. & Mallery, P., 2003. *SPSS for Windows step by step: A simple guide and reference*. 11.0 update, 4th Edition ed. Boston: Allyn & Bacon.

Gliem, J. A. & Gliem, R. R., 2003. Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. *Midwest Research to Practice Conference*, pp. 82-88.

Goodhue, D., 1995. Understanding user evaluations of information systems. *Management Science*, 41 (12), pp. 1827-1844.

Goodhue, D. & Thompson, R., June 1995. Task-technology fit and individual performance. *MIS Quarterly*, 19, 2, pp. 213-236.

Goyal, S., Sergi, B. S. & Esposito, M., 2017. Literature review of emerging trends and future directions of e-commerce in global business landscape. *World Review of Entrepreneurship, Management and Sust. Development*, Volume 1, pp. 7-23.

GSMA, 2019. *The Mobile Economy: West Africa*, s.l.: GSM Association.

GSMA, 2020. *The Mobile Economy Sub-Sahara Africa 2020*, s.l.: GSM Association.

GSMA, 2020. *The Mobile Economy: Global 2020*, s.l.: GSM Association.

Guetterman, T. C., 2019. *Joint Displays to Facilitate Integration of Qualitative and Quantitative Research*, s.l.: MMIRA and IIQM Webinar.

Hair, J., Anderson, R., R.L, T. & Black, W., 1998. *Multivariate Data Analysis*. 5th edition ed. s.l.:Prentice-Hall International, Inc.

Hartmut, H., Xiaojun, Z. & Viswanath, V., 2015. An espoused cultural perspective to understand continued intention to use mobile applications: a four-country study of mobile social media application usability. *EUROPEAN JOURNAL OF INFORMATION SYSTEMS*, 24(3), pp. 337-359.

Helpman, E., 1993. Innovation, Imitation, and Intellectual Property Rights. *Econometrica*, 61(6), pp. 1247-1280.

Hillman, S. & Neustaedter, C., 2017. Trust and mobile commerce in North America. *Computers in Human Behavior*, Volume 70, pp. 10-21.

Hilton, T., Hughes, T. & Chalcraft, D., 2012. Service co-creation and value realisation. *Journal of Marketing Management*, 28(13-14), p. 1504–1519.

Hofstede, G., 2011. Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, 2(1), pp. 1-26.

Holbrook, M., 1996. Customer Value — A Framework For Analysis and Research. *Advances in Consumer Research*, Volume 23, pp. 138-141.

- Hooper, D., Coughlan, J. & Mullen, M. R., 2008. Structural Equation Modelling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, 6(1), pp. 53-60.
- Hua, D. & Yan, C., 2015. Effects of Exchange Benefits, Security Concerns and Situational Privacy Concerns on Mobile Commerce Adoption. *Journal Of International Technology & Information Management*, 24(3), pp. 41-56.
- Hu, L. T. & Bentler, P. M., 1999. Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation modelling, a multidisciplinary journal*, 6(1), pp. 1-55.
- IMF, 2021. *International Monetary Fund*. [Online]
Available at: <https://www.imf.org/en/Countries/NGA>
[Accessed 2 May 2021].
- Jayawardhena, C., Kuckertz, A., Karjaluoto, H. & Kautonen, T., 2009. Antecedents to permission based mobile marketing: an initial examination. *European Journal of Marketing*, 43(3/4), pp. 473-499.
- Jones, K., 1996. Trust as an Affective Attitude. *The University of Chicago Press*, 107(1), pp. 4-25.
- Joreskog, K. & Sorbom, D., 1993. *LISREL 8: Structural Equation Modeling with the SIMPLIS command language*. Chicago, US: Science Software International.
- Karnieli-Miller, O., Strier, R. & Pessach, L., 2009. Power Relations in Qualitative Research. *Qualitative Health Research*, 19(2), pp. 279-289.
- Kenney, M. & Zysman, J., 2016. The Rise of the Platform Economy. *Issues in Science and Technology*, pp. 61-69.
- Keong, W. E. Y., 2016. *The Determinants of Mobile Shopping Mall Apps Adoption Intention in Malaysia: An Empirical Investigation*. Japan, ICCSE.
- Keong, W. E. Y., 2016. *The Determinants of Mobile Shopping Mall Apps Adoption Intention in Malaysia: An Empirical Investigation*. Japan, Computer Science & Education (ICCSE).
- Khalifa, M. & Shen, K. N., 2008. Explaining the adoption of transactional B2C mobile commerce. *Journal of Enterprise Information Management*, 21(2), pp. 110-124.
- Kim, D. J., 2014. A Study of the Multilevel and Dynamic Nature of Trust in E-Commerce from a Cross-Stage Perspective. *International Journal of Electronic Commerce*, 19(1), p. 11-64.
- Kim, H.-W., Chan, H. C. & Gupta, S., 2007. Value-based Adoption of Mobile Internet: An empirical investigation. *Decision Support Systems*, Volume 43, pp. 111-126.
- Kim, H.-W., Hock Chuan, C. & Sumeet, G., 2007. Value-based Adoption of Mobile Internet: An empirical investigation. *Decision Support Systems*, pp. 111-126.
- Kitchenham, B., 2004. *Procedures for Performing Systematic Reviews*, s.l.: Software Engineering Group, NICTA Technical Report..
- Klein, K. J. & Kozlowski, S. W. J., 2000. A Multilevel Approach to Theory and Research in Organisations. In: *Multilevel Theory, Research, and Methods in Organizations. Foundations, Extensions and New Directions*. San Fransisco: JOSSEY-BASS, pp. 4 -90.

- Klein, K. J., Tosi, H. & Cannella, J. A. A., 1999. Introduction to Special Topic Forum: Multilevel Theory Building: Benefits, Barriers, and New Developments. *The Academy of Management Review*, 24(2), pp. 243-248.
- Ko, E., Kim, F. & Lee, E., 2009. Modeling consumer adoption of mobile shopping for fashion products in Korea. *Psychology & Marketing*, 26(7), pp. 669-687.
- Köster, A., Matt, C. & Hess, T., 2016. Carefully choose your (payment) partner: How payment provider reputation influences m-commerce transactions. *Electronic Commerce Research and Applications*, Volume 15, p. 26–37.
- Lee, T. & Jun, J., 2007. Contextual perceived value?: Investigating the role of contextual marketing for customer relationship management in a mobile commerce context. *Business Process Management Journal*, 13(6), pp. 798-814.
- Liébana-Cabanillas, F., Marinković, V. & Kalinić, Z., 2017. A SEM-neural network approach for predicting antecedents of m-commerce acceptance. *International Journal of Information Management*, 37(2), pp. 14-24,.
- Li, F., Pienkowski, D., Moorsel, A. v. & Smith, C., 2012. A Holistic Framework for Trust in Online Transactions. *International Journal of Management Reviews*, 14(1), p. 85–103.
- Lindič, J. & Silva, C. M. d., 2011. Value proposition as a catalyst for a customer focused innovation. *Management Decision*, 49(10), pp. 1694-1708,.
- Lin, H.-H. & Wang, Y.-S., 2006. An examination of the determinants of customer loyalty in mobile commerce contexts. *Information & Management*, 43(3), pp. 271-282.
- Lin, K.-Y. & Lu, H.-P., 2015. Predicting mobile social network acceptance based on mobile value and social influence. *Internet Research*, 25(1), pp. 107-130.
- Li, S., Glass, R. & Records, H., 2008. The Influence of Gender on New Technology Adoption and Use-Mobile Commerce. *Journal of Internet Commerce*, 7(2), pp. 270-289.
- Liu, F., Zhao, X., Chau, P. Y. & Tang, Q., 2015. Roles of perceived value and individual differences in the acceptance of mobile coupon applications. *Internet Research*, 25(3), pp. 471-495.
- Luhman, J. T. & Cunliffe, A. L., 2013. *Technology and Organization Structure, Key Concepts in Organization Theory*. s.l.:SAGE Publications Ltd.
- Lu, J., 2014. Are personal innovativeness and social influence critical to continue with mobile commerce?. *Internet Research*, 24(2), pp. 134-159.
- Lu, J., Yao, J. E. & Yu, C.-S., 2005. Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. *Strategic Information System*, Volume 14, pp. 245-268.
- Luo, X., 2002. Trust Production and privacy concerns on the internet - a framework based on relationship marketing and social exchange theory. *Industrial Marketing Management*, Volume 31, pp. 111-118.
- Madan, K. & Yadav, R., 2016. Behavioural intention to adopt mobile wallet: a developing country perspective. *Journal of Indian Business Research*, 8(3), pp. 227-244.

- Maduku, D., Mpinganjira, M. & Duh, H., 2016. Understanding mobile marketing adoption intention by South African SMEs: A multi-perspective framework. *International Journal Of Information Management*, 36(5), pp. 711 - 723.
- Mahatanankoon, P. & Vila-Ruiz, J., 2007. Why Won't Consumers Adopt M-Commerce? An Exploratory Study. *Journal of Internet Commerce*, 6(4), pp. 113-128.
- Mahatanankoon, P., Wen, H. & Lim, B., 2005. Consumer-based m-commerce: exploring consumer perception of mobile applications. *Computer Standards & Interfaces Vol. 27 No. 4,,* pp. 347-357.
- Marinkovic, V. & Kalinic, Z., 2017. ntecedents of customer satisfaction in mobile commerce: Exploring the moderating effect of customization. *Onkine Information Review*, 41(2), pp. 138-154.
- Martín, S., López-Catalán, B. & Ramón-Jerónimo, M., 2012. Factors determining firms' perceived performance of mobile commerce. *Industrial Management & Data Systems*, 112(6), pp. 946-963.
- Martín, S., López-Catalán, B. & Ramón-Jerónimo, M., 2012. Factors determining firms' perceived performance of mobile commerce'. *Industrial Management & Data System, Vol. 112 Issue: 6,* pp. pp. 946-963.
- Mathauer, M. & Hofmann, E., 2019. Technology adoption by logistics service providers. *Institute of Supply Chain Management*, 49(4), pp. 416 - 434.
- Mayer, R., Davis, J. H. & Schoorman, F., 1995. An integrative model of organizational trust. *Academy of Management Review*, 20(3), p. 709–734.
- McKnight, D., Choudhury, V. & Kacmar, C., 2002. Developing and validating trust measures for e-commerce:: An integrative typology. *Information Systems Research*, 13(4), p. 334–359.
- McLachlan, C. J. & Garcia, R. J., 2015. Philosophy in practice? Doctoral struggles with ontology and subjectivity in qualitative interviewing. *Management Learning*, 46(2), p. 195–210.
- Merriam, S. B. & Tisdell, E. J., 2015. *Qualitative Research, A guide to design and implementation, fourth edition.* San Fransisco: Wiley.
- Mertens, D. M. & Hesse-Biber, S., 2012. Triangulation and Mixed Methods Research: Provocative Positions. *Journal of Mixed Methods Research*, 6(2), p. 75–79.
- Mies, V., 2019. Technology Adoption during the process of development: Implications for long run prospects. *Macroeconomic Dynamic*, Volume 23, p. 907–942.
- Miles, J. S., 2007. A time and a place for incremental fit indices. *Personality and Individual Differences*, 42(5), pp. 869-874.
- Momentive, 1999-2022. *Sample size calculator.* [Online]
Available at: <https://www.surveymonkey.co.uk/mp/sample-size-calculator/> [Accessed 25 May 2021].
- Mulaik, S. A. et al., 1989. Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, 105(3), pp. 430-445.
- Murillo, E., 2017. Attitudes toward mobile search ads: a study among Mexican millennials. *ournal of Research in Interactive Marketing*, 11(1), pp. 91-108.
- Murti, B., 2016. *How to Conduct Path Analysis and Structural Equation Model for Health Research.* Indonesia, ICPH.

