

Gordon Institute of Business Science

University
of Pretoria

Understanding how utilisation of mobile applications as part of an omni-channel strategy can lead to value creation for traditional brick-and-mortar retailers in South Africa.

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration

Abstract

This study seeks to understand how mobile applications can act as a value creating tool for traditional brick and mortar retailers.

In South Africa, as throughout the world, the impact of mobile technology has had a tremendous impact on the way that businesses operate. Within a retail environment, the rise of online retailers has become increasingly relevant and the increase in the number of international brands who use mobile applications entering the South African retail market have increased. Brick-and-mortar retailers have now adopted an omni-channel strategy to combat this threat. Additionally as the mobile phone remains the primary basis for internet access in South Africa, smartphone adoption rates and mobile application usage are predicted to rise significantly within the next few years. Retailers need to understand how the use of mobile applications could benefit their business.

A qualitative research methodology was used. Executives with vast experience in the retail industry, and who operated within retailers that catered to a wide income spectrum were questioned through the use of semi-structured interviews

The results of this qualitative research showed that information sharing and transactional efficiencies could be achieved through the utilisation of mobile applications by retailers. These could be realised through the ability of the applications to enable data collection and analysis of consumer behavioural patterns and needs.

Additionally the research conducted found that through the collection and sharing of information from and with consumers through the mobile application, retailers were able to become more customer-centric. This would allow retailers to become more informed and sensitised to the needs of the consumers and would assist in forging a more enlightened customer relationship management program.

In summary, the findings of this research confirmed the ability of mobile applications, used as part of an omni-channel strategy within the retail environment, to create value for the retailer and co-create value between retailer and consumer through the use of the mobile applications to assist in information sharing between retailer and consumer resulting in a more customer-centric approach and enable transactional efficiencies to be achieved for both retailer and consumer.

Key Words

Brick-and-mortar retail

Omni-channel

Mobile

Mobile Applications

Value Creation

Value co-creation

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in another University. I further declare that I have obtained the necessary authorisation and consent to perform this research.

Suhail Seedat

6th November 2017

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Chapter 1 – Introduction to the Research Report

1.1 Introduction

This Chapter serves as an overarching introduction to the research report that will permit a contextual understanding of the positioning of the report and an overview on its structure and its approach.

As a point of departure, this Chapter will present the background against which the research was conducted, elucidate the motivation for the exploration of this particular topic, and close with an outline of the report.

1.2 Background to the Research Problem

Traditional brick and mortar retailers are facing challenges from the establishment of online retailers such as Amazon and Alibaba, which are two of the most prominent online stores. One of the biggest challenges that the brick and mortar retailers face is finding a strategy to compete with these online stores. To retard the rapid erosion of their market segments, many brick and mortar retailers have invested heavily in an e-commerce operation. The objective is not to compete with but to complement their physical stores (Zeng, Luo, Dou, & Zhang, 2016). This strategy has acquired the nomenclature of an omni-channel strategy because of its ambitious need to not only stem the loss of its market share segment but also expand its boundaries using advanced technology.

An omni-channel strategy denotes a strategy used by retailers to integrate the different types of channels that are utilised by consumers for shopping. This is usually a combination of a physical location, a website ('e-commerce'), mobile website ('m-commerce') or a mobile application.

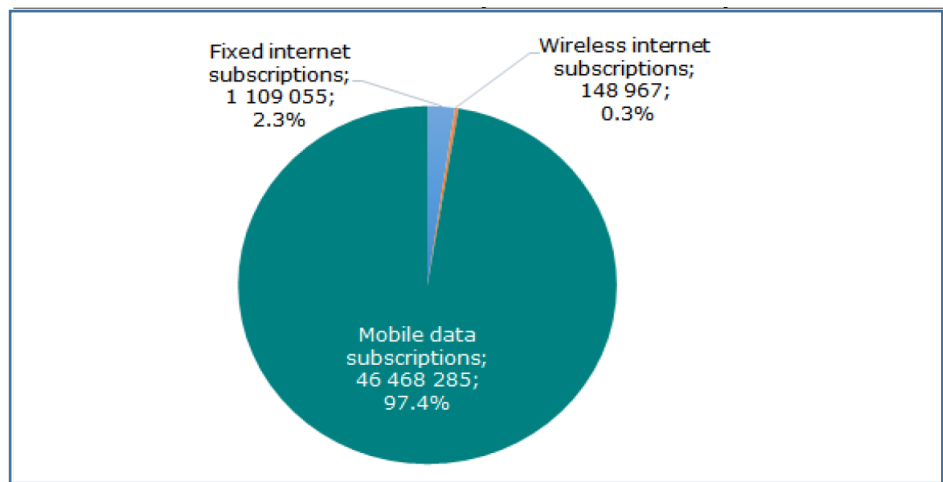
Within this omni-channel strategy, the mobile strategy is emerging as the prevailing vehicle for the satisfaction of consumer needs because of its ubiquity in accessing products anywhere and anytime through mobile devices. (Pantano & Timmermans, 2014).

The advent of third and fourth generation mobile broadband technology has led to the adoption of powerful, functionally-laden devices that has transformed the way that people work and function (The Economist, 2013). At the end of 2016, 3.8 billion smartphones were in use globally (GSMA, 2017).

The pervasiveness of these mobile devices has had a particularly strong impact on the retail sector as consumers and retailers are increasingly using these devices to connect with each other. There is an explosive growth in the use of mobile devices by consumers to bridge the online and offline worlds. In the Deloitte report "The dawn of mobile influence", mobile technology was predicted to influence up to 21% of traditional bricks-and-mortar sales, up from 5% in 2012 (Brinker, Lobaugh, & Paul, 2012). This number was surpassed in 2014, as evidenced in the follow up report "Navigating the new digital divide" where it was found that mobile technology actually influenced approximately 29% of overall sales (Lobaugh, Simpson, & Ohri, 2015).

Internet access is also a restriction to a retailer's omni-channel strategy, as consumers need access to the internet in order to view offers or purchase online.

With 97.4% of all internet and data subscriptions in South Africa originating from mobile usage (Figure 1), mobile technology remains an avenue through which retailers can possibly drive and derive value.



Source: ICASA Electronic Communications Questionnaire, January 2016

Figure 1 – Total internet and data subscriptions, South Africa (ICASA, 2016)

Furthermore, figure 2 below, which supports the claim that mobile is the primary source of internet connectivity within South Africa, details the means of internet access split by type, province and access point across South Africa for the year 2016:

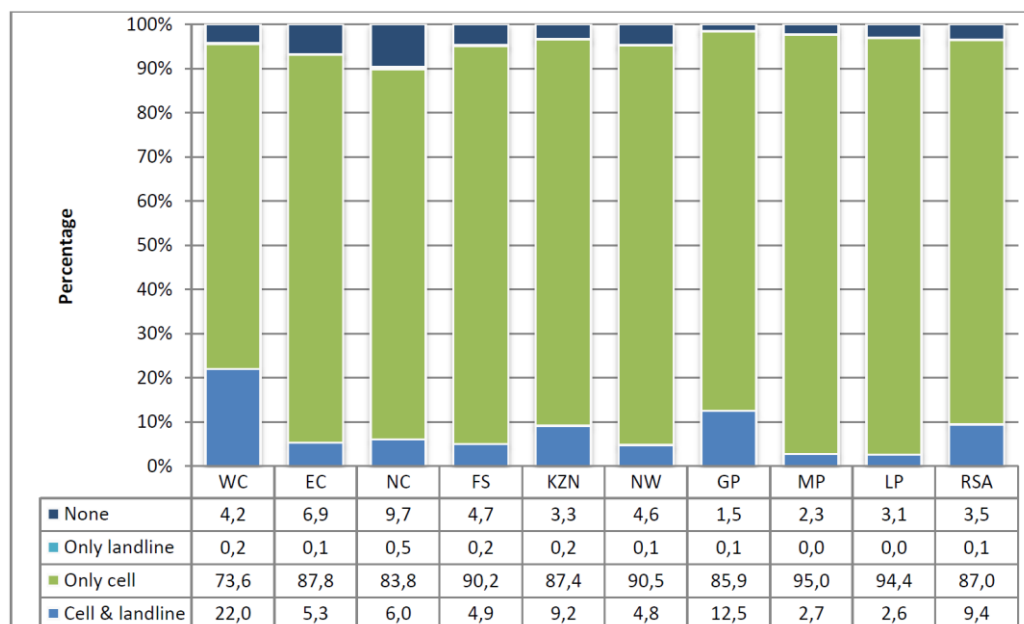


Figure 2 - Percentage of households who have a functional landline and cellular telephone in their dwellings by province, 2016. (Statistics South Africa, 2017)

Access to the internet is overwhelmingly accessed across the country through mobile devices. Within a South African context, mobile technology, through mobile devices, represents the broader country's preferred option to access the internet. The use of smartphones has increased access to the internet due to the fact that third (3G) and fourth generation (4G) technology has become more accessible to the broader population and second generation (2G) technology is becoming defunct.

Shoppers are using smartphones to glean product information, assess model specifications of products, run price comparisons and obtain technical advice. These mobile devices facilitate the convenience of making online purchases as opposed to trawling through the mall or browsing within a physical store. Often, consumers utilise the retailer's physical stores as showrooms to view, inspect and appraise products which they purchase thereafter from online retailers. The resultant effect is that e-commerce of which mobiles are an integral part, has grown by an average of forty billion dollars over the last three years (2013 – 2016). In the face of accelerated online growth in the United States, many retailers have had to close their stores and lay off staff. In the United States around eighty-nine thousand employees were retrenched between October 2016 and April 2017 (Corkery, 2017).

As a reaction, there are bricks-and-mortar retailers that have begun to utilise mobile technologies and facilities to fuse their online and physical assets into a unique consumer proposition which seeks to amalgamate the strengths of traditional physical shopping with that of e-commerce (Bouverot, 2013). This has caused retailers to rethink their strategy for their businesses and as a result, retailers have had to reconfigure the way their business operates. Through the use of mobile devices, retailers are attempting to maintain or gain market share, achieve transactional efficiencies, and gain an understanding of the consumer needs and wants through information sharing between consumers and retailers (Zhu & Kraemer, 2005). All of these elements are encompassed in the concept of 'value to the retailer'. Applications, a function of the abilities of smartphones, have spurred a USD 120 billion industry (Godfrey, Bernard, & Miller, 2016).

Central to this study is the understanding of why retailers believe mobile technology should form part of their omni-channel strategy. The technology is then broken into the platform, mobile applications, and understanding how adoption of mobile applications within a retailer's omni-channel strategy would result in business reconfiguration in order to create and co-create value. The focus will be on value creation and co-creation through the use of mobile applications. Value, however, remains a concept that is vast and for the purposes of this report, will be limited to the concepts of information sharing, market share gains and transactional efficiencies. These concepts relating to value creation were lifted from the e-business value hierarchy created by Zhu and Kraemer, so as to understand how value could be created through technology via e-business and be adopted to the mobile applications platform. This will be elaborated on further within the literature review section of this research paper.

1.3 Research Motivation

1.3.1 Business Need

Since the advent of Third-Generation (3G) and Fourth Generation (4G, LTE) technologies, which has brought about the increased ease of access to the internet and spurred the development of mobile applications, mobile has increasingly become more relevant in the retailers omni-channel strategy with mobile commerce being seen as the next generation e-commerce (Ting-Peng Liang, Chen-Wei Huang, Yi-Hsuan Yeh, & Binshan Lin, 2007).

Within mobile, a further platform of mobile applications exists. App Annie, a US based data analytics firm estimates that the global app economy will be worth in excess of USD136 billion by 2021 (App Annie, 2015). Retailers have caught on to this trend and developed mobile applications of their own

with traditional retailers such as Harvey-Nichols and Macy's in the United States and Woolworths and Mr Price in South Africa have all launched mobile applications.

However, it can be prohibitively expensive to invest in mobile applications and getting retailers to understand the benefits of exploiting mobile applications is a field that has not been fully explored as yet., a deliberate enquiry into the role that mobile applications play within the omni-channel strategy and attempting an understanding of the value that retailers can hope to extract from this, is needed. The geographic focus of this research will be confined to South Africa.

1.3.2 Academic Need

Research has been conducted around the need for an omni-channel presence within the retail environment (Brynjolfsson, Hu, & Rahman, 2013) as well as the need for traditional bricks and mortar retailers to innovate in order for them to remain competitive (Pantano, 2014).

From an academic perspective, however, the swift adoption of mobile applications and their resultant impact on the operational model used by traditional brick and mortar retailers is an area that requires attention. Understanding from retailers as to the value of an omni-channel strategy as well as the role that mobile

Balasubramanian, Peterson, and Jarvenpaa, (2002) began looking at the impact of mobile commerce ('m-commerce') and their impact on business. This research was conducted, however, with the adoption of third-generation technologies (3G) still in its infancy and fourth-generation (4G) technologies not yet in the market. These technologies are important as they each represented a step in the evolution of m-commerce through the functionality that each technology brought to mobile devices.

The speed at which mobile technology has been adopted as a result of proliferation of smartphones within the market has resulted in high levels of mobile application adoption (Yang, 2013) and the magnitude and manner of its impact on the resultant value creation processes is also of significance. Understanding how retailers aim to get consumers to adopt their application, specifically within a South African market, where data costs are high, is important as it will assist in understanding consumer behaviour. This then takes models like the Technology Acceptance Model (TAM) and its iterations (TAM2 & TAM3) and builds on them.

With most of the research currently being centred around the effects of mobile as a platform on an omni-channel strategy (Ting-Peng Liang et al., 2007), (Brinker *et al.*, 2012), (Pantano, 2014), (Lobaugh *et al.*, 2015), understanding how the value creation process within a retail environment needs to evolve becomes significant as this then advances the literature around value and value creation. Understanding how the business models being used by retailers need to evolve and the role that mobile can play in business reconfiguration is an area that requires attention as well.

However the primary focus of this research paper is understanding the value creation process that the adoption of mobile applications can bring about and looks at the concepts of value creation through the use of technology as well as the concept of value co-creation. Using these concepts as a base, the aim is to then use the research data to build on and evolve the theory by reviewing the phenomena that is the mobile application.

1.4 Research Objectives and Scope

The aim of this research is to understand how adoption of mobile applications within a retailer's omni-channel strategy would result in business reconfiguration in order to create and co-create value. It is specifically focused on mobile applications and their acceptance in the staid environment of the traditional bricks-and-mortar retailer. Understanding how the traditional constructs of value creation through technology applies as well as the new constructs that can be used for value creation is central to the study. In understanding how retailers believe mobile applications can assist in the value creation process, their stance on adopting an omni-channel strategy within their business will be reviewed. The role of mobile technology and mobile applications within that strategy will also be interrogated, to try and understand how mobile applications allow for an evolution of traditional strategies that retailers have been using within a bricks-and-mortar environment.