Ngai, E. & Gunasekaran, A., 2007. A review for mobile commerce research and applications, Vol. 43 No. 1. *Decision Support Systems*, pp. 3-15.

Nigerian Communications Commission (NCC), 2021. *Subscriber Statistics*. [Online] Available at: <https://www.ncc.gov.ng/statistics-reports/subscriber-data#monthly-subscriber-technology-data> [Accessed 1 May 2021].

NIMC, 2021. *The Digital Identity Ecosystem*. [Online] Available at: <https://nimc.gov.ng/digital-identity-ecosystem/> [Accessed 3 May 2021].

Omotoso, F., 2014. Public-Service Ethics and Accountability for Effective Service Delivery in Nigeria. *Africa Today*, 60(3), p. 119–139. .

O'Neill, A., 2021. *Unemployment rate in Nigeria 2020*. [Online] Available at: [statista.com/topics/26477/demographics of nigeria//#dossierkeyfigures](https://www.statista.com/topics/26477/demographics-of-nigeria/#dossierkeyfigures) [Accessed May 2021].

Onwuegbzie, A. J., Johnson, B. R. & Collins, K. M., 2009. Call for mixed analysis: A philosophical framework for combining qualitative and quantitative approaches. *International Journal of Multiple Research Approaches*, 3(2), p. 114–139.

Osakwe, C. N. & Okeke, T. C., 2016. Facilitating mCommerce Growth in Nigeria through mMoney Usage: A Preliminary Analysis. *Interdisciplinary Journal of Information, Knowledge, and Management*, Volume 11, pp. 115-139.

Osterwalder, A., Pigneur, Y. & Tucci, C. L., 2005. Clarifying Business Models: Origins, Present, and Future of the Concept. *Communications of the Association for Information Systems*, 16(1), pp. 1-25.

Osterwalder, A., Pigneur, Y., Bernada, G. & Smith, A., 2014. *Value Proposition Design*. New Jersey: John Wiley & Sons.

Osterwalder, A. & Yves, P., 2010. *Business Model Generation*. New Jersey: John Wiley & Sons Inc..

Overby, J. & Lee, E., 2006. The effects of utilitarian and hedonic online shopping value on consumer preference and intentions. *Journal of Business Research*, 59(10), pp. 1160-1166.

Pankomera, R. & Greunen, D. v., 2019. Opportunities, barriers, and adoption factors of mobile commerce for the informal sector in developing countries in Africa: A systematic review. *Wiley*, pp. 1-19.

Parker, C. J. & Wang, H., 2016. Examining hedonic and utilitarian motivations for m-commerce fashion retail app engagement. *Journal of Fashion Marketing and Management: An International Journal*, 20(4), pp. 487-506.

Passport, 2020. *E-Commerce in Nigeria*, s.l.: Euromonitor International.

Passport, 2021. *Mobile E-Commerce in Nigeria*, s.l.: Euromonitor International.

Passport, 2021. *Retailing in Nigeria*, London: Euromonitor International.

Pena, A. I. P., Jamilena, D. M. F. & Molina, M. A. R., 2014. Value co-creation via information and communications technology. *The Service Industries Journal*, 34(13), p. 1043–1059.

- Pentina, I., Amialchuk, A. & Taylor, D. G., 2011. Exploring effects of online shopping experiences on browser satisfaction and e-tail performance. *International Journal of Retail & Distribution Management*, 39(10), pp. 742-758.
- Persaud, A. & Azhar, I., 2012. Innovative mobile marketing via smartphones: Are consumers ready?. *Marketing Intelligence & Planning*, 30(4), pp. 418-443.
- Persaud, A. & Azhar, I., 2012. Innovative mobile marketing via smartphones: Are consumers ready?. *Marketing Intelligence & Planning*, 30(4), pp. 418-443,.
- Picoto, W. N., Bélanger, F. & Palma-dos-Reis, A., 2014. An organizational perspective on m-business: usage factors and value determination. *European Journal of Information Systems*, 23(5), pp. 571-592.
- Ranjan, K. R. & Read, S., 2016. Value co-creation: concept and measurement. *Academy of Marketing Science*, Volume 44, p. 290–315.
- Ranjan, K. R. & Read, S., 2016. Value co-creation: concept and measurement. *Academy of Marketing Science*, Volume 44, p. 290–315.
- Ree, J. et al., 2021. *Nigeria: Selected Issues*, Washington D. C: International Monetary Fund.
- Ritter, T. & Lettl, C., 2018. The wider implications of business-model research. *Long Range Planning*, Volume 51, pp. 1-8.
- Rogers, E. M. ..., 2003. *Diffusion of Innovations, 5th Edition*. New York: Free Press.
- Sakshi, S., Cerchione, R. & Bansal, H., 2020. Measuring the impact of sustainability policy and practices in tourism and hospitality industry. *Business Strategy and the Environment*, 29(3), p. 1109–1126..
- Salimon, M. G. et al., 2018. Do risk and fun matter in the adoption of mobile commerce in Nigeria? A PLS-SEM approach. *Management Science Letters*, Volume 8, p. 507–518.
- Sandu, A., Frunza, A. & Unguru, E., 2018. *Ethics in Research Practice and Innovation*. s.l.:IGI Global.
- San-Martin, S., Prodanova, J. & López Catalán, B., 2016. What Makes Services Customers Say, “Buy It with A Mobile Phone. *Journal of Services Marketing*, Volume 30, pp. 601-614.
- Schillaci, M., 2015. *Digital Marketing Magazine*. [Online]
Available at: <http://digitalmarketingmagazine.co.uk/social-media-marketing/3-out-of-4-consumers-consult-social-media-before-buying/1659> [Accessed 24 April 2021].
- Shang, D. & Wu, W., 2017. Understanding mobile shopping consumers’ continuance intention. *Industrial Management & Data Systems*, 117(1), pp. 213-227.
- Shang, D. & Wu, W., 2017. Understanding mobile shopping consumers’ continuance intention. *Industrial Management & Data Systems*, 117(1), pp. 213-227.
- Shareef, M. A., Dwivedi, Y. K., Kumar, V. & Kumar, U., 2017. Content design of advertisement for consumer exposure: Mobile marketing through short messaging service. *International Journal of Information Management*, Volume 37, p. 257–268.
- Shareef, M. A., Dwivedi, Y. K., Kumar, V. & Kumar, U., 2017. Content design of advertisement for consumer exposure: Mobile marketing through short messaging service. *International Journal of Information Management*, Volume 37, p. 57–268.

- Shen, S., 2015. *Report highlight for market trends: mobile payment – the way forward*. [Online] Available at: <https://www.gartner.com/en/documents/3055223> [Accessed 15 July 2019].
- Sidhartha, S. P., Sarat, K. J., Ingmar, Z. & Kanwal, K., 2014. Evolving readiness index for overhauling the retailing sector through retailing process reengineering implementation. *Business Process Management Journal*, 20(6), pp. 844-864.
- Sinisalo, J., Salo, J., Karjaluoto, H. & Leppäniemi, M., 2007. Mobile customer relationship management: underlying issues and challenges. *Business Process Management Journal*, 13(6), pp. 771-787.
- Smith, A., 2021. *Independent*. [Online] Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/gamestop-reddit-wall-street-stock-b1792929.html> [Accessed 21 April 2021].
- Smith, M. K., 2001, 2011, 2021. *Donald Schön: learning, reflection and change*, *The encyclopedia of pedagogy and informal education*. [Online] Available at: <https://infed.org/donald-schon-learning-reflection-change/> [Accessed 12 April 2021].
- Statista, 2021. *Age distribution of population in Nigeria 2021, by gender*. [Online] Available at: <https://www.statista.com/statistics/1121317/age-distribution-of-population-in-nigeria-by-gender/> [Accessed 25 May 2021].
- Statista, 202. *Digital Advertising Report 2020 - Social Media Advertising - Statista Digital Market Outlook - Segment Report, USA: Statista*.
- Steiger, J. H. & Lind, J. C., 1990. Statistically Based Tests for the Number of Common Factors.. *Annual Meeting of the Psychometric Society*, Volume 758, pp. 424-453.
- Steup, M., 2019. *WhatsApp in Africa: Statistics & Business Potential*. [Online] Available at: <https://www.messengerpeople.com/whatsapp-in-africa/> [Accessed 7 March 2020].
- Sujeong Choi, 2018. What promotes smartphone-based mobile commerce? Mobile-specific and self-service characteristics. *Internet Research*, 28(1), pp. 105-122,.
- Tandon, U., Ertz, M. & Khanna, S., 2021. POD Mode of Payment, Return Policies and Virtual-Try-on Technology as Predictors of Trust: An Emerging Economy Case. *Journal of Promotion Management*, 27(6), pp. 832 - 855.
- Tarhini, A., Alalwan, A. A., Shammout, A. B. & Al-Badi, A., 2019. An analysis of the factors affecting mobile commerce adoption in developing countries: Towards an integrated model. *Review of International Business and Strategy*, 29(3), pp. 157 - 179.
- Taylor, E., 2016. Mobile payment technologies in retail: a review of potential benefits and risks. *International Journal of Retail & Distribution Management*, 44(2), pp. 159-177,.
- Taylor, E., 2016. Mobile payment technologies in retail: a review of potential benefits and risks. *International Journal of Retail & Distribution Management*, 44(2), pp. 159-177.
- Teece, . D. J., 2010. Business Models, Business Strategy and Innovation. *Long Range Planning*, Volume 43, p. 172 – 194.
- Tengti, D., 2009. The Impact of Transaction Trust on Consumers' Intentions to Adopt M-Commerce: A Cross-Cultural Investigation'. *Cyberpsychology & Behavior*, 12(2), pp. 225-229.