Once an understanding is gained around the retailer's views on mobile and the role that it plays within the omni-channel strategy, understanding how the retailers foresee it taking effect on the ways that they configure their business is then the area of focus. In addition, gaining an understanding on how these retailers plan on getting consumers to adopt and utilise the mobile application so that this strategy can be prescribed is also focused on within the research.

The research does not focus on the details of a particular mobile device, a specific application or a particular retailer. The research will concentrate on the general approach toward the benefits (value created or co-created) of using or developing mobile application(s) for traditional bricks and mortar retailers. This report will be primarily based on the Platform Theory (Negoro & Ajiro, 2012); (Choudary, Van Alstyne, & Parker, 2016), the role of m-commerce in a business (Balasubramanian et al., 2002) as well as the concepts of value, value creation and value co-creation. Value creation is discussed below.

The concept of value is vast, and the parameters around how value is defined will be limited to transactional efficiencies, market expansion and information sharing and supported by the literature and research undertaken will also work within these limitations of the definition of value.

Much of the literature around value within the retail environment includes: the concept of overarching value, the concept of value for the customer (Sirdeshmukh, Singh, & Sabol, 2002), value creation (Brock-Smith & Colgate, 2007); (Zeithaml, 1988), as well as perceived value for the customer (Sweeney & Soutar, 2001), has been focused on the consumer. Thus, a gap exists in the research around understanding what value to the retailer is.

Thus, for the intent of this body of research, the emphasis will be placed on value creation. Value creation will then be emphasised within the context of the retailer. As mobile applications in retail are customer facing, buy-in and use of the application by the customer is needed in order for the retailer to create value. As this requires input from both retailer and consumer, the research will also focus on the idea of value co-creation.

The significant research of Vargo and Lusch, (2004) as well as Prahalad and Ramaswamy, (2004) defines the concept of value co-creation between a business and its customers, which allows for interaction and information sharing between companies and consumers, as well as value to be created through these exchanges. These influential papers will be used as a basis to define value and value creation for the retailers, so as to assist in gaining an understanding of how firms are able to co-create value with customers through interaction (Grönroos & Voima, 2013) either through value-in-use, co-

production or a blend of both (Ranjan & Read, 2016). The conception of value creation and co-creation will be deliberated further within the literature review of this text.

In understanding the role of the new technology within business, the concept of Platform Theory (Choudary, Van Alstyne, & Parker, 2016) and m-commerce (Balasubramanian et al., 2002) will be reviewed. In understanding consumer adoption, the Technology Acceptance Model (TAM) will be the primary theory base.

The latitude of this research is limited to exploring the value and value co-creation of mobile application adoption only within traditional bricks-and-mortar retailers and is also limited to information exchange, transactional efficiencies and market share gain as the primary components of value creation. The research will be geographically limited to South Africa. The views and opinion of both retailers and major players within the mobile industry on mobile application adoption as well as value creation around the mobile application platform will be canvassed.

1.5 Industry Context to Research

The primary focus of the research will be on the retail industry, and the effects of the industry embracing mobile technology, which is the most widely accessible portal to the internet.

The 2017 KPMG report detailing risks for retailers within the South African environment details the threat to traditional South African retailers brought about by intense competition from both local and international players within the local environment. Additionally, to supplement competition, the fee and obstacles to entry into the marketplace is currently at an unprecedented low, with a great number of niche players converging and pushing change through innovative concepts and methods of servicing consumers (KPMG, 2017).

The report also talks about the influence that social media and mobile commerce have on retailers which is on the rise. Consumers have been placing additional pressure on traditional brick and mortar retailers to evolve and match the diversity and convenience that online retailers offer as well as enact quicker delivery times, thus placing stress on fulfilment expectations. The report concluded that consumers gravitated towards traders who provided the most efficient and most dependable multidimensional experience, which is grounded within their value/quality perception (KPMG, 2017).

In the paper “Competing in the Age of Omni-channel Retailing”, the authors (Brynjolfsson et al., 2013) consider the question of how technology is changing the retail landscape. Specifically, the advancement of mobile technologies on 3G and 4G devices as well as wearables that are amalgamating the “touch-and-feel” data in the physical world with online information. This has created an omni-channel domain (Brynjolfsson et al., 2013).

Therefore, mobile technology is progressively considered an enhancer of competitive advantage within business, added to its influence in satisfying consumers’ demand of qualitative and pioneering products and facilities (Pantano, 2014).

Progression in the abilities of mobile technologies coupled with improved computing competencies, combined with the growth of software architecture that is malleable and allows for automatic identification has led to widespread access to information for both firms as well as consumers (Pantano & Viassone, 2015).

With the need for traditional brick-and-mortar retailers to embrace innovation and evolution as evidenced by the demise of retailers such as American Apparel, Aeropostale and Pacific Sunwear (Turner, 2017) and Stuttafords within a South African environment, mobile technology through mobile devices has emerged as the most likely technology to assist retailers to grow with the swiftly changing retail landscape. Mobile technology has the ability to give retailers effective insights into consumer behavioural patterns. This allows them to target their consumers more accurately and cultivate the tools to encourage consumers to make purchase decisions that would favour products of the retailer (Grewal, Roggeveen, & Nordfält, 2017).

Smartphone penetration in sub-Saharan Africa is predicted to reach around 80% by 2022 (Gilbert, 2016). Mobile technology through devices has now become a platform that allows retailers the opportunity to diversify from traditional brick and mortar stores with a limited geographical reach to an amorphous global store.

In South Africa, mobile data traffic will rise 10-fold within a five-year period, between the years 2016 to 2021, which will be a compound annual growth rate of 57%. Mobile data traffic will grow three times faster than South African fixed IP traffic from 2016 to 2021 and mobile data traffic will be equivalent to forty-four times the volume of the entire South African internet in 2005. This is depicted graphically in figure 3 below:

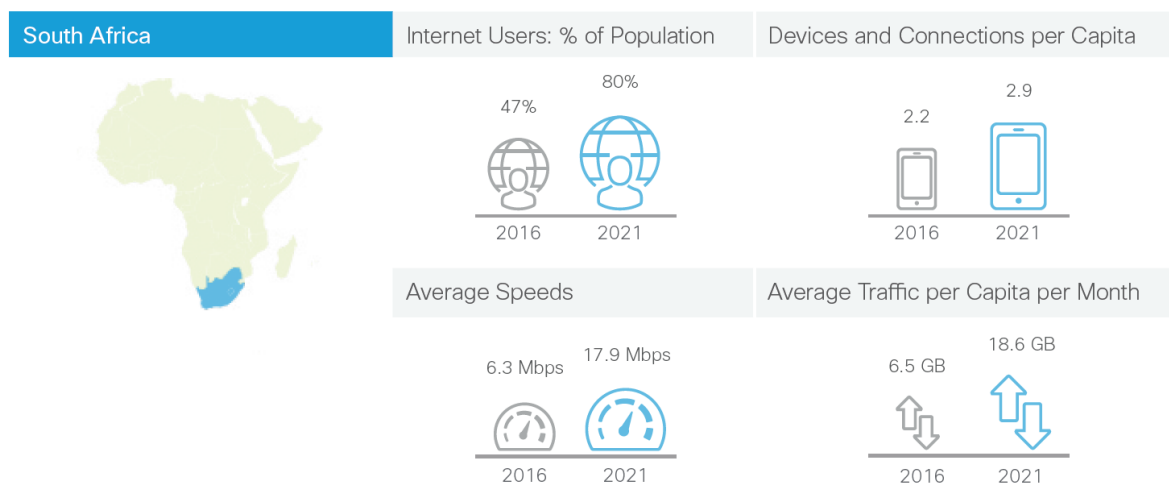


Figure 3 – A visual description of the advancement of connectivity in South Africa by 2021- Cisco

Although commercially available for less than ten years, the mobile application business has demonstrated tremendous growth concomitant with the demand for smart mobile devices. Applications, one of the most rapidly embraced technologies in human history, have transformed the software marketplace (Godfrey *et al.*, 2016). Shortly after the Apple App Store launch in 2008, “mobile-first” became the favourite phrase for marketing strategists and leaders who were quick to understand the potential that existed within mobile platforms. Traditional brick and mortar retailers such as Nordstrom switched cash registers for iPhones and iPads while online entities specialising in e-commerce scrambled to establish a mobile presence. A multitude of application stores embedded within a varied set of platforms primarily being led by those originating from Google Apple, Amazon and Microsoft (Godfrey *et al.*, 2016) exists now. Consumers devote more time on mobile applications than perusing the internet (Lipsman, 2014).

The rise in popularity of social media has allowed consumers to browse the latest trends in fashion, technology and food from singular or multiple applications. Conversely, it has afforded businesses the opportunity to explore direct marketing to consumers, allowing them to capitalise on current trends through data analytics based on consumer “likes” and searches. The rise of social media influencers has resulted in collaboration between brands, influencers and consumers through the use of the social media platform. Brands and businesses are also using these platforms to try and create more brand loyalty by showcasing their wares and interactions with consumers. Mobile applications such as Instagram allow for retailers to share pictures and allows for consumers to interact with the brand through the comments and likes that each picture garners. It also allows retailers the opportunity to showcase new items that are to be on offer. This allows for retailers to potentially collect data on consumer preferences and tailor offerings through this data.

It must be noted that for the purposes of this study, applications refer to a broad spectrum and encompass both specific mobile applications developed for retailers, as well as applications developed by external parties that retailers latch on to in order to promote and exhibit their products or services.

1.6 Outline of the Research Proposal

In Chapter 2, a critical view of the literature reviewed around the concepts of value creation within the retail industry will be presented. The theory around the technology, mobile applications that are used to create value will be reviewed. Understanding the concepts and parameters of value will also form a part of this Chapter. Understanding how retailers create value as well as the concept of value co-creation will also be examined in detail. This critical review will form the base of the research questions.

Chapter 3 builds on the research questions, identified within the literature review in Chapter 2. The research questions will form the basis of this study and with the literature, will build a foundation to critically examine the outcomes of this study.

The chosen research methodology used to conduct the research as well as any possible alternatives that may exist will be explored in Chapter 4. This Chapter is divided into three segments, namely, the research approach, the research philosophy and the research design

Chapter 5 consists of two sections: the first section will be an introduction and understanding of the questions derived. The qualitative data gathered through empirical research that is substantiated with interviews forms the second section. This all revolves around the research question as set out in Chapter 3.

Chapter 6 consists of a full analysis of the data collected.

The findings obtained during research are be presented in Chapter 7 together with recommendations and the identification of potential segments for future research.

1.7 Conclusion to Chapter 1

The research report talks to traditional brick and mortar retailers and their use of technology to remain competitive and relevant. There will be a specific focus on mobile applications as the primary technology. The research has three primary objectives, listed below, and will aim to satisfy both business and academic needs. The proposition then posed is: can this technology be exploited, through the use of applications as a platform, to enable retailers to gain information about their consumers so that they are able to integrate this information to co-create value with their customers and allow for expanded market reach while achieving transactional efficiencies?

To summarise, there are three objectives, primary of which is how value can be created through mobile applications:

- Understanding if traditional brick-and-mortar retailers believe an omni-channel strategy to be critical to their business and interrogating the importance of mobile within that strategy.
- Understanding the functionality that retailers deem important to the design of the mobile application and understanding how retailers would encourage adoption of the mobile application.
- Understanding how mobile applications can be used to create value for traditional brick-and-mortar retailers.

Chapter 2: Literature Review

2.1 Introduction

The brazen explosion in technology has given unsurpassed exposure to the parochial consumers to the vast global market. This has reshaped the competitive landscape for traditional brick-and-mortar retailers dramatically and irreversibly. This reconfiguration has compelled these retailers to find innovative and improved ways of competing both within their local markets and externally.

The purpose of this literature review is to use the theoretical base provided by the literature to determine whether the adoption of mobile applications by retailers has the ability to create value for the retailers or co-create value with their consumers. The literature addresses the following foundations: Firstly, the technological aspect focusing on mobile and the usefulness of applications in the mobile ecosystem as well as the adoption of these mobile applications by consumers and secondly, the understanding of the concept of value creation and co-creation between retailers and consumers.

The principal focus of the literature is to establish and support the primary research question of how these applications could be used to co-create value between retailers and consumers. The literature also allows for context of how and why retailers should use the technology to evolve their businesses, which talks to the secondary research questions that support the focus of this research paper – understanding how value is created through the use of mobile applications. The reasons for consumers to adopt mobile applications will be also reviewed and forms part of the secondary research questions. This would entail the factors relating to adoption to be examined so that there is a clearer understanding of adoption and value extraction.

The literature review will be divided into two segments:

1. Understanding the literature and theoretical base that underpin the why the technology is used and how adoption could be encouraged.

This review is based on research built on literature around mobile commerce, the Platform theory and supplemented by the Technology Acceptance Model (TAM), as well as literature around mobile commerce (“m-commerce”) and will be tied to research questions one and two.

Unlike in the past, a consumer wanting to purchase a product or a service can call on technology to assist her from browsing to making a decision on the product. The technologies used in the process are not discrete but imbricated to move a potential consumer to a consumer. Platform theory talks to the disruptive elements of embracing platforms over traditional linear value chains which created products and services flowing in a linear value chain connecting suppliers and consumers or what is called “pipelines” (Choudary, Van Alstyne, *et al.*, 2016). Digital platforms forge a value network that allows for an amalgamation of multiple services and products through a single entry point (the application). A variety of processes can also be integrated into the platform to expand the value network effect of the platform. The use of literature by Balasubramanian, Peterson, and Jarvenpaa, (2002) and Shankar and Balasubramanian, (2009) relate specifically to the role of m-commerce.

The Technology Acceptance Model (TAM) identifies the usefulness and ease of use as two determinants of user acceptance of computer based information systems. (F. Davis, 1985).

While developed to understand the adoption of information technology (IT) systems, it can be applied to mobile applications, a function of information technology. This model addresses the inclination of new users to download and engage with the mobile application and for the experienced users to remain committed to current and new iterations of the mobile application. An expansion on the original TAM that explains perceived usefulness and usage intentions of the purveyor of the mobile application in terms of social influence and cognitive instrumental processes.

2. The concept of value and value co-creation

As value is a concept that is central to this study, understanding of the concept of value creation and co-creation is critical to understanding how retailers can utilise the technology to create or co-create value for themselves and consumers. The literature central to value creation within this study originates from Lepak, Smith, & Taylor, (2007); Zhu & Kraemer, (2005) and Amit & Zott, (2001).

The article “Critical service logic: making sense of value creation and co-creation” analyses value creation and co-creation in service by analytically defining the roles of the customer and the firm and the scope, locus, and nature of value and value creation (Grönroos & Voima, 2013). This is supported by value co-creation, which examines the dimensions of co-production and value-in-use (Ranjan & Read, 2016). TAM, through the concepts of usefulness and usage intentions will be the link to understanding how possible adoption, then usage, drives value.

As value creation is the primary focus of this research topic, there will be an emphasis around the literature dedicated to the concepts of value creation. Once the pillars of value creation are established, they will then be tested in the data gathering phase to affirm the validity of the literature and understand if they hold true when applied to mobile applications.

In summary, platform theory and m-commerce theory expound on the base or model that retailers will use to launch mobile applications - the interface that connects the purveyor and user of the technology adopted. The TAM, again used in conjunction with m-commerce, uses perceptions of usefulness and ease of use as a measure of adoption of information technology and build a bridge between the platform (technology) and acceptance by the users. The concept of value creation and co-creation assists in understanding how retailers can utilise these technologies to potentially harness value within their organisations. The aim is to understand whether a retailer launching a retail application and the consumer adopting it, can co-create value for both the retailer and consumer.

2.2 M-Commerce, Platform Theory and the Technology Acceptance Model

Literature around the concept of mobile technology and the concepts of value can be traced back to 2002, with one of the earliest works on the concept and implications of mobile commerce (“m-commerce”) authored by Balasubramanian, Peterson, & Jarvenpaa, (2002). They formally conceptualise the meaning of m-commerce and explore the opportunities and challenges posed by the technology. This literature will be used as a base to understand mobile technology, m-commerce and its use within the retail environment. Synoptically, they construct that mobile commerce should possess the following characteristics:

- Interactive communication between two parties, be it human or machine;

- Contingent on at least one of the parties not relying on a fixed line communication, namely mobile communication;
- Allowing one or more of the parties to maintain communication while they are mobile;
- The means of communication should be electronic;
- There should be some sort of economic benefit in either the long or short term.

Furthermore, the authors go on to construct a classification scheme that builds an understanding of the various business strategies and their deviations across applications. They classify m-commerce technology as operating across the following three dimensions:

- The extent to which the mobile application is location sensitive;
- The extent to which the mobile application influences time (either saved or expended)
- The extent to which information, either received or sent or both, is controlled by the users or providers of the mobile application.

Lastly, the authors contrast conventional retail competition against retail competition within a mobile context. The authors take the model developed by Harold Hotelling (1929), which explored competition and differentiation, specifically focusing around the cost of transacting at a specific destination.

Hotelling, (1929) hypothesised that the total cost varied by location – the closer the consumer is to the market, the less the cost of transacting at that specific location. This can then be represented graphically in figure 4. Presented with a set of retail prices P_A and P_B , the consumer who has equal costs at shopping at either of retailer A or B, and thus is indifferent would end up at point O. consumers to the left of O purchase either from retailer A or B due to their lower transactional costs – it works out more costlier to travel to a lower priced retailer. Thereafter, retailers then make use of pricing to compete with each other.

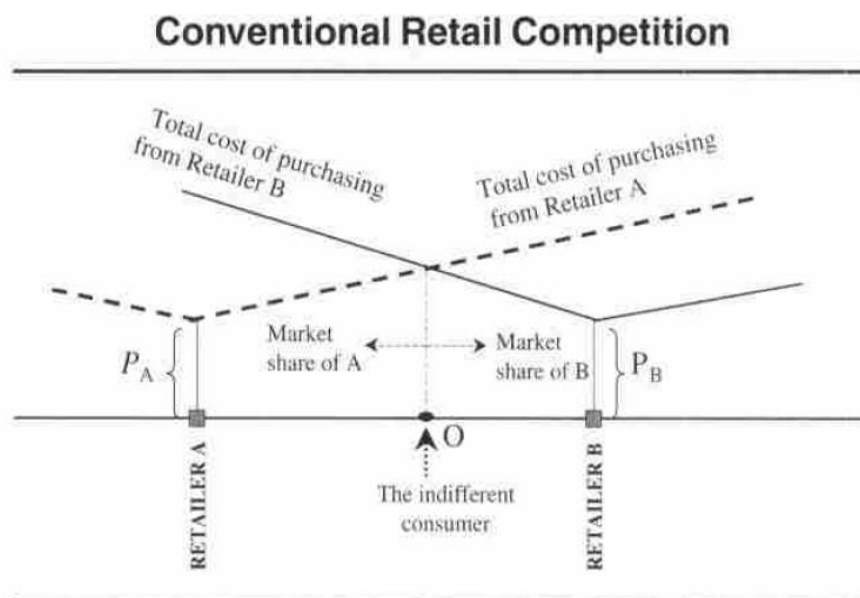


Figure 4 - Conventional Retail Competition - (Hotelling, 1929)

A significant determinant of from the Hotelling model is that increased costs of transportation allow retailers to exercise monopolistic power over consumers close to them.

However, mobile technologies allow for a broader spectrum of control for retailers when location and pricing are reviewed. Mobile pricing allows for location based services to target specific consumers

within a specified geographical area. Pricing could be targeted at consumers that would not ordinarily purchase from a particular retailer. Mobile devices can also be used for price discrimination, allowing retailers to target specific consumers with offers that represent a saving on the marked prices that might be offered in store. Figure 5 below represents the marketplace accessed from a mobile vantage point. P_{AM} and P_{BM} represent the prices charged by retailers over mobile, received by consumers on their devices. The consumer is located at Q , with probability of uptake tapering off at increasing distances from Q . R_{BW} and R_{AW} represent the geographical area around the retailers in which they are trying to target consumers.

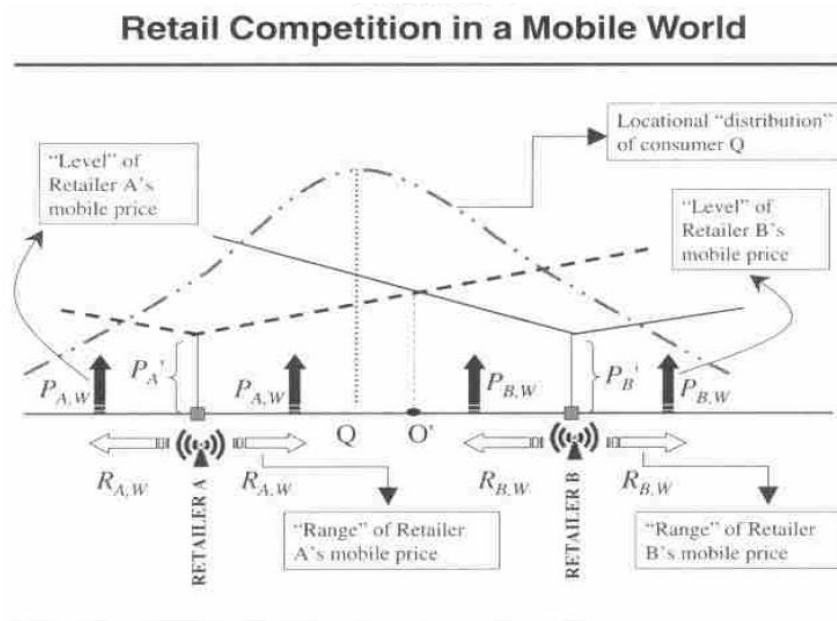


Figure 5 - Retail competition in a Mobile World - (Balasubramanian et al., 2002)

Retail pricing in a mobile environment, postulate Balasubramanian, Peterson, and Jarvenpaa, (2002) is be much more complex as a process and allow retailers to move between a fixed pricing model to a more flexible model, allowing retailers to establish an array of strategic pricing options. This is presented in figure 2.2 above.

The use of the diagrams above provides an interesting contrast between the models around conventional retail competition and mobile retail competition. The use of mobile allows for the transactional costs that a consumer endures to be varied by the location that they are in, enabled by the GPS capability on a mobile device, allowing retailers to entice consumers with offers when they are in close proximity to the retailer. This would then have the effect of lowering the transactional costs of both retailer and consumer. Transactional efficiencies will be discussed in more detail within the value creation sphere of the literature review.

By forming a link between Information Technology (IT) and business success, Drnevich and Croson, (2013) uncovered the mechanisms in which value is created and captured. They argued that IT enhanced a firms current capabilities and enabled new proficiencies including the ability to allow a firm to be agile and flexible so that there can be a focus on opportunities that exist within a rapidly evolving environment.

Flexibility permits a firm to rapidly respond to change in a way that enhances its efficiency or effectiveness within its given environment. Flexibility has its origins in Schumpeterian philosophy, which expounds on the process of creative destruction in which old practices are replaced by new ones that are more efficient in value creation. If it cannot be responsive to new demands, the firm can exit the market (Schumpeter, 1934).

Although Drnevich & Croson, (2013) were theorising on Information Technology in a broader sense, their postulate can be imported to mobile applications, which is, in any event, function of IT. It is critical for retailers to understand how to harness the power of mobile applications, which run on the most widely used technology (mobile, detailed in chapter 1) to access the internet in South Africa.

In the text depicted within 2.2.1 below, the literature on mobile platforms is examined as the primary theory base to understand platforms, with the Technology Acceptance Model (TAM) being used to supplement the platform theory. The reliance on TAM is to understand what drives the behaviour that encourages adoption of applications by consumers who's usage of the mobile applications are integral to measuring the success of retailers using mobile applications.

2.2.1 Platform theory

The interpretation of the term “platform” has spawned varied definitions coupled with a diversity of interpretations. To use of the Platform theory in a mobile environment, it is necessary to have an understanding of platforms and a grasp of the basis of the platform theory.

A platform, broadly defined is a grouping of technologies which act as a base on which other technologies, processes or applications are based on or built on.

Platform theory in essence can be broadly defined as a connection of infrastructure and rules that enables interaction amongst users of the platform (Eisenmann, Parker, & Van Alstyne, 2011). Furthermore, platforms have the ability to connect suppliers and buyers, through interaction and transacting, with the platform facilitating the transaction using system resources (Hagiu, 2009), also known as multi-sided platforms (Hagiu & Wright, 2015). It can further be broken down into the following components:

- Platform technology theory or the Platform Components theory which speaks to the mutual backbone technologies (such as hardware and software) used in the alignment or rollout of products. An example of this would be the Android operating system developed by Google that is adopted by many mobile original equipment manufacturers (OEM).
- Platform products theory which expounds on the products or services which only emit value when joined with information services or products provided by other players such as companies or consumers. (Negoro & Ajiro, 2012)

While both these components of Platform theory apply to the research undertaken, because the focus of the research is to understand if and how value can be created through the rollout of a platform (mobile application), the first component will assist in defining the technological relevance to retailers, with the second component supplementing the question of value creation through the combination of the technology and the physical products and services that the retailers have to offer.

The common denominator in the two components defined above is that they act as the base for a multitude of services and products, as explained by Negoro and Ajiro, (2012) below:

“The theory on platforms has a catalogue of research on the idea of platforms as a basis of investigating the competitive advantage and the value creation mechanisms between companies. The study has been piloted on an assortment of topics with a wide range in scope. The resultant effect is that the term “platform theory” has given rise to a number of definitions” (Negoro & Ajiro, 2012).

The works of Gawer and Cusumano, (2014) identifies the different types of platforms and brings together literature on industry platforms. The authors define internal platforms as product development and incremental innovation around reusable technologies. An example of this is a mobile application developed by a business which serves a very specific purpose, such as banking applications that allow users of the application to transact through the application. External platforms are constructed as technologies created by firms and on which other firms can build complementary innovations. The platform is noted for its attendant networking potential. Examples of this is the Android operating system, which serves as an operating system that multiple original equipment manufacturers (OEM’s) use as a platform for their hardware or Instagram, which is used by retailers and designers to showcase their ranges. The external platforms are different to internal platforms in that they are open to external firms for use (Gawer & Cusumano, 2014)

Industry platforms have been extensively discussed in academic literature. The word “platform” has become virtually pervasive, with the authors citing an extensive range of references that extend across multiple disciplines including the new product development, the field of operations management in technology strategy (Gawer & Cusumano, 2008; Eisenmann, Parker, & Van Alstyne, 2011); as well as in industrial economics .

Analysis from (Gawer & Cusumano, 2014) has concluded that there are two predominant forms of platforms that exist:

1. Internal or company specific platforms: These platforms are a set of assets that are organised in a common structure from which a company can efficiently produce a stream a variety of derivative products.
2. External (industry) platforms: These are defined as products or technologies that are similar to internal platforms, but provide the foundation upon which outside firms (the “business ecosystem”) can develop their own products and technologies.

The focus of this section of the literature is on both internal and external platforms – in this case mobile applications an internal platform, which will be used by retailers by leveraging off external platforms, which, in mobile technology are the operating systems on which mobile application are built (predominantly IOS and Android).

Internal platforms can exist as common strands that tie the firm’s offerings, markets and processes together and exploit these commonalities to create leveraged growth and variety – this has it’s origins in marketing literature (Sawhney, 1998). The researchers have also identified several potential benefits of internal platforms, namely: Fixed costs savings, efficiency gains and flexibility in designing product features. With regards to product feature design, platforms allowed for the ability to increase product variety and fulfilled diverse consumer requirements, business needs and technical advancements while maintaining economies of scale and scope. A downside to internal platforms was that adopters could not control the components on which the platform was built (Gawer & Cusumano, 2014).

External or Industry platforms, like internal company platforms, do not simply emerge without deliberate, firm-driven agency or deliberate managerial decisions and actions. And in platform markets—those industries characterized by a foundation technology around which third-party firms create complementary innovations, with adoption driven by positive feedback loops and network effects—the most likely winner is not necessarily the originator of the dominant design or the professor of the most elegant product, but rather, the most likely winner is the owner of the “best” platform. Gawer and Cusumano, (2008) argue that not all products, services, or technologies can become industry platforms. To perform this industry-wide role and convince other firms to adopt the platform as their own, the platform must

- (1) Perform a function that is essential to a broader technological system, and
- (2) Solve a business problem for many firms and users in the industry.

A persistent challenge that has come up is that as technology continuously evolves, business need to make technology or design decisions in an expeditious but coherent manner. Another challenge, which focuses around innovation dynamics is that platform leaders and competitors must navigate around complex strategic landscape where both competition and collaboration occur, sometimes among the same actors (Gawer & Cusumano, 2014).