- Terrell, S. R., 2012. Mixed-Methods Research Methodologies. *The Qualitative Report*, 17(1), pp. 254-280.
- Terziyan, V., 2002. Ontological modeling of e-services to ensure appropriate mobile transactions. *International Journal of Intelligent Systems in Accounting*, 11(3), p. 159-72.
- Tornatzky, L. & Fleischer, M., 1990. *The Processes of Technological Innovation..* s.l.:Lexington Books, Lexington.
- Turban, E., Volonino, L. & Wood, G. R., 2015. *Information technology for Management*. 10th ed. MA: Wiley.
- Udofa, I., Oke, O. & Olumide, B., 2018. *Nigeria's Federal Competition and Consumer Protection Bill 2018*. [Online]. Available at: - <http://www.mondaq.com/Nigeria/x/778676/> [Accessed 23 April 2019].
- Vargo, S. L. & Lusch, R. F., 2004. Evolving to a new dominant logic for marketing. *Journal of Marketing*, Volume 68, pp. 1-17.
- Varshney, U. & Vetter, R., 2002. Mobile Commerce: Framework, Applications and Networking Support. *Mobile Networks and Applications*, Volume 7, p. 185–198.
- Venkatesh, V., Morris, M. G., Davis, G. B. & Davis, F. D., 2003. User Acceptance of Information Technology - Towards a Unified View. *MIS Quarterly*, 27(3), pp. 425-478.
- Venkatesh, V., Thong, J. & Xu, X., 2012. Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), pp. 157-178.
- Verkijika, S. F., 2018. Factors influencing the adoption of mobile commerce applications. *Telematics and Informatics*, Volume 35, p. 1665–1674.
- Wang, C. & Zhang, P., 2012. The evolution of social commerce: an examination from the people, business, technology, and information perspective. *Communication of the Association for Information Systems*, 31(5), pp. 105-127.
- Wang, R. J.-H., Malthouse, E. C. & Krishnamurthi, L., 2015. On the Go: How Mobile Shopping Affects Customer Purchase Behavior. *Journal of Retailing*, 91(2), pp. 217-234.
- Wang, W. & Li, H., 2012. Factors influencing mobile services adoption: a brand-equity perspective. *Internet Researc*, 22(2), pp. 142-179.
- Wang, Y. & Yu, C., 2017. Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International Journal of Information Management*, 37(3), pp. 179-189.
- Waqas, M. et al., 2021. IMPACT OF REVERSE LOGISTICS BARRIERS ON SUSTAINABLE FIRM PERFORMANCE VIA REVERSE LOGISTICS PRACTICES. *Scientific Journal of Logistics*, 17(2), pp. 213-230.
- Watt, D., 2007. On Becoming a Qualitative Researcher: The Value of Reflexivity. *The Qualitative Report*, 12(1), pp. 82-101.
- Winkler, N., 2019. *Omnichannel vs Multichannel: What is the Difference and Why Does It Matter?*. [Online]. Available at: <https://www.shopify.co.uk/enterprise/omni-channel-vs-multi-channel> [Accessed 1 November 2019].

- Woodruff, R. B., 1997. Customer Value: The Next Source of Competitive Advantage. *Journal of Academy of Marketing Science*, 25(2), pp. 139-153.
- Wu, J.-H. & Wang, S.-C., 2005. What drives mobile commerce? An empirical evaluation of the revised technology acceptance model'. *Information & Management*, 42(5), p. 719–729.
- Yadav, R., Sharma, S. K. & Tarhini,, A., 2016. A multi-analytical approach to understand and predict the mobile commerce adoption. *ournal of Enterprise Information Management*, 29(2), pp. 222-237,.
- Yang, H. “., Liu, H. & Zhou, L., 2012. Predicting young Chinese consumers’ mobile viral attitudes, intents and behavior. *Asia Pacific Journal of Marketing and Logistics*, 24(1), pp. 59-77.
- Yang, K., 2010. Determinants of US consumer mobile shopping services adoption: implications for designing mobile shopping services. *Journal of Consumer Marketing*, 27(3), pp. 62-270.
- Yang, K. & Forney, K., 2013. The moderating role of consumer technology anxiety in mobile shopping adoption: differential effects of facilitating conditions and social influences. *Journal of Electronic Commerce Research*, 14(4), pp. 334-347.
- Yin, R. K., 2018. *Case Study Research and Applications: Design and Methods*. 6th edition ed. Los Angeles: SAGE Publications.
- Yurdusev, N. A., 1993. Level of Analysis and Unit of Analysis: A Case for Distinction. *Millennium: Journal of International Studies*, 22(1), p. 77–88.
- Zeithaml, V. A., 1988. Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), pp. 2 - 22.
- Zhang, J. J., Yuan, Y. & Archer, N., 2012. Driving Forces for M-Commerce success. *Journal of Internet Commerce*, 1(3), pp. 81-105.
- Zhang, T., Lu, C., Torres, E. & Chen, P.-J., 2018. Engaging customers in value co-creation or co-destruction online. *Journal of Service Marketing*, 32(1), pp. 57-69.
- Zhi-shuang, C., Rui, L., Xi, C. & Hao, X., 2011. A Survey Study on Consumer Perception of Mobile Commerce Applications. *Procedia Environmental Science*, Volume 11, p. 118 – 124.
- Zhou, T. & Lu, Y., 2011. The Effects of Personality Traits on User Acceptance of Mobile Commerce. *International Journal of Human-Computer Interaction*, 27(6), pp. 545-561.
- Zhu, K. & Kraemer, K. L., 2005. Post-Adoption Variations in Usage and Value of E-Business by Organizations: Cross-Country Evidence from the Retail Industry. *Information Systems Research*, 16(1), pp. 61-84.
- Zhu, K., Kraemer, K. L. & Xu, S., 2006. The Process of Innovation Assimilation by Firms in Different Countries: A Technology Diffusion Perspective on E-Business. *Management Science*, 52(10), pp. 1557-1576.

Chapter 10: Appendix

Appendix 10.1 Key factors influencing MC adoption (organisation level studies)

Constructs	Meaning	Author (s)
Relative Advantage	The degree to which an innovation is perceived as being better than the idea it supersedes	Winnie et al., 2014; Maduku et al. 2016; Tatjana et al., 2016
Complexity	The degree to which an innovation is perceived as being relatively difficult to understand and use	Winnie et al., 2014 (N); Maduku et al. 2016 (N)
Task Fit / Characteristics	The extent to which technology functionality matches task requirements and individual abilities, impacting performance and user evaluation of IT	Martín et al. 2012; Huang et al. 2016
Technology Integration	Is organisations' capability to integrate m-business applications with its existing systems (Winnie et al., 2014)	Jaakko et al., 2007; Yang et al. 2014; Winnie et al., 2014; Tatjana et al. 2016
Financial Resources / Cost	The extent to which resources are readily available to the organisation to adopt a technological innovation.	Youqin et al., 2013 (N); Cagliano et al. 2015 (N); Padhi et al. 2014; Maduku et al., 2016
Top Management Support	Is the degree of support, commitment and buy-in shown by senior management within the organisation in adopting MC. (Youqin et al., 2013)	Bennett and Savani, 2011; Youqin et al., 2013; Winnie et al., 2014; Maduku et al., 2016
Strategic Alignment	Strategic fit relates to the alignment of MC strategy with overall corporate strategy	Bennett and Savani, 2011; Padhi et al., 2014
Training & Employee Empowerment	Relates to employee learning of MC skills and their degree of autonomy and responsibility in performing MC tasks	Padhi et al. 2014; Taylor, 2016
Technology Competence	Is the capability of organisations' IT infrastructure and workforce (Zhu et al, 2006, as cited by Winnie et al. (2014)	Bennett and Savani, 2011 (N); Taylor, (2016); Martín et al., 2012; Winnie et al., 2014;
External Pressures	Relates to external pressure from competitors and business partners (Winnie et al., 2014)	Youqin et al., 2013 (N); Winnie et al., 2014;
Competitive Pressure	Relates to the pressure in the enterprise environment that arises from the threat of losing competitive advantage (Wang & Cheung, 2004)	Bennett and Savani, 2011; Martín et al., 2012 (N); Winnie et al, 2014; Maduku et al., 2016 (N)
Partner Support	Relates to the reputation, relationship and level of service received from technology partners	Youqin et al., 2013; Köster et al., 2016; Maduku et al., 2016 (N)
Customer Involvement	Relates to communication and engagement with customers in deployment of a new product or service	Jaakko et al., 2007; Padhi et al., 2014
Hedonic	Experiential and emotional aspects of mobile commerce derived from the multisensory, emotive, and entertainment aspects of consumption experience (Babin et al., 1994; Holbrook, 1999)	Roussos et al., 2003; Taylor, 2016
Trust	Feeling or belief that the processes, systems and environment in which one transacts has appropriate safeguards and measures (Vance et al., 2008)	Roussos et al., 2003; Köster et al., 2016; Taylor, 2016
Perceived Risk	Relates to organisation' perception about the uncertain negative consequences of a transaction (Kim et al., 2008)	Köster et al., 2016; Taylor, 2016

Appendix 10.2 Key factors influencing MC adoption (Individual level studies)

Construct	Meaning	Author (s)
Innovativeness (INN)	Is the degree an individual adopts technology in a relatively early stage than others (Rogers, 1995)	Kiseol, 2012 (N); Lu, 2014; Im and Ha, 2015; Natarajan et al., 2017
Social Influence (SI)	The extent to which members of a social network influence one another's behaviour (Rice et al., 1990)	Chong, 2013a; Chan and Chong, 2013 (N); Lu, 2014 (N); Yadav et al. 2016
Behavioural Control (BC)	individual's ability to perform a given behaviour, given the presence or absence of requisite resources and opportunities (Ajzen, 1991).	Yang et al., 2012 (N); Mishra, 2014; Wang et al., 2015; Laurent et al., 2016;
Subjective Norm (SN)	A perceived social pressure by significant others to perform a certain behaviour (Fieshbein and Ajzen, 1975; Ajzen, 1991)	Kiseol, 2012; Mishra, 2014 (N); Faqih and Jaradat, 2015
Perceived Similarity (PS) (previous use)	Relates to functional consistency or previous experience with similar technology	Ko et al., 2009; Kiseol, 2012; Moshkovich, 2013;
Self-Efficacy (SE)	Relates to the conviction that one can successfully execute the behaviour required to produce the outcomes.	Maity, 2010; Gupta and Arora, 2017
Perceived Usefulness (PU)	Degree an individual believes that using a particular system would enhance their job performance (Davis, 1989)	Dai and Palvi, 2009; Chong and Ooi, 2012 (N); Chong, 2013a; Liebana-Cabanillas et al., 2017
Perceived Ease of Use (PEoU)	Degree a person believes that using a particular system would be free from effort (Davis, 1989)	Holmes et al., J 2014 (N); Agrebi and Jallais, 2015 (N); Osakwe and Okeke, 2016; Shang and Wu, 2017;
Compatibility (CO)	Refers to the degree to which an innovation is perceived to be consistent with the values, past experiences, and needs of potential adopters (Roger, 1995)	Jen-Her and Shu-Ching, 2005; Lu and Su, 2009; Chung and Holdsworth, 2012 (N)
Performance Expectancy (PE)	The degree to which an individual believes that using technology services will facilitate him/her in achieving task performance	Chong, 2013a; Kiseol and Forney, 2013; Shareef et al. 2017;
Aesthetics Design (AD)	Relates to the look and feel of a system, expressed through the elements of colours, shapes, language, music or animation. (Li and Yeh, 2010)	Cyr, et al. 2006; Mahatanankoon and Vila-Ruiz, 2007; Zegrean and Paraschiv, 2013
Convenience (CV)	Extent to which m-commerce makes easier for customers to conduct transactions. (Khalifa and Shen, 2008)	Liu et al., 2015; Khajehzadeh et al., 2015; Gupta and Arora, 2017;
Personalisation (PR)	The degree to which consumers perceive that mobile content is designed to focus on their personal external requirements	Wang and Li, 2012; Parker and Wang, 2016; Liebana-Cabanillas et al., 2017;
Perceived Enjoyment (PE)	The extent to which the activity of using m-commerce is perceived to be enjoyable in its own right (Davis et al., 1992)	Kiseol, 2012; Agrebi et al., 2015; Liebana-Cabanillas et al., 2017
Perceived Entertainment (PENT)	Relates to the ability to fulfil consumer needs for escapism, diversion, aesthetic enjoyment or emotional release (McQuail, 1983)	Kiseol and Forney, 2013; San-Martín et al., 2016; Murillo, 2017;
Gratification (GT)	The motivation to seek good feeling or specific treat to individual customer on the shopping experiences. (Kim, 2006)	Kiseol and Hye-Young, 2012; Parker and Wang, 2016;
Perceived cost (PC)	Extent to which a user perceives that using m-commerce is costly (Zhang et al., 2012)	Chong, 2013a (N); Holmes et al., 2014 (N); Liu et al., 2015; Yadav et al., 2016 (N)
Perceived Risk (PRSK)	Relates to consumers' perception about the uncertain negative consequences of a transaction (Kim et al., 2008); or using a product or service (Chung and Holsworth, 2012)	Liébana-Cabanillas et al., 2017; Osakwe and Okeke, 2016 (N); Natarajan et al., 2017;
Privacy (PR)	Consumers' worry about collection, use and error of information collected from them (Smith et al., 1996)	Nassuora, 2013; Liu et al., 2015; Hua and Yan, 2015 (N); Im and Ha, 2015
Perceived Security (PS)	Refers to the safety of exchanged information, regardless of the level of privacy involved (Khalifa and Shen, 2008)	Khalifa and Shen, 2008; Tengti, 2009; Hua and Yan, 2015
Anxiety (AX)	Refers to negative emotions in cognitive states evoked in actual or imaginary interactions with mobile shopping system (Lu and Su, 2009).	Maity, 2010; Kiseol and Forney, 2013 (N); Gupta and Arora, 2017;
Perceived Trust (PT)	consumer's feeling or belief that the processes, systems and environment in which he/she transacts has appropriate safeguards and measures (Vance et al., 2008)	Persaud and Azhar, 2012; Alain Yee, 2013; Holmes et al., 2014; Liébana-Cabanillas et al., 2017

Appendix 10.3 Qualitative semi-structured interview protocol

No	Question Structure	Question guide
1	General	Tell me about your organisation
2a	Mobile Commerce Application	Tell me about the mobile applications / platforms your organisation is currently adopting?
2b	Mobile Commerce Application	If you are not currently adopting any mobile commerce application, tell me about the MCA your organisation is most likely to adopt in the near future
3	Process of Mobile Commerce Adoption	Can you explain how did your organisation go about deploying such Mobile Commerce applications
4a	Factors influencing MC Adoption	Are there any factors that has influenced your organisations choice of mobile commerce adoption in Nigeria?
4b	Factors influencing MC Adoption	Are there any factors that has hindered your organisations choice of mobile commerce adoption in Nigeria?
5a	Factors influencing MC Adoption	To what extent does 'TECHNOLOGY' influence your organisations adoption of mobile commerce in Nigeria?
5b	Factors influencing MC Adoption	To what extent does the 'ORGANISATION' influence your organisations adoption of mobile commerce in Nigeria
5c	Factors influencing MC Adoption	To what extent does the Nigerian 'ENVIRONMENT' influence your organisations adoption of mobile commerce in Nigeria
6	Impact of Mobile Commerce Adoption	How has the adoption of your mobile application impacted on customer value?
7	Impact of Mobile Commerce Adoption	How has the adoption of your mobile application impacted on overall organisation performance?

No	Question Structure	Question guide
8	Impact of Mobile Commerce Adoption	Are there any other positive or negative impacts of your organisation adopting Mobile commerce?
9	Customer View	How does your organisation interact with its customers to enhance their Mobile Commerce experience?
10	Customer View	What do you think can be done to promote further customer acceptance of your Mobile Application?

Appendix 10.4 Quantitative questionnaire survey protocol

Detail of the quantitative interview protocol

Questionnaire Protocol	
Background Information	
<p>This questionnaire is part of an individual doctorate research titled 'Mobile Commerce Innovation: A case for retail adoption and consumer acceptance in Nigeria'. The purpose is to understand factors influencing consumer acceptance of m-commerce applications within the Business to Consumer (B2C) Nigerian retail context. Through the voice of the customer, the research aims to understand how retail organisations can improve the perceived value of m-commerce adoption.</p> <p>Please complete the questionnaire no later than 05.05.2019 by following this link</p> <p>The information provided will be treated in confidence and will only be used for the purposes of the research. All participants completing the questionnaire should be above 18years and by taking part in this survey, has given their deemed consent.</p>	
Demographics	
1. Gender:	Select a radio button <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> prefer not to say
2. Age range:	Select a radio button
	<input type="checkbox"/> <18 <input type="checkbox"/> 18-24 <input type="checkbox"/> 25-34 <input type="checkbox"/> 35-44 <input type="checkbox"/> >45
3. Employment status:	Select a radio button
	<input type="checkbox"/> Employed <input type="checkbox"/> self-employed <input type="checkbox"/> Unemployed <input type="checkbox"/> Undergraduate student <input type="checkbox"/> Postgraduate student <input type="checkbox"/> Retired <input type="checkbox"/> Youth service <input type="checkbox"/> Other

4. Please indicate how often you use the following mobile commerce applications on mobile phones

(1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always)

a. mobile communication – email, SMS, MMS

b. Location based services - e.g., store locator and maps

c. mobile payments systems – e.g., mobile money, mobile wallet, Jumia Pay, Konga Pay

d. mobile shopping – ‘mobile-app’ or mobile enabled shopping

e. mobile marketing – e.g., QR Codes, chat apps

f. mobile social media commerce – e.g., Facebook, WhatsApp

5. Mobile network service: Select a radio button

MTN ETISALAT GLO AIRTEL Other

6. indicate which type of mobile device you use

Android iPhone Windows Tablet GSM Other

Constructs

Using the Likert scale, please indicate your agreement or disagreement with the following statements (1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

Item ID	Items	Authors	Item count
AI1	I currently use mobile commerce applications	Davis et al. 1989; Kim et al. 2007; Kiseol Yang, 2010	3
AI2	I intend to use mobile commerce applications in the future		
AI3	I will recommend organisations mobile application to someone who seeks my advice		
PV1	Compared to the phone credit I pay; the use of mobile commerce application offers value for money	Zeithaml, 1988; Kim et al. 2007; Fen Liu, 2015	3
PV2	Compared to the time I need to spend; the use of mobile commerce applications is worthwhile to me		

PV3	Overall, the use of organisations mobile applications delivers me excellent value		
PI1	I like to experiment with new Mobile Commerce technologies	Agarwal and Prasad, 1998	2
PI2	Among my peers, I am usually the first to try out new Mobile Commerce technologies		
B_PER1	I feel that my personal needs have been met using Organisations mobile commerce	Veljko Marinkovic and Zoran Kalinic, 2017	1
SN1	I will use Mobile Commerce application if	Liébana-Cabanillas et al. 2014, Ajzen, 2002; Min Li, Z.Y. Dong, Xi Chen, 2012	1
B_PE1	I have fun interacting with Organisations mobile Commerce applications	Kim et al., 2007; Fen Liu et al. 2015	1
B_PU1	Using my providers mobile application enables me to make better purchase decision	Joaquín Aldás-Manzano et al., 2009; Davis 1989	2
B_PU2	Using my providers mobile application enables me to save money		
B_PEOU 1	Interacting with my providers mobile commerce application is clear and understandable	Davis 1989	1
PR1	Providing Mobile commerce application providers with my personal information (e.g., location and consuming preferences) would cause many unexpected problems	Köster et al., 2015; Kim et al., 2007; Fen Liu et al. 2015	2
PR2	There is considerable risk in disclosing my personal information (e.g., bank details) to online firms using Mobile commerce application		
PC1	Phones with Mobile Commerce application capabilities are expensive	Luarn and Lin, 2005; Fen Liu et al. 2015; Chong et al. 2012	2
PC2	There are financial barriers (e.g., paying for mobile 3G network fee) to my using mobile commerce applications		

CI1	When I experience a problem using mobile commerce application, I let the provider know about it	Svendsen et al., 2011; Yi and Gong, 2013; Liébana-Cabanillas, 2017	3
CI2	If I had a useful idea on how to improve Mobile Commerce application offered by my provider, I will let the provider know		
CI3	I would like to be included in development of new mobile commerce application products and services offered by my Mobile Commerce provider		
TRUST1	I will use Mobile Commerce if the Mobile Commerce application provider is trustworthy	Lin & Wang, 2006; Li and Yeh, 2010; Köster et al., 2015	2
TRUST2	I will use Mobile Commerce if the Mobile Commerce application provider keeps its promises and commitments		
Total			23