However, as the subject of this research paper is focused around mobile applications the literature reviewed below focuses on the application of Platform theory within a mobile technology space.

The literature reviewed concentrates on the research that has been conducted around the ICT (Information and Communications Technology) industry, particularly on Platform Technology theory. The emphasis is on the concept of multi sided platforms (Hagiu & Wright, 2015) and application of the theory to mobile applications.

The Platform Products theory will also be examined. The theory talks to the value that a platform has when combined with products, services or other information supplied by consumers or companies.

Choudary, Parker, and Van Alstyne, (2016) elaborate on how platforms are being used to change the environment in which businesses operate in.

Advancements in technology have profoundly reduced the need to own physical infrastructure and assets. This means that the traditional “pipeline” businesses that create value through a linear series of activities have been disrupted by evolving technology. However, traditional “pipeline” businesses can be integrated with modern “platform” businesses. An example of this is Apple, which controls a “pipeline” business of manufacturing iPhones as well as a platform business that integrates the retail App Store with its traditional business-

Within a platform, the critical asset is identified as the community and the resources of its members (Choudary, Van Alstyne, *et al.*, 2016). The focus of the strategy is on orchestrating resources facilitating external interactions and maximise ecosystem value. Platform businesses bring producers and consumers together in high-value exchanges. The chief assets for both producers and consumers is information and interactions. The combination of the two creates a source of value created thus giving them a competitive advantage.

Though cast in different moulds, platforms all have an ecosystem with the same basic structure comprising four types of players as follows:

- The owners of platforms who control their intellectual property and governance. The Apple and Android ecosystems are examples of owners of platforms;

- Providers, who build and control the platform serve as the interface of the platforms with users such as the OEM’s who manufacture the mobile devices and the networks on which the devices operate;
- Producers are those who create offerings for those particular platforms and these would be the developers that conceptualise the application and retailers that provide the content;
- The consumers, of course, use the product.

The model in figure 6 below graphically relates the structure of the ecosystem (Choudary, *et al.*, 2016)

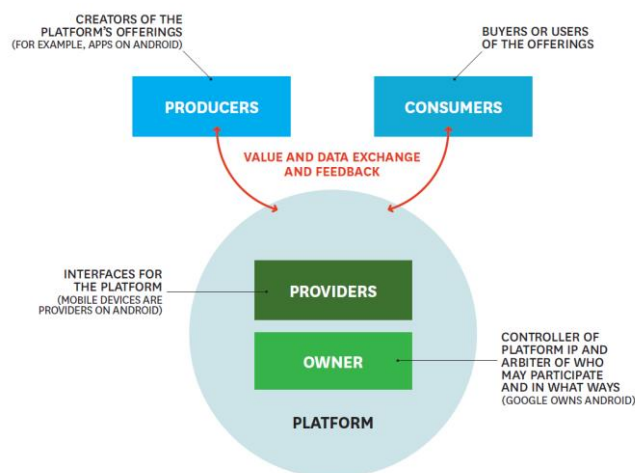


Figure 6 – Players in a platform ecosystem (Choudary, Parker, et al., 2016)

2.2.1.2 Platform Envelopment

In addition, the concept of platform envelopment is used to supplement the platform products theory. This concept refers to cross market functionality. This is where a purveyor within a singular platform market can penetrate an additional platform market and amalgamate its own specialisation with that of the new target market in a multi-platform package that influences communal user interactions (Eisenmann et al., 2011).

A simple example of this is retailers using an application such as Instagram to showcase their range of products. This allows retailers to migrate from a traditional model where the range is displayed in store or through print media, to a consumer viewing a range or offer on a social media platform or application either through the use of advertisements on the application or the consumer subscribing to the “feed” that the retailers publish. This could potentially expand the retailers market through heightened awareness facilitated through the use of mobile application technology. The envelopment and adoption of mobile applications is particularly relevant as it talks to the concept of retailers moving from the traditional bricks-and-mortar platform to the platform of mobile applications by leveraging on strong network effects as well as low transactional costs. Within platform-mediated networks, exchanges between firms or individuals who collectively comprise the combined network’s consumers—are enabled by a shared platform (Eisenmann *et al.*, 2011).

Platform envelopment integrates research around industrial organisation economics on network effects and bundling. Stabell and Fjeldstad, (1998) had recognised that platforms form part of a triumvirate and is an essential third of the structures that exist as a conduit in which firms can achieve

value. Eisenmann et al., (2011), building on this, found that platform markets are prevalent and have “paradigmatic value creation properties”. Their viewpoint draws on research around the concept of bundling in order to clarify the strategic and economic incentives for the use of platform envelopment.

As mentioned previously, platform envelopment operates off the premise that network effects (which talks to the value of a platform increasing in relation to the number of users) are leveraged. Interactions amongst entities and/or individuals form the base on which the network effect is enabled through a mutual platform. The actual platform itself, which is produced and preserved by a single or multiple arbitrators (application developers) incorporates mechanisms and directions employed by users that make up the majority of user exchanges (Gawer & Cusumano, 2014). User exchanges are dependent on network effects – the value of platform affiliation depends on the number of users that latch on to the particular platform as well as the scale of users that allow for interactions.

Exchanges on platforms have a structure that is triangular, where users network and transact with one another while at the same time associate with platform providers (Eisenmann et al., 2011). All platform-arbitrated networks have a principal platform at the very centre, although alternate platforms can perform a subsidiary role within the network. When the network effects are robust, it will result in users converging on less platforms and fewer platforms will be viable if users have relatively homogenous needs (Eisenmann et al., 2011).

Firms that develop a mobile platform should also consider economies of scope when cost allotment and saving prospects are obtainable from the promotion of specific items (S. J. Davis, Maccrisken, & Murphy, 2001).

Through exploiting common user associations as well as shared mechanisms within a multiple-platform package, entities can penetrate without employing Schumpeterian innovation, which states that innovation in business is the major reason for increased investment as well as business fluctuations. The use of envelopment eliminates a target’s access to users and couples demand to supply-side scale economies (Eisenmann et al., 2011).

Tying into the concepts of platform theory and platform envelopment, Shankar and Balasubramanian, (2009) review the use of mobile technology as a new platform on which to market goods and services. They link the utilisation of the platform to a value creation process through the medium of marketing, arguing that the platform could be used to influence customer preferences and their decision-making process by supplying information to the consumer with pertinent pieces of information to elicit an increased engagement rate.

2.2.2 The Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is used in this research paper not as a primary source of literature on which to base the research, but rather as a supplementation to the Platform Theory and a bridge to the concept of value.

Whether the placement of a platform will give value to a retailer is wholly dependent on consumers adopting the platform. This is bolstered by research conducted by Wu and Wang, (2005), who cite inefficient user acceptance as a barrier to the successful adoption of new platforms.

The original Technology Acceptance Model (TAM) applied by Davis, (1985) was developed to model how users come to accept and use a technology. This theory was based on the perception of usefulness and ease of use of a platform. The model considers an individual’s decision to utilise a system based on:

- The perceived usefulness to the users of the technology of the system that addresses the advantage or efficiency for the user that will be aided through the use of the system. A current example of this is applications such as Instagram or Twitter, which allows for the advantage of instantaneous sharing of ideas, thoughts, pictures or news to a wide audience simultaneously. In this case, mobile applications are seen by consumers as an instrument for completing a certain task. A study which examined the acceptance of mobile applications by the youth in America concluded that the perceived usefulness of mobile applications addressed the need for these consumers to be connected instantly and ubiquitously and to provide timely, exclusive and personalised information (Yang, 2013)
- The perceived ease of use of the technology that defines the ability of the user to effectively interact with the system in order to realise the anticipated results within the system. (Yang, 2013) An example of this is Samsung Pay, which gives the user the ability to make instant payments on their mobile device.

TAM, within e-commerce was further extended on by Lederer, Maupin, Sena, and Zhuang, (2000), as they adapted their research to investigate the TAM with the internet as an application. It was found by the authors that the availability of the necessary information and the ease with which the application can be navigated by the consumer is a determinant of its acceptance by consumers.

The TAM was originally taken in the context of information technology and was later expanded on in the article “What drives mobile commerce? An empirical evaluation of the revised technology acceptance model” (Wu & Wang, 2005) to focus on the determinants of mobile commerce acceptance.

However, the findings of their research concluded that ease of use was the only factor that did not influence the users’ behavioural intent implying that all other factors such as perceived risk, cost, compatibility and perceived usefulness, influenced the behaviour of the user regarding adoption and continual usage of the technology – in this case, mobile applications. Likewise, most of the research conducted around the evaluation of mobile application usability was conducted in laboratory settings. These studies typically used performance measures such as speed and error rates to evaluate the efficacy of mobile applications (Hoehle & Venkatesh, 2015)

In this study, the TAM will be used to bridge the theory around platforms and platform adoption, specifically through the component of perceived usefulness for the consumer and to a lesser extent, perceived ease of use. Through these components of the TAM, the research will aim to gain an understanding of whether adoption of mobile applications drives value for retailers.

2.3 Value: Creation and co-creation

The concept of value is a complex and multi-dimensional construct. A multitude of literature that focuses on value to the consumer exists. An understanding of value is central to this study and therefore clarity is required when trying to identify the elements of value that are most pertinent to the retailers who will be adopting mobile applications. The theory and research around the concept of value will be broken down into two different parts:

- a) Understanding the concept of value and value creation
- b) Value co-creation

2.3.1 Understanding the concept of value and value creation

Value is highlighted within the disciplines of economics, and has its genesis in exchange, function and labour value philosophies, as well as in marketing, accounting and finance. It also draws on the principles of psychology and social psychology. Scholars have come up with a variation of positions to describe value, generally distinguishing by context the same rudimentary concept, namely: consumption value, acquisition and transaction value, service value, customer value, consumer value and perceived value (Kim, Chan, & Gupta, 2007).

There are two types of value creation, as defined by Bowman and Ambrosini, (2000) that exist within an organisational construct : use value and exchange value.

Use value considers the value of a specific class of a new job, service or product as viewed by consumers relative to what they need. In this instance, individual and specific judgements are made.

The second type of value, exchange value is defined as a monetary amount realised at a specific point in time when the exchange of a new service, product commences or the time when the amount paid by the user to the seller for the use value of the product or service.

When combined, these definitions suggest that value creation is dependent on the comparative amount of value that is individually recognised by a target user who is the focus of value creation. For this value to be realised, there needs to be a willingness by the user to exchange a monetary amount for the value (Lepak, Smith, & Taylor), (2007). The authors go on to further suggest that the extent of new value creation will hinge on the target users appraisal of the appropriateness and novelty of the new service or product. The greater the apparent appropriateness and novelty of a product, the greater the prospective use value and exchange value to the user.

Expanding this to an organisational level, the authors refer to the works of Porter, (1980), who elaborates that novel value is constructed when entities are innovative in the way that they operate, with a focus on how the target user could potentially gain value from use of this innovation – innovation influences the value creation process.

A pioneer of the concept of value creation through technological progress and innovation was Schumpeter (1934). Innovation, for him is the source of value creation. He emphasises the role that technology has to play and considers novel combinations of resources and the services provided by these resources as the foundation of new products and production methods (Amit & Zott, 2001).

Added to this view on value is research from the field of strategic management, specifically dynamic capabilities. This theory also examines value creation within firms by focusing on how organisations evolve within the environmental change process by creating new advantages when old ones become obsolete as defined by Teece, Peteraf, and Leih, (2016). They further break down dynamic capabilities into three distinct clusters:

- “Identification, development or co-development and assessment of technological (Lepak et al., 2007)opportunities and threats in relation to customer needs
- Mobilisation of resources to address the needs and opportunities and capture the value from doing so
- Continued renewal.”

(Teece *et al.*, 2016).

However Eisenhart and Martin, (2000) reason that dynamic capabilities are increasingly conventional and willingly accessible methods and procedures that relate to the process of resource acquisition, incorporation and reconfiguration.

Lepak *et al.*, (2007) propose that the success of a firm is dependent on their capability to provide original and greater consumer value. They note, however that the customer is not the exclusive focus of value creation. Rather, the customer should be considered as part of the broader set of responsibilities of the firm. This approach broadens the organisation’s responsibilities and encourages a long term commitment. This view, therefore offers a more varied viewpoint on what constitutes value and allows for entities to reconfigure and incorporate the multiple perspectives into their strategy design, should be considered.

The literature also reviews how value can be captured within an organisational level. The concepts of value chain analysis are reviewed and Porter, (1980) is utilised in understanding how firms reconfigure their primary and support functions to maximise value for an entity.

Porter, (1980) suggests that for a business to define and preserve its competitive advantage, the distinct activities of the business (defined as the value chain) need to add to its overall competitive strategy. If there are activities that do not enhance this competitive position, those activities must be reviewed or eliminated. Porter then provides a model of activities that, in his opinion, identifies as common to every business. The Porter value chain model is made up of primary and support activities. Figure 7 graphically details this:

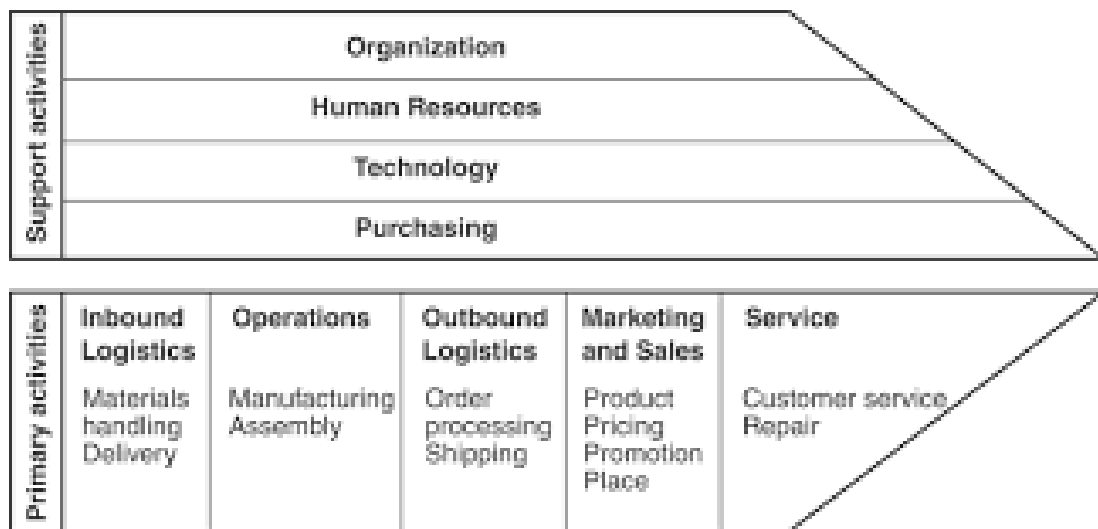


Figure 7 – Porters Value Chain (Porter, 1980)

Lepak, Smith, and Taylor, (2007) conclude that value can be created and captured through the firms use of resources that are innovative and difficult to imitate and through resource management.