Appendix 10.5 Thematic analysis process (steps 1& 2)

Step 1- Data Familiarization

Performed data transcription

Examples of transcription inaccuracies

no	Transcribes as...	Actual meaning...
1	We use the ps4 or Google Chrome	We use the play store or Google Chrome
2	Walking through life	Working days
3	different flowers	within 24 hours
4	Where the police force forgot	Where they (customer) place false order
5	4G light	4G LTE
6	call demo	Call them up

Step 2 - Initial Coding

Initial coding based on research questions

Examples of frequency query wizard

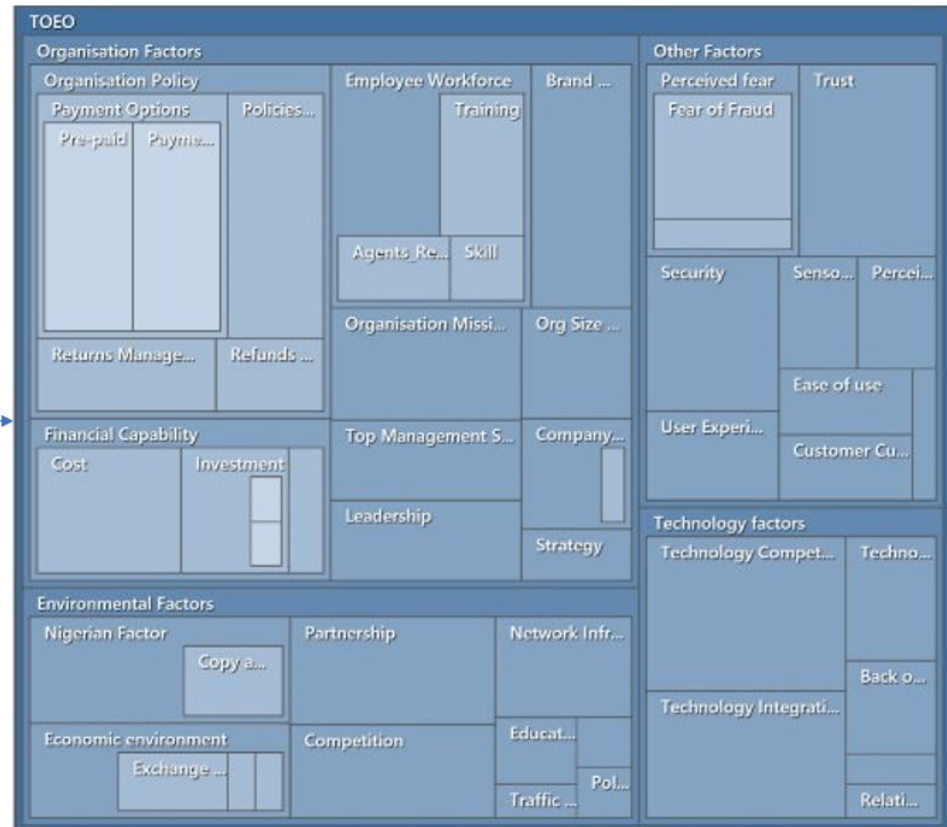
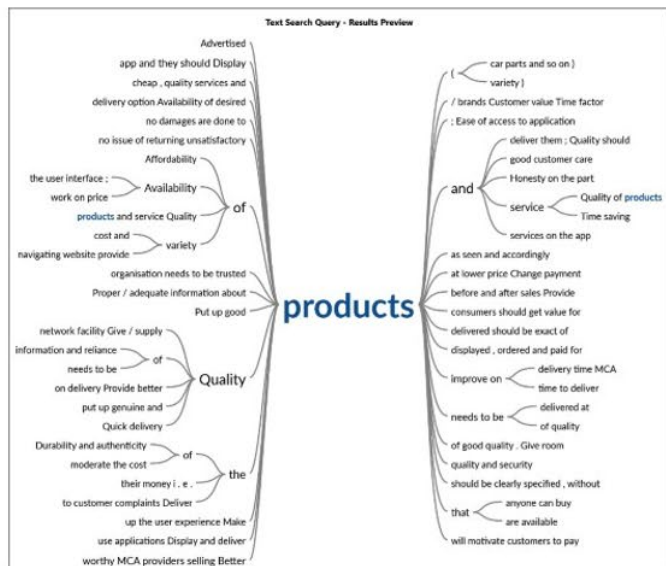
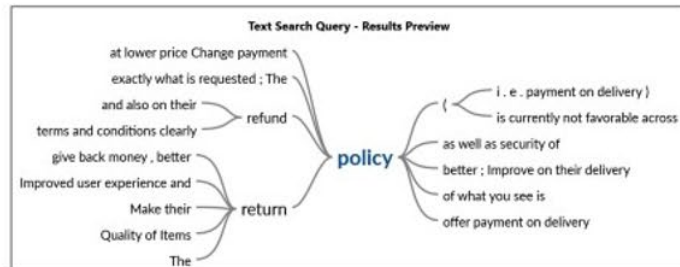
100 word cloud query

1000word cluster analysis

Appendix 10.6 Thematic analysis process (steps 4)

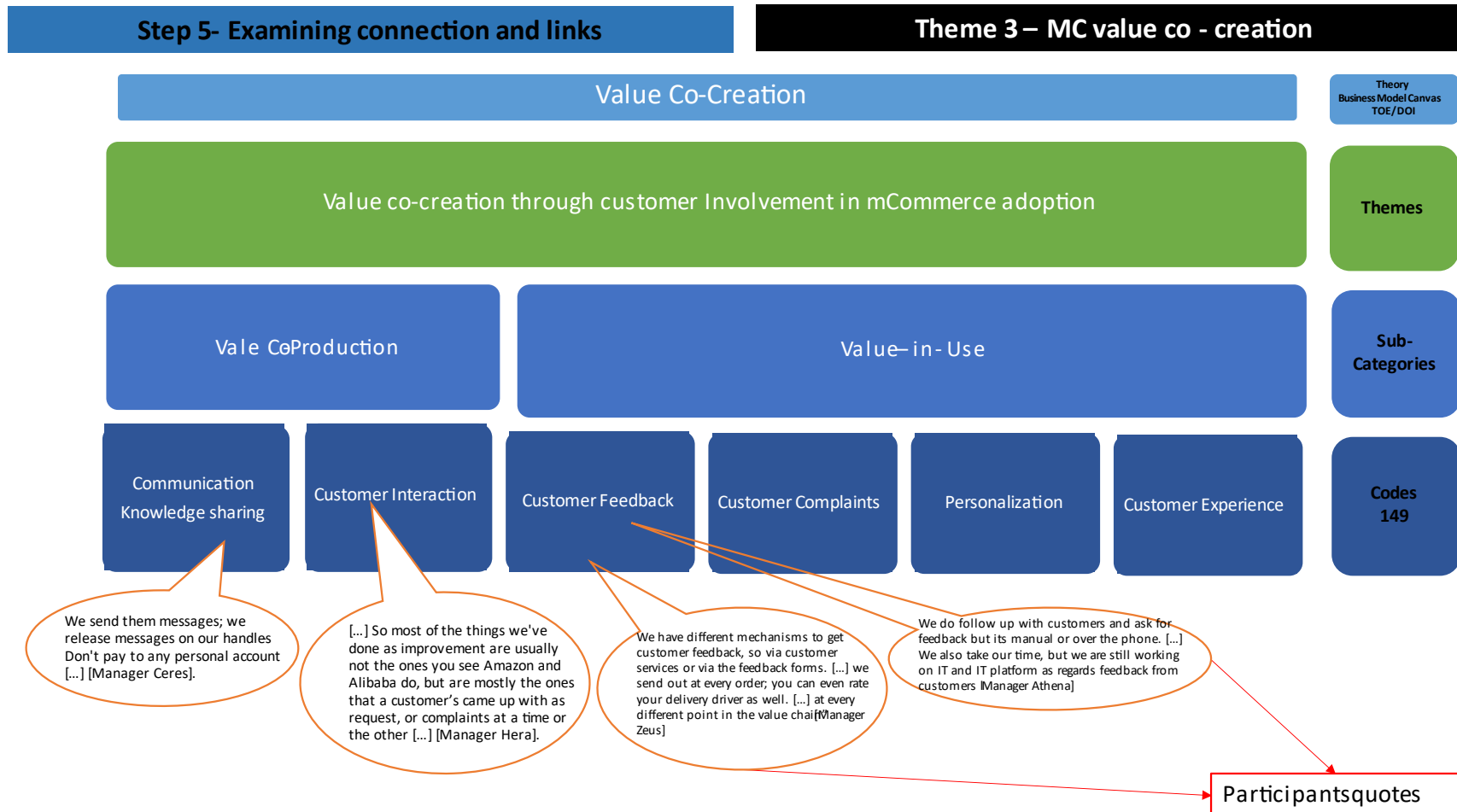
Step 4- Evaluate Themes

Using the text queries, the nodes were further synthesised and re-grouped. This formed the final TOEO groupings/