The adoption and usage of mobile and its applications is closely related to the concept of M-commerce, which is a variant of e-commerce (Kim *et al.*, 2007). Extensive research has been conducted into the value that lies within e-commerce (Amit & Zott, (2001); Turban, Aronson, & Liang, (2004); Delone and Mclean, (2004)) and theories relating to e-commerce will be applied to mobile applications within this study.

Central to understanding the concept of value is the work of Zhu & Kraemer, (2005) who have looked at the value of e-commerce within the retail environment. The research uses the Resource Based View (RBV) as a basis of linking e-business and value. This theory surmises that firms gain a competitive advantage through the exploitation of their internal advantages, responding to environmental opportunities and by neutralising external threats and internal weaknesses (Barney, 1991).

Zhu and Kraemer have determined the following three characteristics of value and value creation within e-business:

- Market Expansion
 - Transactional Efficiencies
 - Information Sharing and Integration.
- (Zhu & Kraemer, 2005)

These three elements will form a part of value creation as described by Zhu and Kraemer, (2005) as they have constructed a value model around understanding value within an “E-Business” (electronic business) environment, which is the closest environment to which mobile platforms can be compared to.

- Market Expansion

With the increased accessibility to the internet through the use of mobile devices, business models have had to adopt the new platforms that are available in order to leverage off the opportunity that is present through the adoption of these platforms.

These platforms have created space for virtual communities who are a complex network of communities sharing similar needs and aspirations. Through these platforms and virtual communities, retailers have the potential for geographical and demographical expansion (Hagel, 1999).

The idea of market expansion is reinforced by the works of Welch, Liesch, and Peterson, (2002) who argue that the internet has the ability to increase the efficiency of market transactions as it allows for uncensored search options and allows for the conveyance of information with speed and ease.

Elements of market expansion are also linked to transactional efficiencies, which are examined below. This connection is due to economies of scale being achieved through the market expansion (Zhu & Kraemer, 2005).

In addition, lock in, which refers to consumers engaging in recurring transactions, can be achieved through the leveraging of various interactive applications such as the introduction of loyalty applications, virtual communities and customisation (Amit & Zott, 2001). Shankar and Balasubramanian, (2009) talk to the ability of mobile to transcend boundaries. Within their article, they talk to reach consumers within a wider geographical area and use the example of firms trying to expand internationally utilising mobile marketing to reach the international consumer, despite the geographical gulf between the physical location of the entity and consumer. Applying this then to the concept of market expansion, retailers are able to harness the power of mobile to communicate and interact with consumers to be able to market their products to consumers irrespective of their geographical location, which could then result in the retailers transacting with their new consumers through either physical location or online.

- Transactional Efficiencies

Transactional efficiencies are based on foundations of transactional cost theory and organisational design. Transactional cost theory talks to the costs involved when buying or selling a good or service. The ability to reduce transactional costs results in achieving lower costs of products and services and improved efficiencies within transactions (Mahadevan, 2004). Roberts and Greenwood, (1997) argue that increased competitive pressures drive organisations towards efficiency through new channels.

Furthermore, creating conditions in which transaction costs are reduced to zero should be one of the primary goals of entities that are transacting and seeking to maximise profits (Dyer, 1997).

In their widely cited paper “Value creation in E-Business” Amit and Zott, (2001) examine transaction costs economics. In their view, reducing the transactional costs may also result in indirect costs being reduced which in turn could bring about an increased number of transactions, reduction in transaction uncertainty as well as a reduction in asset specificity (through provision of a wide array of transaction specific information (Amit & Zott, 2001). This journal article will be examined in more detail further on in the literature review around value creation.

Williamson, (1975) writes “Transaction cost economics classifies efficiency of transactions as a primary foundation of value, as improved efficiency diminishes costs. It proposes that creation of value can be derived from the reduction of complexity, uncertainty, small-numbers bargaining conditions and information irregularity”. The small-numbers bargaining condition may be dismissed in the virtual market state through the potential of large numbers of formerly unrelated parties (e.g., seller and buyers) to co-operate (Amit & Zott, 2001). This also talks to market expansion which facilitates the ease of transacting and allows for a wider range of consumers to transact using the specific platform.

Mahadevan, (2004), talks to the internal savings that could be brought about through the use of technology – specifically pointing out to the time saved as transactions and payment can be realised in real-time. The article also points to the fact that efficiencies can be achieved through more accurate planning. This leads to significant cost savings through improved resource rationalisation – reducing the costs of transacting. The reduced transaction costs in this case are applied to business to business (B2B) transactions, but would apply to business to customer (B2C) transactions as well.

Roberts and Greenwood, (1997) then link information sharing to transactional efficiencies articulating that the quality of the information flow has implications on the costs of transactions within an organisation. They also observe that in a situation where efficiencies have fallen below a level that keeps the organisation competitive, the decision makers within the organisation may search for a new design that brings the level of efficiency required up. Within a South African context, high wage and utility bills, combined with currency deflation and general inflation compounded by low economic growth (Kelly, 2016) increase the costs of operating and thus transacting. Thus, for retailers, finding new ways of enhancing efficiencies that reduce transactional costs not only for the retail entities, but consumers as well, remains a priority and a means of operating in the future.

- Information Sharing and Integration

“Consumers are arbiters of value” (Priem, 2007).

Understanding the preferences and needs of consumers allows for a retailer to tailor their offerings to best suit the choices of the consumer. Knowledge creation is also described as a

dimension of value creation and an integral part of the value creation process (Bowman & Ambrosini, 2000).

Thus, engagement with customers is integral to gaining knowledge around the decisions that they make as well as the motivation behind those decisions. Engaging in knowledge-based interactions is necessary to the co-creation of value (Maglio & Spohrer, 2008). Within virtual communities, where the users of mobile applications reside, effective communication is key to converging users that have a common set of needs (Hagel, 1999).

Information sharing and integration also allows for network effects to take hold allowing for more users on a platform, thus promoting the platform.

Kulp, Lee, and Ofek, (2004) link the gathering and sharing of information between consumers of retailers and the supply chain, arguing that information sharing is a form of collaboration. The needs of the consumer are shared between retailer and various elements within the supply chain. This information is then built up to effectively manage inventory levels, distribution according to customer needs and assists in the profit creation within the supply chain through improved performance. Shankar and Balasubramanian, (2009) argue the case of focusing on learning more about the consumer that an entity services or wishes to capture. With consumer's choices evolving, they argue that the need for intensive, detailed communication with the consumer is declining and being replaced with efficient, pertinent information that highlights the existing needs of the consumer. Central to providing this information is gathering information around the consumer and their needs. Entities can then communicate specific, relative pieces of information in order to enable a transaction that speaks to and stimulates a consumer's decision making process.

The research covered by Amit and Zott, (2001) which draws on the works of Schumpeter, uses a resource based view of the firm (RBV) as an approach on value creation. The RBV states that marshalling and uniquely combining a set of specialised resources and capabilities may lead to value creation (J. Barney, 1991) – essentially, value can be created through a distinct bundle of resources and capabilities that the firm has to offer. A firm's resources and capabilities 'are valuable if, and only if, they reduce a firm's costs or increase its revenues compared to what would have been the case if the firm did not possess those resources' (Barney, 1997) .

Amit and Zott, (2001) explain that an integration of received theoretical perspectives on value creation is required. The study by the authors further elaborates that for potential value creation to exist, there are four elements that need to be factored in, namely:

- Efficiency (specifically transactional efficiency and greater transactional efficiency gained)
- Complementarities (between the technologies and goods or services)
- Lock-in (loyalty, customisation, positive network externalities)
- Novelty (new transactional content and platforms) (Amit & Zott, 2001).

These elements are broken down diagrammatically in Figure 8 below:

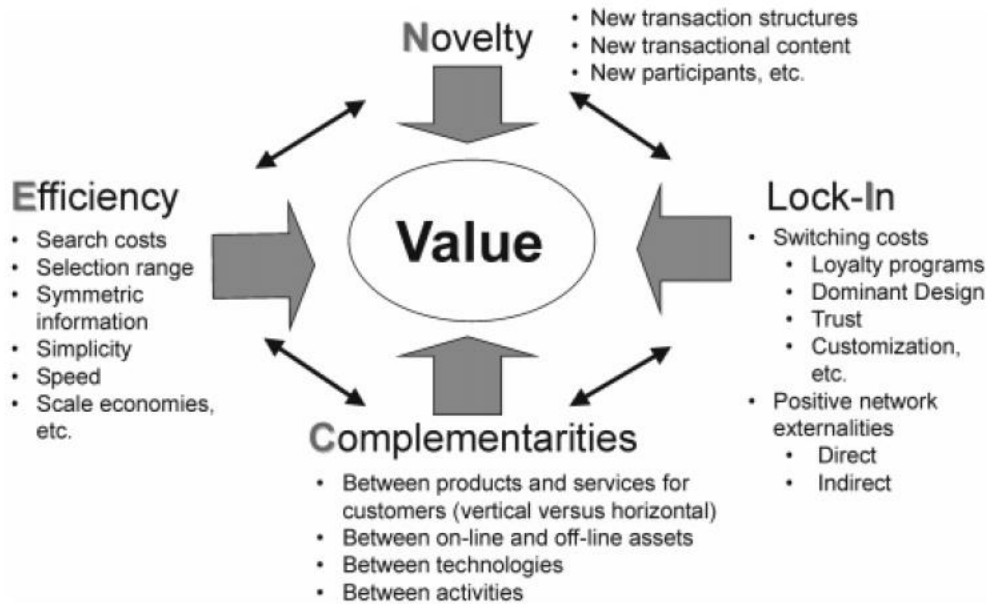


Figure 8 – Sources of Value Creation (Amit & Zott, 2001)

- **Efficiency:** Transaction efficiency is one of the main drivers of e-business, which relates to the previously discussed works by Zhu and Kraemer (2005) and builds on Williamson, (1975). The efficiencies could be enhanced through comprehensive information sharing and the reduction of consumers search costs. By leveraging the relatively inexpensive interconnectivity of mobile platforms, retailers could improve transaction efficiency that will enable faster and more informed decisions. Efficiency also allows for customer retention as well as attracting new customers by offering a relative increase in benefits to the consumer when compared to traditional bricks-and-mortar operations.
- **Complementarities:** This refers to the value of having a bundle of goods as opposed to separate goods. Entities can leverage the potential value creation through creating bundles of products and services for consumers. This could be split into vertical complementarities such as added services, back end services or horizontal complementarities such as single destination shopping. Retailers could use a mobile platform to encourage cross-sell, encouraging consumers to purchase complimentary products or utilise the platform to enhance back-end services
- **Lock-in:** The value creation is improved by the level to which consumers are driven to engage in recurring transactions and motivating strategic allies to maintain and improve their associations. Lock in allows retailers to inhibit the migration of consumers and tactical associates to competitors. Lock in can be aligned to transactional costs, which are fixed to (Williamson, 1975) transactional costs frameworks. This dovetails into the convenience factor of having a single destination for the consumer, reducing transactional costs on both their side as well as on the side of the retailer. This would be through data and information sharing in order to map out consumer trends, purchase patterns and choices. Mobile applications, similar to virtual markets, allow for information sharing, swiftness of information dispensation and absence of geographical constraints.

Efficiency and complementarities, both described earlier, also assist in achieving lock in. Lock in is further tied into the concepts of consumer loyalty, which has been a major focus of retailers through various loyalty programs which try to ensure customer retention.

Shankar, Smith, and Rangaswamy, (2003) contrasted the loyalty levels between consumers that shopped online and offline and found that online consumers display higher levels of loyalty and that the reciprocal relationship between loyalty and satisfaction further reinforces the theme of lock-in. Further, they recommended that in order to drive loyalty, a rewards system should be in place so that consumers are incentivised to remain loyal.

- Novelty: Traditional retailers have used the introduction of new products, distribution or marketing or expansion into untested markets to draw consumers through these new ideas or products.

Mobile platforms, however can leverage of those factors and use the structuring of unique transactions as an additional source of value creation. Information sharing and the uniqueness of the transaction allow for value creation through connecting previously disparate parties. Novelty and lock in are linked through two ways: innovators on the platform have an advantage in attracting and retaining customers; secondly being first to market is a prerequisite to being successful (Katz & Shapiro, 1985). There is too, an association between efficiency and novelty. Some efficiency components of the platform may be due to original assets that can be shaped and exploited by retailers through the setting of virtual markets. Shankar and Balasubramanian,(2009) talk to the concept of using mobile as a medium of attracting new consumers due to the ability of the platform to transcend borders at a relatively low cost.

These elements can be exploited by retailers through the use of firm-specific core competencies and resources and also draws on the resource based view (Barney, 1991).

The drawback to this literature is that it was published in 2001 and is constructed primarily around online businesses. However, the platforms are not too dissimilar, (online and mobile applications) and the learnings from this study can be applied to the platforms of mobile applications.

Finally, according to Grönroos and Voima, (2013) there are three spheres in which value is created:

- The provider sphere where the firm, in this case, the retailer, acts as a value facilitator and creates potential for value
- The customer sphere where the consumer autonomously creates value through use with the firm acting as a value facilitator through the provision of goods and services
- The opportunity for the firm and customer to interact, collaborate and co-create value (Grönroos & Voima, 2013). This will be covered in the value co-creation literature review.

2.3.2 Value co-creation

Traditionally, companies and consumers had specific roles within the process of value creation. Products and services contained value and markets facilitated the exchange of this value. Mobile allows for value creation to occur outside these markets (Prahalad & Ramaswamy, 2004).

Value co-creation stems from two sources:

Vargo and Lusch, (2004) believe it to be a principle function of service –dominant logic, which dictates that the marketing function provide services to satisfy the consumer as opposed to exchanging of goods.

Value co-creation is a natural progression of value creation reason Prahalad and Ramaswamy, (2004) as abundance of choice becomes available to consumers, and to keep a sense of relevancy, firms must adopt this new approach to value creation.

Value co-creation is important to retailers who adopt mobile applications, as consumers need a reason to engage with the mobile application that retailers may be utilising. Understanding how value may be co-created with the consumer gives a handle on the manner in which value could be forged for the retailer.

The concept of collaboration between firm and consumer has its roots in the theory of value-in-use. Value-in-use was originally introduced by Vargo and Lusch, (2004) when the concept of Service-Dominant (SD) logic was developed and further expanded into the concept of value-in-exchange.