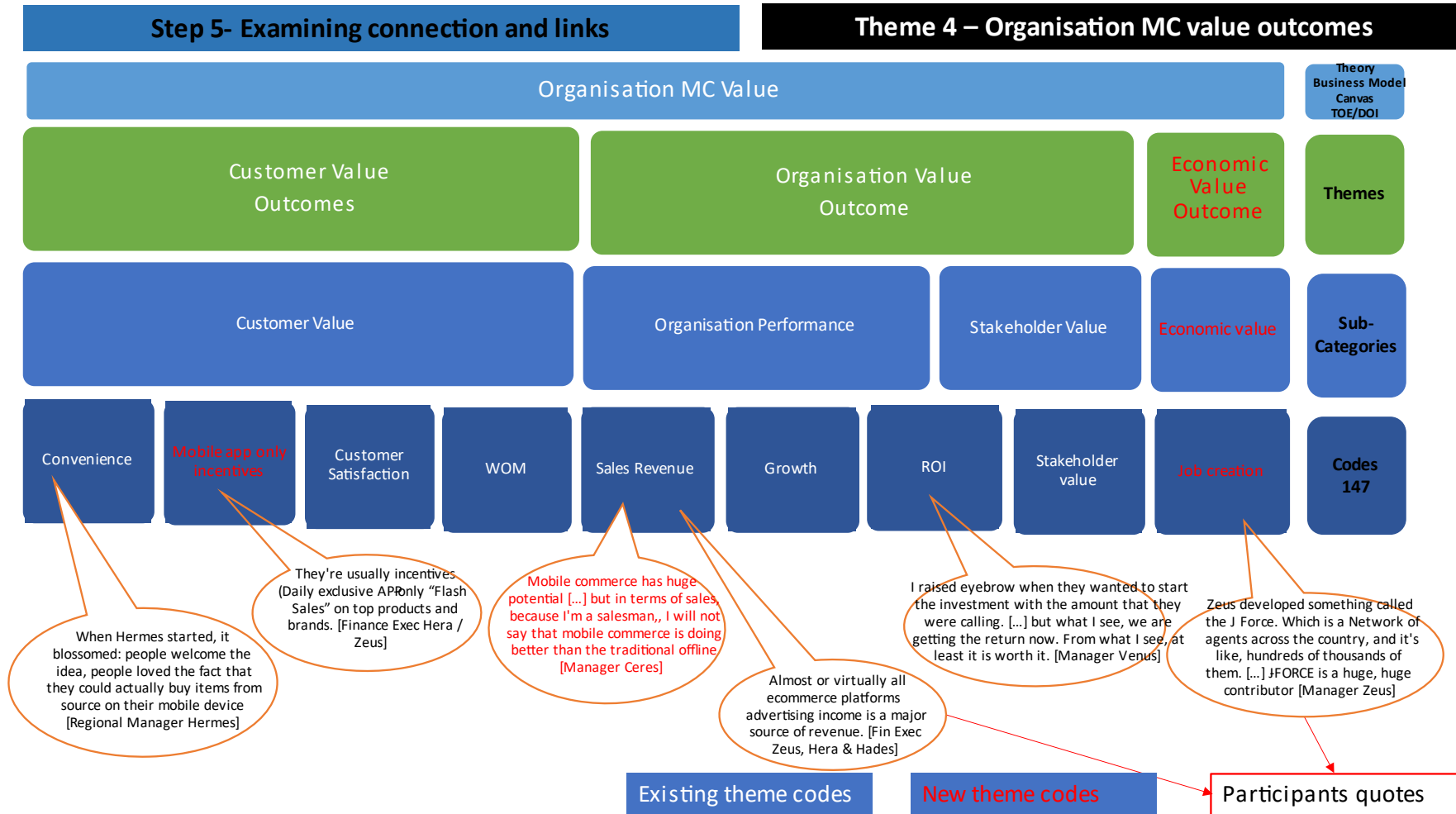


Appendix 10.7 Thematic analysis process (steps 5)

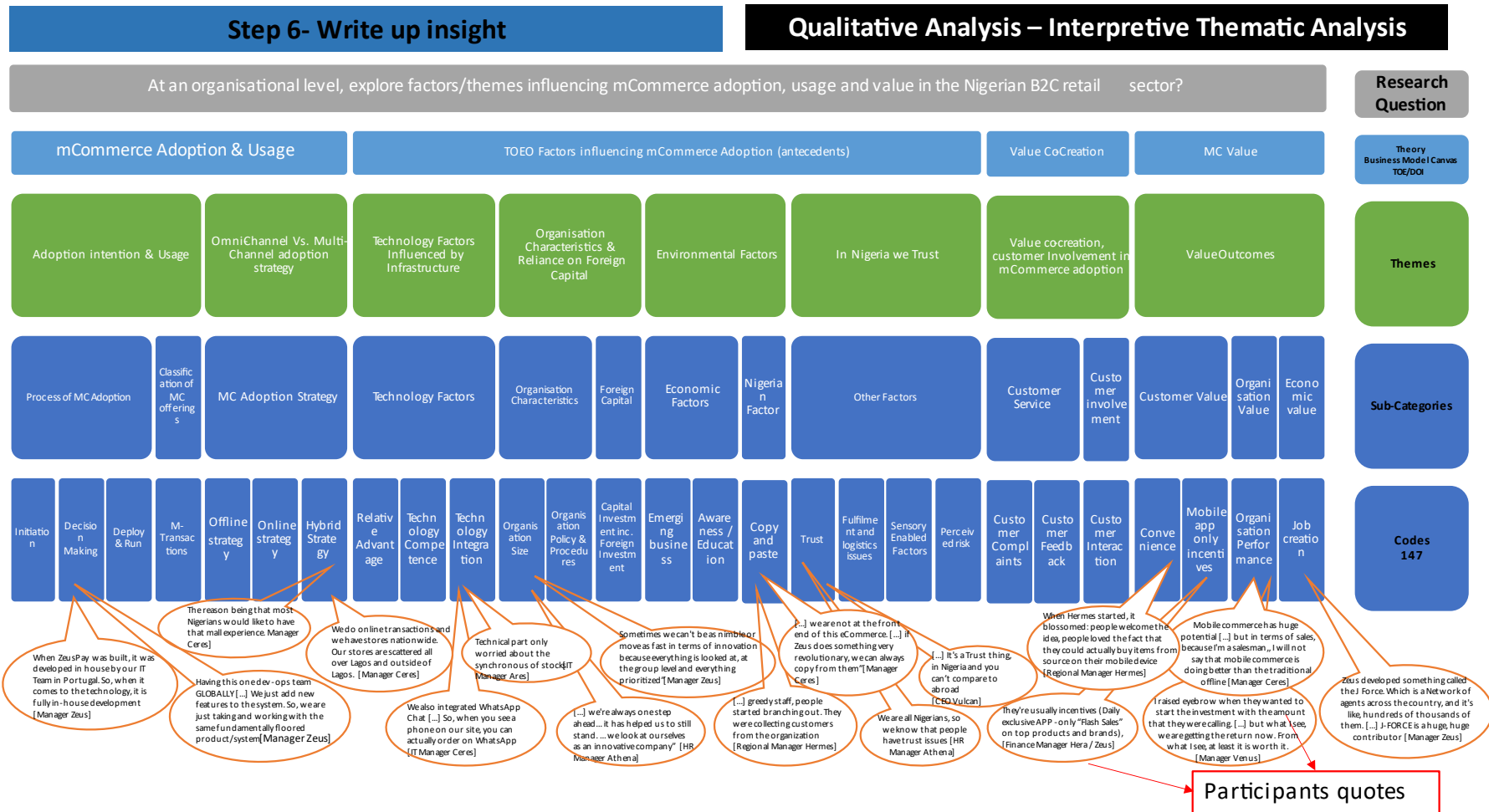
Theme 3 – MC value co-creation



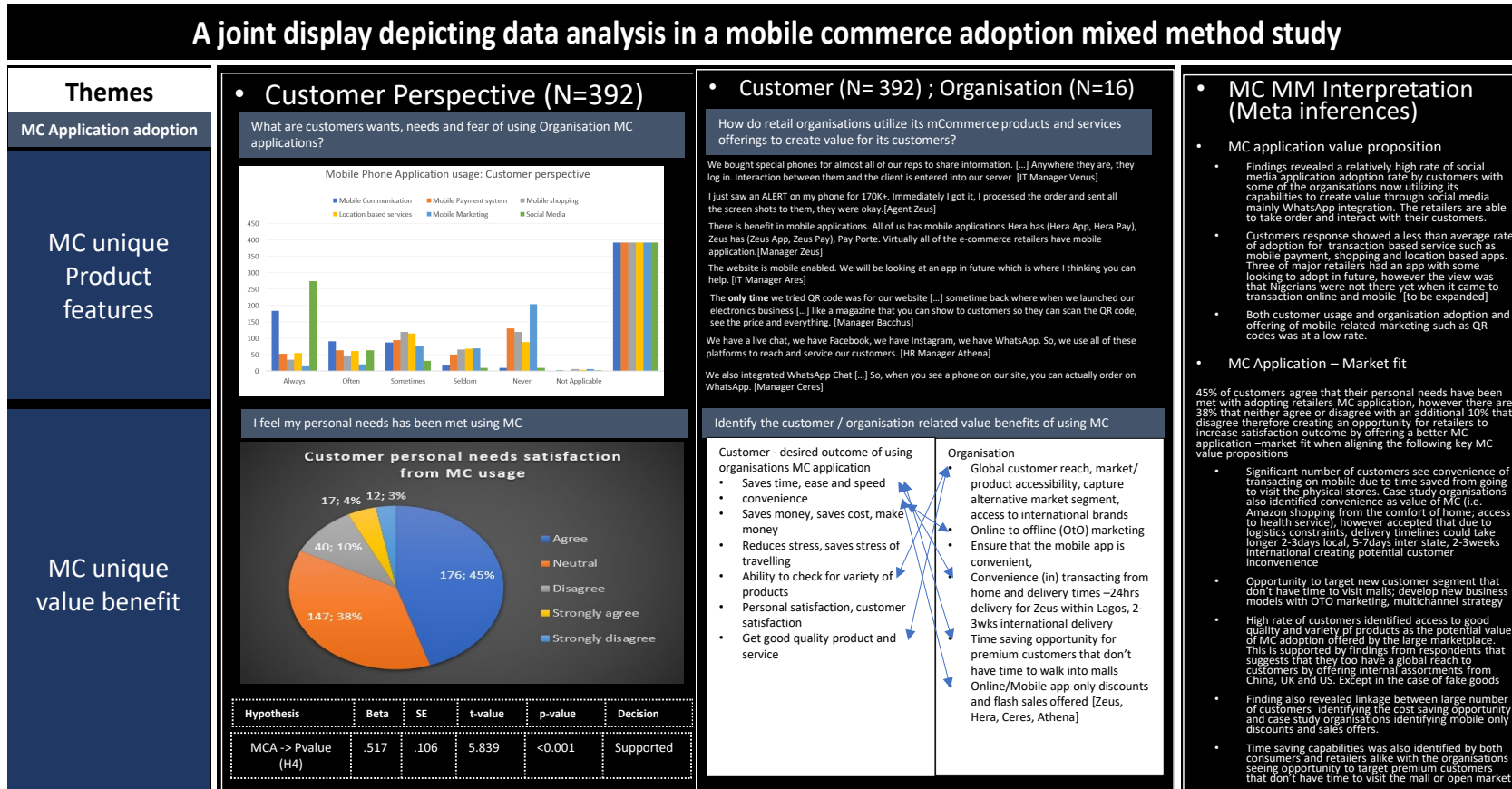
Theme 4 – Organisation MC value outcomes



Appendix 10.8 Thematic analysis process (steps 6)