SD Logic, by its very nature focuses on consumer needs and the ways in which entities (retailers) can fulfil those needs. However, being service dominant is more than being consumer focused: it involves collaboration and information sharing between retailers and their consumers getting an insight into the behaviour of consumers and their needs and being agile enough to adapt and fulfil those needs. SD logic, looks for the thoughts of the consumer that precedes and follows the transaction because the entity emphasis is placed on what precedes and follows the transaction as the entity is seen as engaging in a relationship with the consumer. This is more important than the actual transaction.

This view emphasises that the consumer is central to all decision making. In order to satisfy consumer needs, involvement of the consumer needs to happen. Information sharing and feedback from consumers can be used to gauge financial performance through analysis of the exchange relationships in order to study consumer requirements and improve offerings to the consumers and improve the performance of the entity (Vargo & Lusch, 2004).

The authors also spoke about the concepts of value-in-exchange and value-in-use. Whereas the former denotes to the traditional concept of one-sided value creation, the latter gives rise to the argument of value co-creation(Coetzee, 2016).

Value–in-exchange is derived from goods-dominant (GD) logic which initiates that value is professed to be added to goods through a firms processes. The effect is that the firm supplies value and its consumers receive value. However SD logic implies that a firm cannot deliver value on its own, but rather use its resources in a collaborative manner to co-create value with its consumers.

Value-in-use refers to the perceived benefits of a product or service based on the consumers' evaluation of a product against their perceived costs.

An example of value in use is a retailer offering a discount if a consumer “likes” or “shares” a picture of the retailers offering so that a consumer can redeem a discount on the item. For retailer specific application, the retailer could offer to deliver the item without a charge or give a discount on the price if the item is purchased through the application. The interaction between the retailer and consumer via the mobile application has resulted in value for both consumer and retailer – consumer has achieved value through the application by receiving a discount on the offering, potentially not having to go into store thereby achieving efficiency in their transactions; the retailer has gained value by

understanding what drove consumer behaviour, mapping consumer tastes and of course, making the sale.

Within this sphere, co-creation needs to be contrasted against value co-production. There is extensive research around value-creation (Ranjan & Read, 2016; Yi & Gong, 2013). Vargo and Lusch, (2008) argue that co-production is an offshoot of co-creation – distinct portion of co-production where consumers are involved in product design.

This was countered by Grönroos and Voima (2013), however, who argue that value co-creation lies neither value-in-exchange nor value-in-use because both retailer and consumer are parties to the concept of value. They argue that the notion of value co-creation needs to be specific and distinctly defined in terms of the origination of co-creation as well as the roles that both the provider (retailer) and consumer have to play. They argue that value co-creation is a non-linear process. It does not immediately follow the provider's activities. Rather value accumulates with experiences and originates with usage – it is a function of interaction between the consumer and provider.

Grönroos and Voima, (2013) further elaborate that there are three spheres in which value is created:

- The Provider Sphere: The firm does not create value, but rather acts as an enabler of value.
- The Customer Sphere: Through use, the consumer individually creates value, with the firm once again acts as a facilitator through provision of goods or services.
- The Joint Sphere: Interaction between the firm and consumer directly results in value creation.

They also argue that for value co-creation to occur, interaction is an essential part of this value co-creation – but argue that interaction needs to be fairly direct. Interaction occurs between the retailer and the consumer.

Countering this view, Vargo and Lusch, (2016) pose that value co-creation is not the result of the interaction between the entity and consumer only, but rather between a host of actors. They further elaborate that value is co-created by means of the incorporation of assets, through multiple fronts, including a comprehensive range of market facing, public and private participants.

While Vargo and Lusch, (2004) & Vargo and Lusch, (2008) have regarded value co-creation as a result of SD Logic, there is an alternate view provided by Prahalad and Ramaswamy, (2004), who believe it to be an outcome of change within societal norms.

Because consumers have greater access to information, the phenomenon of globalisation and endemic networking, resulting in consumers being more connected and informed. Therefore, emphasis needs to be placed on crafting the right quality of experiences in order to satisfy consumers, and not just on the quality of services and products. Through information sharing and interaction, the firm can learn more about its consumers – aspirations, desires, motivations, behavioural patterns and agreeable trade-offs. Based on this data the entity can then tailor its offerings, based on this information and relate their offerings to individual consumers. Thus uncertainty in capital commitments can be reduced and environmental risks averted. As the consumer-company interaction becomes more important, Prahalad and Ramaswamy, (2004) have developed a model of the key building blocks to value co-creation, detailed below:

- Dialogue – Implies shared learning and communication and allows for loyalty creation and maintenance (lock in).
- Access – Refers to the tools and information that can be utilised to harness this information and assist in value co-creation.

- Risk Assessment – Addresses the level of exposure that the consumer faces and which consumers expect to be appraised of. Thus in turn provides entities with data and methodologies for assessing and controlling risks.
- Transparency - Removing the opaqueness of information surrounding pricing and product as information becomes more readily accessible.

This is consistent with earlier literature around multi-sided platforms that allow parties to affiliate with the chosen platform and then interact or trade using the resources available on a platform. An example of this would be a traditional bricks and mortar clothing retailer adopting a mobile application to try and create, for both itself and consumers, value through consumer adoption and interaction. This would allow, for example transactional efficiencies for consumers and lock in for retailers. Value-in-use allows for co-creation in its interaction through the application and through information sharing between retailer and the consumer.

There is an argument brought about by Prahalad & Ramaswamy (2004), who view that there must be a new approach to value creation with companies no longer being able to act autonomously in order to create value for themselves. Consumers now want to influence all aspects of the business. They want to relate with firms and co-create value and the practice of collaboration as the base of co-creation becomes the very basis of value.

The linkage between platform theory and value comes from the communities, the resources that the communities control as well as the information and exchanges conducted between those communities. Platforms seek to maximise the total value of an expanding ecosystem in a circular, iterative, feedback driven process. The platform allows for value creation through almost frictionless contribution that reinforces network effects and improves the ability to exchange, analyse, and capture large swathes of data that escalates the platform's value to all. (Choudary, *et al.*, 2016). It is clear then that knowledge and information sharing along with collaboration and interaction is key to creating value within the platform ecosystem. Value is co-created within the ecosystem that the platform exists in.

The utilisation of an ecosystem is brought about by Vargo and Lusch (2016), – more specifically, a “service ecosystem”, which they define as “a relatively self-contained, self-adjusting system of resource integrating actors connected by a shared institutional arrangements and mutual value creation through service exchange”. They argue further that institutions and technology can be linked through knowledge. Technology is useful knowledge and understanding that technology is part of the institutional framework.

Institutions, they explain, allow for participants to achieve an increasingly-growing level of service exchange and enable value co-creation under time and cognitive constraints and take on an extended role within S-D logic. They argue that the greater the number of actors sharing the institution, the better the level of potential co-ordination advantage amongst all actors. Institutions are multi-faceted; they can appear as “ prescribed codified laws, informal societal norms and conventions, such as conceptual and symbolic interpretations, or as any other rubric that delivers a shortcut to cognition, communication and decisions” (Vargo & Lusch, 2016). Value co-creation is generated through actor generated institutions and institutional arrangements. The authors also expand on the role that technology has to play within S-D logic. S-D logic highlights technology usage through the use of operant resources, which are actually resources integrated from a host of actors. Institutions allow for co-operation, co-ordination and collaboration of various actors within the value creation process and play a role within economic growth. Institutions thus play a role in the potential of technology being

realised. Once the technology has been accepted, it becomes an essential portion of the market component of innovation.

There is a focus on a more firm-centric view of value co-creation brought by Yi and Gong (2013), and they have discovered that two types of behaviour that are necessary for value co-creation:

- Customer participation behaviour that refers to the behaviour necessary for successful co-creation of value. This consists of information seeking and sharing, responsible behaviour and interaction. Firm emphasis is put on the consumer behaving in a certain manner in order to achieve value.
- Customer citizenship behaviour that is voluntary behaviour that results in extra-ordinary value for the firm but is not always required for value co-creation (Yi & Gong, 2013). This consists of feedback and advocacy in order to achieve value.

Ranjan and Read, (2016) have put a more consumer-centric view on value co-creation forward. They have identified the two factors in value co-creation as value-in-use and co-production. The value-in-use definition holds true to the previous definition provided. Co-production refers to knowledge-sharing, equity and interaction.

Irrespective of the views of value co-creation, whether it be as an effect of progressive business thinking (Vargo & Lusch, 2004) or as a result of societal progression and influences (Prahalad & Ramaswamy, 2004), it implies that businesses will have to evolve and focus on effective collaboration. This then influences how a firm utilises its resources as well as the mechanisms that it could use for effectively collaborating with consumers.

2.4 Conclusion to Chapter 2

Understanding how the theory around the technology employed by retailers links with the literature around value creation is fundamental to understanding how the technology adoption (mobile applications) allows for value creation and co-creation for retailers.

Lepak, Smith, and Taylor (2007) suggested that the customer needed to be incorporated into the decision making process of the firm in order for value creation to occur. This should be part of a larger consideration incorporating stakeholders in order to create value and links to the theory around value co-creation.

A grasp of the reasons that motivate consumers to adopt certain applications in a particular sector is key to understanding value, which is why the TAM is examined as part of the literature review.

The pre-eminent research on linkage of value within the technology is Zhu and Kraemer, (2005) & Amit and Zott, (2001) . While specifically focusing on e-commerce, it allows for adaptation of the principles to mobile platforms as well. The key drawback to this research is that it is dated, having being published in 2001 and 2004 respectively. However, both sources are widely cited.

The principal sources of value creation that will be carried over into the primary research question around value creation through the utilisation of mobile applications will then be:

- Market Expansion
- Transactional Efficiencies

- Information Sharing

While these originate within the works of Zhu & Kraemer, (2005), it is supplemented by the research conducted by (Amit & Zott, 2001), who look at four elements of value creation through technology, namely: Novelty, efficiencies, complementarities, lock-in .

Fundamental to retailers realising value is the improved connectivity and information sharing that comes about through interaction with the mobile application. This brings about transactional efficiencies for both retailers and consumers, which then results in market share retention and expansion. The ability to achieve “lock in” bolsters the ability to retain consumers and attract new ones.

However, a different sphere was also reviewed, namely value co-creation. Understanding that brick and mortar retailers can no longer cling on to the traditional methods of pushing value on to the consumer is critical to getting a sense of how value can then be created.

The progression of consumers through their increased access to connectivity and information is an impellent to retailers to evolve and create value with and for the consumers (Prahalad & Ramaswamy, 2004). Through this value of shared information, retailers could then interact with consumers in order to create the transactional efficiencies, achieve lock in and potentially expand market share.

The pillars of value creation are incorporated into the research questions within Chapter Three and then tested in the interview questions posed to the interview subjects.

Chapter 3: Identification of Research Questions

Notwithstanding mobile application adoption and usage being a significant developing concept in IS (information systems) and IT (information technology), the data available exposed that there was a distinct absence of academic and methodological clarity on holistically assessing mobile application adoption value.

The purpose of this research is to understand how adoption of mobile applications by traditional brick and mortar retailers can assist with value creation for the retailers or co-creation with consumers.

There are 3 primary questions that drove the research:

Research Question 1

What is the role of the omni-channel strategy within a South African context and what role do mobile applications play within this strategy?

This allows for an understanding of how senior people within a retail environment see the retail environment evolving. It also assists in gaining an insight into whether they envisage consumer trends and behavioural patterns changing and the role that mobile technology has to play in shaping their future.

Research Question 2

How can mobile applications play a role in business configuration and what are the fundamental elements needed to encourage adoption and ensure success of the application for the retailer?

This builds on the initial question and focuses specifically on the platform of mobile technology. It also examines what they believe to be the fundamental elements that a mobile application needs in order to be adopted by consumers

Research Question 3

How can mobile applications assist with value creation within a retail environment?

The aim was to understand the value that can be created and extracted by retailers through the use of mobile applications, building on the definitions explored within the literature.

Chapter 4: Choice of Methodology and Research Design

4.1 Introduction

This section describes the methodology used during the research to address the question of how traditional brick and mortar retailers adopting mobile applications could create and co create value for the retailer.

When initially conceptualising the idea of the value brought about by mobile applications within the retail environment, I envisaged the research methodology to be both qualitative and quantitative. Quantitative research would allow for the research to be customer facing and permit numerical analysis of the data in attempting to prove that mobile applications create value for the consumer. This could be done through questionnaires but, as stated above, would be primarily customer facing. However, the decision was made to focus primarily on the retailers and the value that could be created from the adoption of mobile applications. Thus qualitative methodology was confirmed.

4.2 Research Approach

The purpose of this research is to explore and understand how brick and mortar retailers adopting mobile applications could lead to value creation and co-creation.

The use of exploratory research is appropriate for a situation where the research problem requires exploration and where the researcher resolves to discover original evidence around a topic or new phenomenon that is not clearly understood (Saunders & Lewis, 2012; Cresswell, 2012). Exploratory research is also useful when conducting new research on a specific population and is perfect for qualitative methods

Qualitative research allows researchers to get at the innermost experiences of contributors, to qualify how meanings are formed, and to determine rather than test variables (Corbin & Strauss, 2008). The word qualitative places an emphasis on the qualities of entities and on processes as well as on connotations that are not experimentally observed or measured (Denzin & Lincoln, 2011). In addition, one of the main characteristics of qualitative research is the ability to describe a research problem through a description of trends or a need for an explanation of the relationship amongst variables (Cresswell, 2012). As the interpretation of value differs between retailers, it was necessary to explore their motivations for launching mobile applications.

Below is a graphic deconstruction of the varying elements that made up the research and allowed for a solid foundation, displayed in figure 9 below:

4.2.1 Choice of Methodology - Breakdown

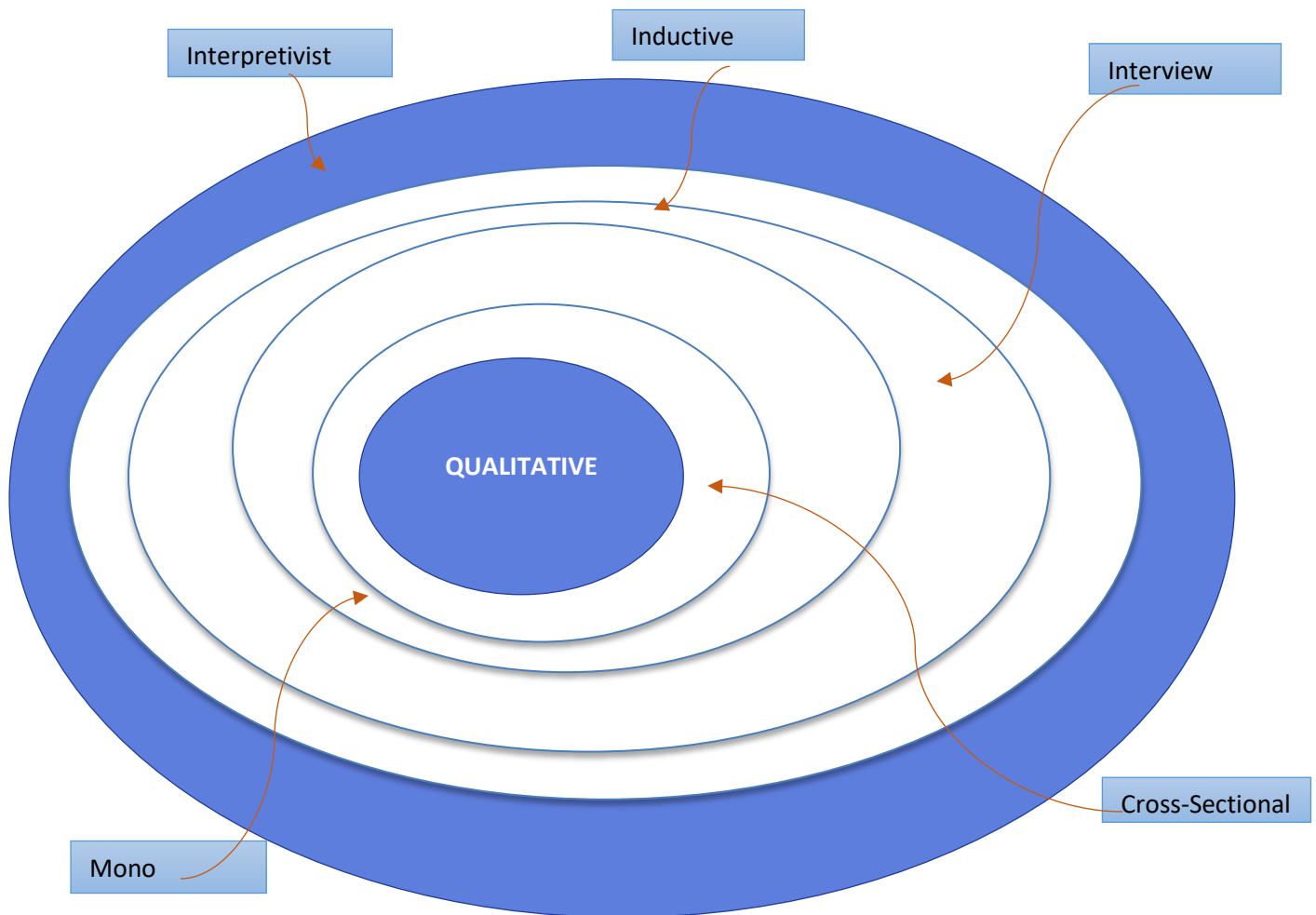


Figure 9 – Graphic description of choice of methodology, adapted from Saunders & Lewis, (2012)

4.2.1.1 Time horizons

A cross-sectional time horizon to measure the value that would be extracted by retailers from the introduction of mobile applications was used.

4.2.1.2 Choices

The Mono-Method was used. Interviews were the primary sources of data with additional data from industry reports supplementing the data collected from the interviews.

4.2.1.3 Strategies

In depth, semi-structured interviews were used as a primary source of gathering data. Qualitative researchers depend on in-depth interviewing quite extensively. Kahn and Cannell, (1957) describe interviewing as “a conversation with a purpose”. Qualitative interviews are typically more like discussions than formal events with predetermined response categories (Marshall & Rossman, 2006). In-depth interviews were used to draw a response from the subjects on the value that they perceive mobile applications will give to their business.

4.2.1.4 Approach

Inductive reasoning was used to link the theoretical basis of mobile applications to the value for retailers using mobile applications. Inductive reasoning allows for a move from specific observations, then patterns are observed, which lead into themes that allow for theories to be formulated (Saunders & Lewis, 2012). Within this ambit of the research report, there has been an effort to extract a view from retailers on how they believe mobile applications can be used to create value within their organisations

4.2.1.5 Philosophy

An interpretivist approach was used as the research philosophy. Interpretivist relates to the study of social phenomena in their natural environment (Saunders & Lewis, 2012). There exists motivation for conducting interpretivist research within the field of information systems (IS) in which the platform of mobile applications resides (Walsham, 1995). Knowledge was constructed through the exploration and understanding of the retail environment, reasons for adoption of mobile applications for both retailers and customers through the conduction of interviews. Through the interviews, I have focused on the meanings and interpretations of the concepts of value and logic around the adoption of the platform. Using the interpretivist approach afforded me the opportunity to explore whether adoption of mobile applications can be used to create value for retailers that will either supplement or add on to the value that they create within the normal spheres of business.

4.3 Research Methodology & Design

Qualitative research would allow for an analysis of the underlying opinions and motivations for the use of mobile applications as well as understanding what drives the concept of value amongst various retailers

Interviews have assisted in understanding the value creation properties of mobile applications for retailers and give an understanding of how value is created within their environments. The research methodology permitted synergy between the respondents to be built up, allowing for an expansion of the platform theory as well as the understanding of value creation. It also probed the reasons around the reasoning behind retailers utilising mobile applications as part of their omni-channel strategy and built an understanding of how mobile applications are built up to create value for the retailers. Qualitative research uncovered trends and the opinions of those interviewed – which allowed for the issue to be examined at a deeper level. This was integral to the research as there was need to understand how the perception of value varies between retailers as well as how the design of the mobile application is engineered to best construct value from the application as well as the consumer.

4.3.1 Population

The population comprised of senior employees of retailers and a retail head of a network service provider who operate or operated at a strategic level. This is important because not only did they have a deeper understanding of what creates value within their organisation, but also how this value can be measured and how mobile applications can enhance this value. They would were able to provide insight into the rationale behind the decision to launch a mobile application as well as its long term objectives. This also reinforced the work created in the journal article that forms part of the literature review, “Competing in the Age of Omni-channel Retailing” and also assisted in understanding how the strategy ties up with the other channels of revenue within the business.

The population comprised of retailers as they were the subject of the question posed. The need to understand how they utilise the platform of mobile applications and derive value from those applications is central to this study. Thus garnering their opinions from the executives interviewed forms the crux of this research.

4.3.2 Unit of Analysis

Key to the research project design is the unit of analysis that was used to determine how value can be created through the adoption of mobile applications. If either individuals or organisations are selected, the decision needs to be made as to the types of individuals or organisations that need to be researched and the number of the target sample. These decisions required a unit of analysis, the group that was studied, the procedure for selecting these individuals as well as the number needed for data analysis (Cresswell, 2012).

The unit of analysis are the opinions of traditional brick and mortar retailers who have or are in the processes of structuring an omni-channel presence. Through the exploration of opinions given by senior level employees of retailers, it was ascertained that they could convey their view on how adoption of mobile applications could lead to value creation within their businesses.

4.3.3 Nature and size of sample

There are a number of sampling techniques that have been used. Non-probability sampling is defined as a sampling technique in which units of the sample are selected on the basis of personal judgement or convenience (Zikmund, 2003). The sampling method employed was a combination of non-probability, purposive and snowball sampling. By using a purposive sample, there was a dependence on the researchers judgement to actively seek out respondents that would best be able to answer the research question and meet the objectives (Saunders & Lewis, 2012).

Because it was not easy to access a large sample of the target population, snowball sampling was used. The level at which the survey was conducted required introductions and recommendations between the higher levels of organisations that were surveyed. This allowed for easier access to the selected sample.

The aim was to get to a general sample size of 20 interviewees. However, due to the level of the interviewees within their respective organisations and the nature of the topic, a few respondents opted not to go ahead with the interview believing that answering the set questions could result in them divulging strategic information. However, there were 12 respondents that made up the final sample size.

4.3.4 Measurement instrument

In “Designing Qualitative Research” there is an argument put forward that the “primary strategy of the interview is to capture the deep meaning of experience in the participants own words” (Marshall & Rossman, 2006) (Marshall & Rossman, 2006). The measurement instrument was thus interviews, which was further augmented by selected definitions of value as defined by the literature.

The success or failure of mobile applications to extract value for the retail companies was not only based on the definitions of values set out by the literature. The research, through the interview process, allowed for retailers to articulate how they perceived value within their organisations and how mobile applications have either enhanced or eroded that value for them.

4.3.5 Data gathering process

The data gathering process was driven primarily through semi structured interviews using open ended questions.

Cresswell, (2012) and McCracken (1988) deliberate the use of an interview guideline in a qualitative study as an crucial tool for the interviews – thus an interview guideline was used for this process. Furthermore, McCracken (1988) also states that the interview guideline establishes the scope and direction for the interview and also assists the person conducting the interview to be immersed within the interview and the responses from the interviewee, rather than having to recall what questions have to be asked.

McCracken, (1988) also suggests that the interview guideline be constructed from the existing literature that has been reviewed. This aids the researcher in defining the objectives, themes and depth of the interview. This was the approach used within the context of this research paper. It has to be noted that while a guideline was used, it did not diminish the value attained from using open ended questions which allowed for the respondents to give flexible, amorphous responses. The guideline was put into place simply to ensure that the overall organisation and purpose of the interview were upheld and achieved (McCracken, 1988).

The interview guideline was made up of an outline that gave context to the nature of the interview and structured questions. Though the questions were structured, it allowed each of the persons interviewed, the flexibility to respond in their own way (McCracken, 1988). Positioning the research questions against the interview questions is detailed in Table 4.1 below:

Research Questions		Interview Guideline Questions	
RQ1	What is the role of the omni-channel strategy within a South African context and what role do mobile applications play within this strategy?	IQ1	Do you believe that an omni-channel strategy is essential to the overarching business strategy within the retail environment in South Africa? If so, why?
		IQ2	Within South Africa, a 2016 ICASA report states that 98% of all internet subscriptions (fixed, wireless and mobile) are via mobile. Do you think that mobile applications, (a platform of mobile technology) have a role to play within the retail environment and if so, what role do you envisage them playing?
RQ2	How can mobile applications play a role in business configuration and what are the fundamental elements needed to encourage adoption and ensure success of the application for the retailer?	IQ3	How do you believe that mobile applications allow retailers to reconfigure their businesses and how do you foresee them playing a role in cross-category functionality?
		IQ4	How do you think adoption of mobile applications can be encouraged amongst potential consumers?
		IQ5	What are the fundamental elements that you believe a mobile application for retailers should possess in order to be successful?
RQ3	How can mobile applications assist with value creation within a retail environment?	IQ6	The literature within this study has guided that the concept of value be limited to the parameters of market expansion, transactional efficiencies, and information sharing. Do you believe this definition holds true within a retail environment?
		IQ7	Do you believe that value can be co-created through mobile applications with consumers, and if so, how?
		IQ8	How do you believe that mobile applications could facilitate transactional efficiencies within retail organisations?
		IQ9	There is a major drive at the moment to collect and mine consumer data. Mobile applications can be used as a tool for this data collection. Which elements of the data collected do you believe to be most valuable and how could it be used to create value, as defined earlier, specifically touching on the points of market share expansion and information sharing?

Table 1: Positioning research and interview questions

Interviews have a particular strength in that they yield data quickly; immediate follow up and clarification is possible and combined with observation, they allow researchers to understand the meanings that some questions may hold for people (Marshall & Rossman, 2006). Using the semi-structured interviews allowed for a deeper conversation with the respondent. Construct validity will ensure that the questions asked actually collect data about what they are intended to measure (Saunders & Lewis, 2012).

The questions focused on the following:

- Opinions surrounding mobile technology, the role of mobile applications within a retail environment and the use of mobile application platforms. This would include the design as well as the interface used by the retailers.
- Confirming the assumptions around value creation and value co-creation and searching for the linkage between mobile application adoption and value.

The objectives of the open-ended questions were to:

- Establish the motivations for adoption of mobile technology as part of the retailers omni-channel strategy
- Determine the perceptions surrounding value creation and value co-creation within the retail environment
- Understanding if and how value could be created through mobile applications.

A single pilot interview was conducted prior to the commencement of the actual data gathering process. The purpose of the pilot interviews was to appraise and enhance the interview guideline and ensure that the key themes were addressed whilst also identifying key issues and areas for improvement regarding the interview process (Cresswell, 2012).

McCracken, (1988) emphasises the significance of generating an atmosphere where the interviewees felt safe and comfortable conveying their opinions. One of the key factors in ensuring that participants agreed to the interview was ensuring that the interviewee remained anonymous, as many spoke from a viewpoint of being involved in mapping out the strategy of the company that they worked for. As such, the interview structure also called for questions that were not specific to a company, but rather spoke to a broader retail and technological environment and gathered expert opinions around this. Thus, during the data collection process, there was a distinct effort to ensure that an environment was created whereby participants felt free to air their viewpoints.

Some of the interviews were conducted on a face-to-face basis, while others were conducted telephonically. This was primarily due to logistical restrictions, as the largest retailers within a South African environment are based in either Johannesburg, Cape Town or Durban.

Interviews were voice recorded and transcribed for a detailed analysis. The recordings were then transcribed and captured on a word document. This, along with the voice recordings formed the data that was analysed.

4.4 Data Analysis

By using qualitative analysis, my objective was to gain a broader understanding of value created or co-created for retailers through the use of mobile applications. The interview process drove the data collection to describe the phenomenon and gain a deeper understanding of the occurrence and what this means. The research questions covered two primary topics to elicit the views of participants, but

otherwise respected how the participant framed and structured the answers (Marshall & Rossman, 2006).

4.4.1 Data analysis tool

The research data produced from the interview process and transcripts was analysed through the aid of software. The software allowed for organisation of the research data and enabled the data to be codified in order to better analyse it.

4.4.2 Interview transcribing

Interviews were formatted into a medium that was compatible with both Microsoft Word and Excel. The interviews were transcribed through the use of a transcription service. The transcribed interviews were then audited against the recordings to ensure data integrity and completeness.

4.4.3 Analysis methodology

A thematic analysis methodology in data analysis will be followed. This will allow for theme building, trend identification, and relationship mapping through code generation.