Joint Display 1



Themes

Adoption Antecedents

MC Adoption Intention and usage

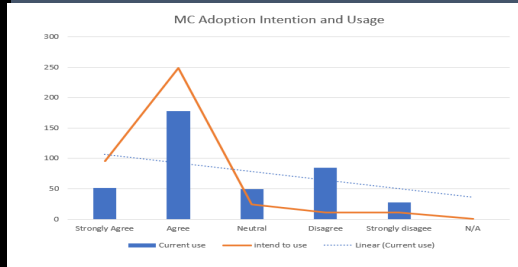
Perceived Benefits

Perceived Sacrifice

Perceived Value of MCA

Customers (N=392)

Percentage of customers that currently use or intend to use MC



Matrix of value benefits of MC adoption ~46% agree that MC delivers excellent value

Survey Respondent	Overall the use of applications/mobile devices is a + to society (1-5)	Overall the use of applications/mobile devices is a + to society (1-5)	Overall the use of applications/mobile devices is a + to society (1-5)	Overall the use of applications/mobile devices is a + to society (1-5)	Overall the use of applications/mobile devices is a + to society (1-5)	Total (N=392)
Customer Service	4	3	3	4	3	3.5
Delivery Service	4	3	3	4	3	3.5
Ease of Use	4	3	3	4	3	3.5
Improved Network	4	3	3	4	3	3.5
Price value	2	3	3	4	3	3.2
Product	4	3	3	4	3	3.5
Provides timely customer service	4	3	3	4	3	3.5
Security	4	3	3	4	3	3.5
Cost friendly experience	4	3	3	4	3	3.5
Total (mean)	3.5	3.2	3.2	3.5	3.2	3.3

Matrix of Sacrifices - constraint of consumer MC adoption

Personal Factors	There are financial benefits to the company (1-5)	There are financial benefits to the company (1-5)	There are financial benefits to the company (1-5)	There are financial benefits to the company (1-5)	There are financial benefits to the company (1-5)	Total (N=392)
Survey Respondent	4	3	3	4	3	3.5
Financial or Money Issue	4	3	3	4	3	3.5
Business Issues	4	3	3	4	3	3.5
Poor data	4	3	3	4	3	3.5
Total (mean)	3.5	3.2	3.2	3.5	3.2	3.3

Statistical values of customer MC adoption – P Value of MC adoption

Hypothesis	Beta	SE	t-value	p-value	Decision
PBenefit -> PValue	.074	.151	7.092	<0.001	Supported
PCost -> PValue	.091	.064	1.422	0.155	Not supported
PRisk -> PValue	-.016	.045	-0.252	0.801	Not supported

Customer (N= 392); Organisation (N=16)

Organisation Adoption strategy - sentiment on customer adoption

We do online transactions and we have stores nationwide. Our stores are scattered all over Lagos and outside of Lagos [...] Online is good, online mobile commerce has huge potential but it will take many years and still have many years for Nigerians to fully adopt it because like I told you earlier, Nigerians have this doubt issue [Manager Ceres]

When we started online, we called our teams [...] How we are going to bring the products. The same quality products need to be delivered to customer [IT Mgr. Ares]

Online businesses is getting much more trustworthy [...] we have discovered that even though online business is very good, we know that online businesses is still an emerging business in Nigeria [Manager Bacchus]

Right from the onset, we have been an online (an e-commerce site) [HR Mgr. Athena]

Yes, I am going to adopt online e-commerce eventually [...] E-commerce here is going to take a long time to adopted. People are doing it, people are using it but they do it with huh... let me just do it (trepidation) [CEO Vulcan]

Mobile and online commerce is a welcome idea, but we are not there yet. The management are working towards that seriously [Manager Hestia]

As a customer, I order the products online, and then it directs me to a representative [Manager Venus]

We really saw that mobile was the future you know, so our mindset was completely geared towards ehm, towards the web [Snr Exec Zeus]

Benefits & benefit creators - How does org aim to create customer gains

Customers response on important factors to improve value adoption of MC	Organisation
<ul style="list-style-type: none"> User Friendly including GUI Better user experience Ease of use Good customer service Efficient delivery service Improve customer satisfaction Improved strong, stable, reliable network (4G /5G) Better customer security and MCA security Product quality, variety and availability Reduced price, discounts 	<ul style="list-style-type: none"> We have both customer experience and vendor experience. So, our customer care is divided into two. [Zeus Finance Exec] [...] that make us unique, we offer free delivery for all orders in Lagos. [...] and we do same day delivery for Lagos. [Ceres] From the IT side, we need to make sure the mobile app is easy and gives great customer experience. [Ares] We have to look at every step of the customer journey and where they actually stop, so you can improve it. [Bacchus]

What are the pain reliefs of mobile commerce adoption – how do org aim to relieve the pain

Pain / constraints of adopting MC as identified by customers grouped as	Other Organisational constraints of MCA
<ul style="list-style-type: none"> Network & data issues Poor quality network, cost of NETWORK / data quality, charges, glitches, slow and expensive Trust issues due to Risk and Fear Lack of trust Fear of being Scammed Risk – fear of the unknown, security risks Level of MC innovativeness Lack of information, knowledge, know – how, literacy Publicity and awareness Lack of money, finance Poor Products / services Delivery – cost, time Poor user experience / navigation 	<ul style="list-style-type: none"> Trust was seen as a major constraint. With organisations response to tackle: Pay on Delivery [Zeus, Ceres, Athena] Offline brand presence [Bacchus, Apollo] Build customer relationship [Vulcan, Zeus, Hestia] Organisation size/reputation [Vulcan, Zeus, Hestia] Organisations respondents often identified network issue in relation to speed, value, reliability and access. With response being: <ul style="list-style-type: none"> Adopt restricted MC feature on reduced data and slower network [Bacchus] Offer reduced network charge on Apps Telco's to do more [Bacchus, Zeus] Knowledge / awareness – for both employees and customers with the level of skill and MC innovativeness Quality of products and issue of grey market items was discussed by few org.

MC MM Interpretation (Meta Inference)

Value Proposition - Value Perception fit

The % of customers that “agree” to currently adopt or intend to adopt MC in future is high, demonstrating its commercial acceptability and also supported with the high level of mobile phone penetration rate in Nigeria. However although MC is offered by most organisations interviewed in one form or another such as mobile enabled website, shopping or payment apps, mobile chat etc. (ref to sec xx), their perception on consumer acceptance is still sceptical with the view that MC is still emerging. For organisations that are early adopters, the findings present an opportunity to propose new business models with MC at the centre of the value proposition that aligns to customer sacrifices / “pains” and benefits / “gains” as below:

Benefits / “gains”

46% of customers surveyed agree that MC can deliver excellent value; however more interesting is the 30% that neither agree or disagree as these are undecided that can be targeted. Also, when asked to suggest most important factors to improving the value of MCA, it is interesting to note that using the cross tab query, even those agree believe a lot can be done by the retail organisation to increase the benefits of MCA

- customer service
- Security
- Ease of use
- Product
- Network

In the same vein Organisations response to improving the benefits includes: enhancing the customer experience and customer service for example free delivery. Others like Zeus, Hermes and Bacchus are looking at the MC customer journey to ensure its ease of use to navigate.

Sacrifices / “pains”

The Probability Value for perceived risk and cost was partly significant with perceived Trust significant in negatively influencing MCA. The results of these key sacrifices are synthesised and compared from the perspective of the customer as well as the organisation as follows:

Finance Cost – A high % (48%) of customers agree or strongly agree that finance is a barrier to MCA especially with network cost and data as supported by organisations perspective as not providing value for money. Other cost pain points included delivery cost and time

Network Issue – mobile network providers need to do more in terms of cost of data and availability of network. Also MCA should utilise less data as part of the features

Trust – A resounding 92% of customer participants agreed or strongly agreed that they will use MCA if their retail provider was trustworthy. This is further supported with the cross tab query that suggest fear of scam and trust issues as the main pain point. Organisations also agreed this to be their main barrier of getting more customers with efforts such as adopting POD, offline brand enhancement and building the customer relationship as ways to enhance the trust

Risk – 72% of respondents also strongly agree or agree that there was considerable risk worth providing information online; however this was not voiced as much from the open-ended question nor by organisations. This however can be linked closely to the trust issue above.

Knowledge / level of Innovativeness – can be considered as a new theme of pain points in constraining MCA. This was also supported by organisation in terms of not only issue of getting the right employees with the right skill and knowledge but also creating customer awareness on MCA. With the introduction of reps (apollo) and affiliate agents (Zeus & Hera) they have been able to reach target audience that are not technologically savvy to transact. Also, the view from Athena was by using social media such as Facebook and WhatsApp, they can reduce the knowledge barrier to MCA.

<p>Themes</p> <p>Adoption Value Outcomes</p>	<p>Customer (N= 392); Organisation (N=16)</p> <p>Extent to which customers are willing to create value through sharing experience, ideation and MCA development</p>	<p>Organisation (N=16)</p> <p>Ways organisations get customers involved in value co-creation</p>	<p>MC MM Interpretation (Meta Inference)</p> <p>Value Co-Creation</p>																														
<p>MC Value Co-Creation</p>	<p>Customer Involvement</p> <table border="1"> <caption>Customer Involvement Data</caption> <thead> <tr> <th>Scenario</th> <th>Strongly Agree</th> <th>Agree</th> <th>Neutral</th> <th>Disagree</th> <th>Strongly disagree</th> <th>N/A</th> </tr> </thead> <tbody> <tr> <td>When I experience a problem using MCA</td> <td>44</td> <td>207</td> <td>73</td> <td>13</td> <td>1</td> <td>0</td> </tr> <tr> <td>If I had a useful idea on how I would like to be included in the development of MCA</td> <td>40</td> <td>223</td> <td>46</td> <td>7</td> <td>1</td> <td>0</td> </tr> <tr> <td>on how I would like to be included in the development of MCA</td> <td>45</td> <td>224</td> <td>85</td> <td>13</td> <td>1</td> <td>0</td> </tr> </tbody> </table>	Scenario	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	N/A	When I experience a problem using MCA	44	207	73	13	1	0	If I had a useful idea on how I would like to be included in the development of MCA	40	223	46	7	1	0	on how I would like to be included in the development of MCA	45	224	85	13	1	0	<p>Managing Complaints</p> <p>I have a supervisor, or we still have online or email or there is another platform on the Zeus page that you can complain there.</p> <p>We have had to change the face of our website entirely, as a result of complaints and just to ensure that our customer have an easy access to our website. [HR Manager Athena] Like some customers will go all the way to use social media to make a report. [...] when we see cases like this, we try as much as possible, to correct the staff [Bacchus]</p> <p>Some of them complain, but if you look at it, it's still their fault. They are the ones that made the mistake to begin with. [Ceres]</p> <p>Sometimes what triggers some of these IT developments is that customer complaints. [Hera, Zeus Finance Exec]</p> <p>Feedback</p> <p>When you look at the rating or how many people have got a feedback, I can use it to tell how good that product or supplier is. [Zeus Agent]</p> <p>There is usually R&D but usually in the way of survey. There's always like a market survey, you know, through reviews of customer feedback [Hera, Zeus]</p> <p>On the site, they can make comments and the site itself anybody can use it. It's not hard to understand. [IT Manager Ares]</p> <p>We have different mechanisms like that to get customer feedback, so via customer services or via the feedback forms, we send out at every order, you can even rate your driver as well [Zeus Mgr]</p> <p>Customers can call us to give us feedback. We also take our time, but we are still working on IT and IT platform as regards feedback from customers [Athena HR Mgr]</p> <p>With every interaction, people can leave feedback. So, we have NPS monitor after Promoter Score on a weekly basis. [Zeus mkt Mgr.]</p>	<p>Value Co-Creation</p> <ul style="list-style-type: none"> When asked on the three question relating to customer involvement, the average % of customers that "agree" in getting involved in MCA, sharing a useful MCA idea and willing to report an issue was considered high with 66% rate. With retail of buying and selling proving to be the most selected preference when considering MCA in Nigeria. Similarly when organisation participants were asked how they involved customers in the MCA process, it was mainly post-adoption through their response to customer complaints and feedback. It was only the larger e-commerce organisation Zeus that suggested that some of the MCA R&D was as a result of customer feedback. Similarly, Athena suggested that they had made changes to their mobile enabled platform following customer feedback However is this sufficient level of customer involvement through the co-creation of MCA value? From the finding, with customers now having access to social media platforms, it is as easy to also co-destroy value through negative feedback. More therefore needs to be done between the organisation through its interaction with its customers to ensure they engage and actively seek out customer interaction and involvement throughout the whole customer journey to enhance and realise the potential benefits of MCA. 		
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<p>Value Outcomes</p>	<p>What areas of MC will user like to co-create</p> <p>MCA customers will like to be included in developing</p> <table border="1"> <caption>MCA customers will like to be included in developing</caption> <thead> <tr> <th>Area</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Retail</td> <td>230</td> </tr> <tr> <td>Financial Services</td> <td>100</td> </tr> <tr> <td>Health</td> <td>90</td> </tr> <tr> <td>Transportation</td> <td>80</td> </tr> <tr> <td>Other</td> <td>10</td> </tr> </tbody> </table>	Area	Count	Retail	230	Financial Services	100	Health	90	Transportation	80	Other	10	<p>Value outcomes identified from MCA</p> <table border="1"> <thead> <tr> <th>Customer Value outcomes</th> <th>Organisation value outcomes</th> </tr> </thead> <tbody> <tr> <td> <p>Customer satisfaction</p> <ul style="list-style-type: none"> Timely delivery of the right product satisfying the customer. 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From the findings, the coding visualization shows that there are three main value outcomes customers are interested in: customer satisfaction, customer value (intrinsic, utilitarian value, and hedonic value) word of mouth. This is linked to the MCA benefits defined in the first JDA where customers in their response to some of the reasons to adopt MC included: <ul style="list-style-type: none"> Save time Convenience Save money Reduce stress Access to variety of quality products (local & international) The motivating drive for customers to adopt MC from the respondents identified: individual's own level of innovativeness (with 17%); mass media influence (with 30%); friends and family adopt it (with 37%); celebrity influence (with 3%) and other factors From the organisation perspective, it is also evident that the organisations view that customers MCA expectation can be met by delivering on customer satisfaction through ensuring timely delivery of products ordered via the Mobile application or mobile enabled website. The ability for organisations to also offer cost incentives such as free delivery within the state, reduced data tariffs etc as well as meeting all customers needs throughout the customer journey online / mobile can enhance the customer value. However, conversely, organisations accept that the impact on logistics and not being able to meet the customers needs on time can also impact on the value. Organisations also identified word of mouth from the customers that show their MC service is valid as some of these firms have been able to grow organically through referrals from customers. Similarly, the findings also reveal that there is a correlation between the value outcomes from the customers will result in organisation value outcomes that include: organisation performance, stakeholder value, repeat customer patronage and growth. Interestingly however, respondents from organisation accept that the value outcomes are not as easy to realise and constraints such as issue of logistics, the Nigerian economy and exchange rate can influence the business performance as well as the offer of POD which has influence the gross to net margins The final value outcome as identified in the code visualisation is economic value with organisation seeing the potential to create jobs. 														
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Appendix 10.10 Snapshot from Systematic Literature review

10.10.1 Pre-literature review

Critical analysis of 11 MC Systematic Literature studies.



Pre-literature Review
-SLR.xlsx

10.10.2 MC Adoption studies publication

A longitudinal analysis of MC adoption from literature published from 2000 – 2017

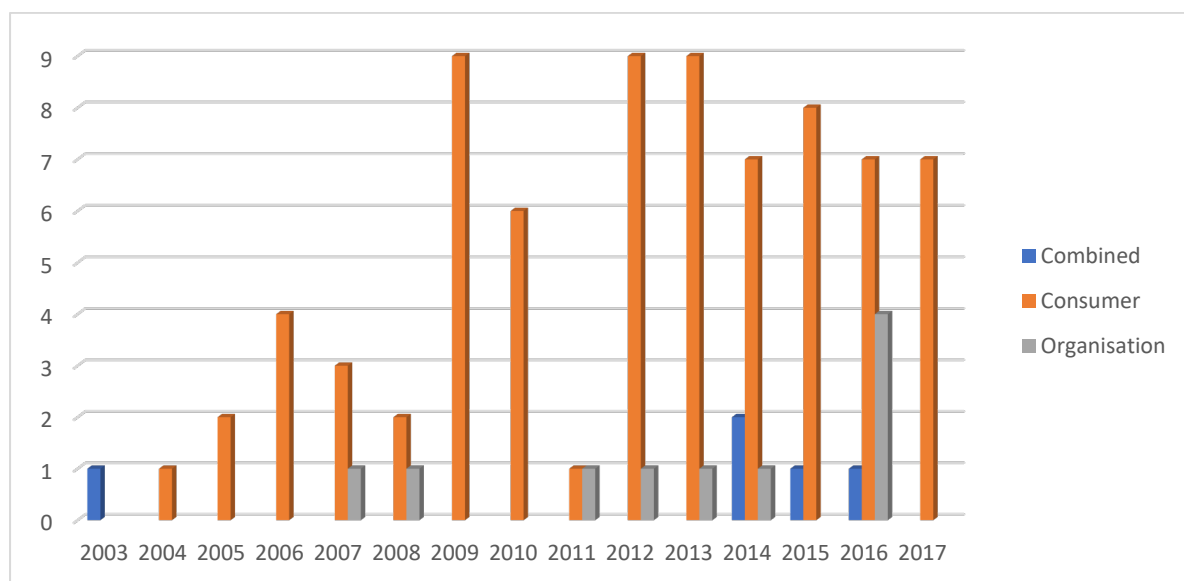


Figure 10-1: MC adoption and acceptance studies according to year of publication

10.10.3 MC Adoption studies by region

Research publications by developed and developing economies.

Table 10-1: MC adoption studies according to developed and developing economies

	Business level studies	Consumer level studies	Combined	Selected Studies	% of 90
Single studies (developed)	7	41	3	51	57%
Single studies (developing)	2	27	2	31	34%
Cross studies (multi-economies)	1	7	0	8	9%
Grand Total	10	75	5	90	100%

10.10.4 Research methodology applied in MC adoption studies

The research methodology and methods in selected studies.

Table 10-2: Research Methodology and Methods

Research Methodology	Research methods	Business Studies	Consumer Studies	Combined studies	Selected Studies	% of 90
Quantitative	Survey (questionnaire)	4 sample size range: 125 –255	63 sample size range: 85 - 1215	1 sample size range: 1 org & 298 users	68	75.7%
	Experiment and Survey	0	5 sample size range: 34 - 221	1 sample size range: 2 org & 432 users	6	6.7%
	Survey and Structured Interview	0	0	1 sample size range: 12 org & 843 users	1	1.1%
	Case Study and questionnaire	2 sample size range: 1	0	0	2	2.2%
	Comparative Data Analysis	0	1 sample size range: 3086	0	1	1.1%
Qualitative	Experiment and Survey	0	0	1 sample size range: 1 org & 60 users	1	1.1%
	Observation and semi - structured interviews	0	1 sample size range: 20	0	1	1.1%
	Semi - structured interviews	1 sample size range: 7	1 sample size range: 18	0	2	2.2%
	Diary and interview	0	1 sample size range: 17	0	1	1.1%
	Case Study and Interviews	2 sample size range: 1	0	0	2	2.2%
Mixed Methods	Semi - structured interviews	0	0	1 sample size range: 20 producers, 20 retailers & 20 users	1	1.1%
	Experiment and Survey	0	3 sample size range: 60 - 2012	0	3	3.3%
	Interviews and surveys	1 sample size range: 180	0	0	1	1.1%
	TOTAL	10	75	5	90	100%

10.10.5 Theories, models and frameworks applied in MC adoption studies

Theories, models and framework in studies.

Table 10-3: MC adoption theories, models and framework

Theories, Frameworks & Models	Business level studies	% of 10	Consumer level studies	% of 95	Combined studies	% of 5
TAM			36	38%		
TAM 2			1	1%		
TAM 3			1	1%		
DOI/IDT	2	20%	6	6%		
TRA			8	8%		
TPB / BRT			9	9%		
UTAUT			6	6%		
UTAUT 2			1	1%		
Flow Theory					1	20%
Gratification Theory			6	6%		
Expectation Confirmation Theory (ECT) / Expectation Confirmation Model (ECM)			4	4%		
TOE model	3	30%	1	1%		
BASS Diffusion Model					1	20%
Task - Technology Fit (TTF)	1	10%	2	2%		
Value-based Adoption Model (VAM) + Perceived Value			5	5%		
Other (Conceptual models proposed)	2	20%	1	1%	2	40%
None	2	20%	8	8%	1	20%
TOTAL	10	100%	95*	100%	5	100%

* Indicates a higher total studies as certain studies identified more than one theory, framework or model