Coding allows for organisation and collation of data into various codes and categories and allows for the formation of themes and the creation of patterns and maps (Saldana, 2012). This procedure of coding and building on codes to produce themes, meaning to the data is formulated and it is then applied to research questions in order produce a storyline to the research. This process is detailed in Figure 10 below:

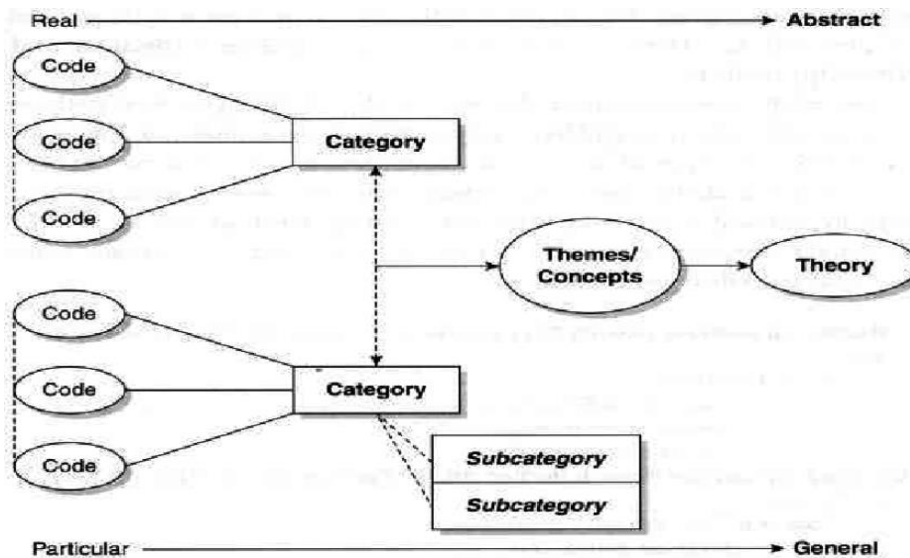


Figure 10 - Coding to theory deconstruction (Saldana, 2012)

4.5 Validity and Reliability of Data

This assess whether the methods used for data collection and analysis functioned in the manner proposed and that the findings truly paint a picture of what was intended (Saunders & Lewis, 2012). For reliability to be confirmed within the context of the research topic, results and findings should be able to be replicated and those interpreting the data should come to the equivalent assumptions as the researcher (Saunders & Lewis, 2012).

4.6 Limitations

This study interprets the insights of senior executives and managers around their view of value creation through the adoption and use of mobile applications. However, some limitations exist within the research methodology that may deter the integrity of this research

The nature of the sample (Myers, 2013): The size of the sample is the primary limitation. Due to the nature of the study and the level of the retailer employees who were interviewed, there were a few that were not willing to go ahead with the interview. However, the sample size of 12 people interviewed still represents a legitimate sample size.

Artificiality of the interview (Myers, 2013): As interviews were conducted with subjects that were complete strangers and requiring them to give answers within a limited time period, a possibility exists that the interviews may not be as constructive as the research would need.

Elite Bias (Myers, 2013): Individuals who were within the higher echelons of the organisation were interviewed so as to gain a strategic, long term view of the value that might be attained from mobile applications. However, in doing this, there is a risk that the detail that might exist at a lower level of employee might not surface.

As there was no formal training conducted around interviewing techniques, there exists a possibility of interview bias and could affect the outcomes of collected data.

The use of snowball sampling resulted in more than one interviewee being from the same organisation. However, it should be noted that personnel from multiple organisations were interviewed.

4.7 Conclusion to Chapter 4

This Chapter outlined the reasons why a semi structured interview methodology was utilised to collect, analyse and interpret the data. The various stages regarding the design of the research and the methodology followed were intended to meet the requirements set in Chapter 1.

In order to fulfil the requirements of this research project, an exploratory research method was selected. Once the relevant population was established, personal interviews with open ended questions were used. Specifics around the analysis of data was also provided.

Finally, the limitations around the research was specified and discussed. Following this chapter, the results to the open ended questions are detailed and discussed.

Chapter 5: Results

5.1 Introduction

The results attained from the research process are presented within this chapter. A total of 11 interviews were undertaken. The data that has been gathered through the interview process is now interpreted in order to create logical arguments based on the evidence received. The objective of the research procedure was to understand how adoption of mobile applications by traditional brick and mortar retailers could assist with value creation for the retailers or co-creation with consumers.

This Chapter will follow the structure detailed below to present the open-ended interviews and research data:

- Detailing the profile of the population set
- Detailing the profile of the interviewees
- Characteristics of the empirical data
- Insights gained from the semi-structured interviews

A summary of the most pertinent results will then close the chapter. This will then lead into Chapter 6, which will detail the discussion around the findings and answers to the research questions.

5.2 Detailing the Profile of the Population Set

Industry Type

Respondents originated from the retail industry and spanned across 6 different retailers. Within this industry, all retailers had a physical bricks and mortar footprint from which they generated the majority of their profits. The organisations from which the respondents originated also varied. While all operated within traditional bricks and mortar structures and had some sort of omni-channel strategy, there was variation within the sub set of retail in which these organisations operated.

Organisation Size

In terms of size, all bar one respondent came from organisations that were considered large in size, with all organisations having 1000+ employees. The reason for selecting large organisations was that these organisations had scale and countrywide presence, which allowed for the research to originate from a perspective of South Africa's largest retailers. The single organisation that was considered small in size employed less than 50 employees. This organisation was included within the sample due to the fact that it operated within the luxury clothing retail environment and was actively pursuing a mobile application strategy for the brands that were under its control.

5.3 Detailing the Profile of the Interviewees

All respondents interviewed either currently hold senior positions within a retail organisation or had previously been at an executive level within a large retail organisation for a number of years. All had a number of years of experience within the retail environment and deep knowledge and insight into the evolution of retail within the South African environment. The respondents held executive positions or a level higher. Four of the respondents operated at a "C-Level" – (CEO, COO, CFO), with the balance all senior executives. In addition, all respondents also played a role in the strategic direction of their specific business units as well as contributing to the overall strategy of their company. Majority of the

respondents operated within the clothing retail environment. Other respondents originated from organisations that sold a multitude of products from food, clothing and electronics. The split is detailed in table 2 below:

Respondent	Company	Retailer Type
Respondent 1	Edcon	Group - Clothing
Respondent 2	Edgars	Clothing, Footwear, Textiles, Mobile
Respondent 3	Jet	Clothing, Footwear, Textiles, Mobile
Respondent 4	Abulssa International	Clothing
Respondent 5	Pep	Clothing, Mobile
Respondent 6	Pep Africa	Clothing, Mobile
Respondent 7	Game, Dion Wired	Electronics, Food, Clothing, Textiles, Mobile
Respondent 8	Ex-Massmart	Electronics, Food, Clothing, Textiles, Mobile
Respondent 9	Foschini	Clothing, Footwear, Textiles, Mobile
Respondent 10	Foschini	Clothing, Footwear, Textiles, Mobile
Respondent 11	Ackermans	Clothing, Footwear, Textiles, Mobile
Respondent 12	Vodacom	Mobile Retail

Table 2 – List of respondents split by company and retailer type

The section of semi-structured interviews began with a brief overview of the research problem followed by the open-ended interview questions. The respondents were encouraged to give their opinion without prejudicing any particular aspect of their business strategy prior to the interview.

5.4 Characteristics of the Empirical Data

5.4.1 Duration of Interviews

A total of twelve interviews were conducted over a total of 300 minutes, with the average interview lasting for 25 minutes and the shortest interview being 17,15 minutes (Table 5.2). As discussed in Chapter 4, the primary limitation was securing time with the executives and allotted time was usually limited to between 30 to 45 minutes. It should be noted, however, that while the duration of the interviews were relatively short, the quality of the respondents was high, as they all drew from a wealth of experience within the retail industry, fully understanding the complexities and challenges that faced South African retailers currently as well as playing a role in mapping the strategies for their respective companies going forward. So while the interviews were short, the quality of the respondents ensured that they were rich in data.

Description	Quantity
Total number of interviews	12 interviewees
Total duration of interviews conducted	300 Minutes
Average duration	25 Minutes
Shortest duration	17,15 minutes
Longest duration	39,37 minutes

Table 3 – Breakdown of interview characteristics

5.4.2 Transcription Analysis through word counts

When reviewing the data, a filter was applied to ensure that words that did not appear more than twice. From this point, further filtration was undertaken to exclude words that were contextual or descriptive in nature, specifically related to the research question being answered. Words such as ‘the’, ‘them’, ‘when’, ‘what’ ‘and’ were excluded. Thereafter, grouping was then conducted, combining words that characterised similar meanings. The refined list allowed for context when coding the transcripts.

5.5 Research Findings

With the understanding that the research methodology that was employed was exploratory and semi-structured in nature, with an interview guide utilised, the interview process allowed for participants to elaborate and expand on additional areas that they believed to be of significance. However, it should be noted that the respondents were always brought back to the initial line of questioning in order for continuity to be maintained. The questions were posed as a discussion around the role that mobile technologies had to play within a retail environment, and allowed for the respondents to freely express their opinion. The semi-structured nature allowed for respondents to provide their view points while also providing direction in order to ensure that all relevant points were covered. This allowed for consistency amongst the respondents and made for simpler analysis. The interview process also allowed for the observation of response times as well as other non-verbal nuances to be noted.

The review of the findings commences with an overview of the research questions and delves into the specific questions that formed the broader research question, so as to frame and give context to the responses.

There were multiple constructs that emerged from each of the interviews. Within each interview question, only the primary constructs deemed most relevant (due to frequency of response) were presented and examined as part of the research findings. The full list of constructs per question are available in Appendix D of this report.

Excerpts of the interviews are presented as well as a part of the deconstruction of the interviews. Within these excerpts, certain words or phrases are emboldened to highlight the emphasis that the Respondent placed on these words as well as the significance of these words in leading up to the final answer.

5.5.1 Results for Research Question 1

What is the role of the omni-channel strategy within a South African context and what role do mobile applications play within this strategy?

Research question 1 sought to identify the importance of an omni-channel strategy for traditional brick and mortar retailers, with a specific focus on the relevance of mobile technology within this strategy as well as the willingness of retailers to embrace mobile technology as part of their broader strategy.

The research question was made up two components, interview question one (IQ 1) and interview question two (IQ 2), each of which will be deconstructed below.

5.5.1.1 Interview Question 1

“Do you believe that an omni-channel strategy is essential to the overarching business strategy within the retail environment in South Africa? If so, why?”

There were essentially two parts to this question:

- a) This specifically requested respondents to confirm or refute the importance of an omni-channel strategy for traditional retailers within a South African context. This question was designed as a simple “yes” or “no” answer simply to deduce if retailers felt that an omni-channel strategy had a role to play within their larger business strategy.

The result of this question was an overwhelming affirmation from all the retail executives interviewed, with the results being presented in table 4 below.

Is an omni-channel strategy important to retailers?

Rank	Constructs	Frequency
1	Yes	12
2	No	0

Table 4- Constructs for IQ 1b - Is an omni-channel strategy important to retailers?

Through the interviews, direct quotes emphasising the need of traditional brick and mortar retailers to adopt an omni-channel strategy was consistent.

Some of the quotes retrieved from the respondents emphasised that there was no option but to ensure that an omni-channel strategy formed part of the retailers’ broader strategy. Three selected quotes are detailed below:

“Yes, the short answer to that is a fundamental, straightforward ‘yes’ “ - Respondent 12

The quote above encompasses the view of all respondents. They all believed that an omni-channel strategy should be a fundamental part of the over-arching business strategy adopted by retailers that operated within a South African business environment.

*“So the answer is definitely yes. And it is yes not because I think in the short-term retailers are going to make money, but it is about positioning oneself as a global retailer to say ‘we are on board’ “
– Respondent 10*

However, there were some caveats to the answer. While Respondent 6 believed that an omni-channel strategy was beneficial in the long term, in the short term, retailers would not be able to realise the benefits of adopting an omni-channel strategy:

“I would say you have to have a timeline in view, in the short term no, I think in the short term we still have very little adoption rates of e-commerce and using online or mobile for that matter to purchase physical products. So definitely going to become a strategic driver in the medium to long term, in South Africa and Africa” – Respondent 6.

This was echoed by Respondent 12, who believed E-commerce and M-commerce within a South African environment was still in its infancy:

“I would say you have to have a timeline in view, in the short term no, I think in the short term we still have very little adoption rates of e-commerce and using online or mobile for that matter to purchase physical product” – Respondent 12

- b) This portion of the question built on whether the respondents answered in the positive or negative with regards to the importance of an omni-channel strategy. This question was significant as it allowed for respondents to elaborate on why they had a specific view around the importance of an omni-channel strategy.

The interview process allowed for the researcher to gain an understanding of the motivations behind the answers that the respondents provided and allowed for the building of thirteen different constructs. The deconstruction of the responses is presented within Table 5 below:

Motivation for retailers adopting an omni-channel strategy

Rank	Constructs	Frequency
1	Customers want Convenience	12
2	Combination of Traditional and Omni-Channel Strategy	9
3	Important to remain competitive and relevant	8
4	Imminent for Retailers serving Middle to High Income Market (LSM 7-10)	7
4	Applicable in future for Retailers serving the Low income Market (LSM 1-6)	7
4	Increased Access to Mobile Devices/ Adoption Rate of Technology	7
4	Consumers are Evolving	7

Table 5 – Construct for IQ 2 - Motivation for retailers adopting an omni-channel strategy

Construct: Omni-channel provides customers with the convenience they seek

Respondents pointed to consumer convenience as the primary construct. The selected quotes to follow reveal that the primary reason respondents believed that an omni-channel strategy was important was the ability to service the consumer need of convenience.

*“If you look at the market people are looking for **convenience** and if you look at the way the South African market is going especially with the smart phones, in this country even the lower LSM people are investing in smartphones and they are also looking for convenience” – Respondent 9*

*“I think we cannot ignore the fact that the retail environment will soon be having a new shopper, which is the millennial, and if you don’t gear yourself up to communicate to her, and sell your product and services in **an environment that is conducive to her at a time that is conducive to her**, you will be left behind. “ – Respondent 11*

*“So, number 1, SA has this growing middle class which retailers need to access and most of them being millennials, IT savvy, they are wanting to purchase products **whenever, wherever, however, off whatever device** they want to purchase. And if you are not going to be able to offer them this and they are not loyal, then they will leave and go to a platform that does.” –Respondent 4.*

The selected responses above point to the need for the retailer to offer the consumer convenience that allows for the retailer to be able to service the needs of the consumer as the consumer needs arise. The emphasis is on the retailer being able to offer the consumer satisfaction and evolve as the consumer is evolving. It should also be noted that the generation and class of the consumer is highlighted as a driver of the needs of the consumer. Respondent 4 also highlighted a pertinent point – loyalty was linked to the retailer being able to service the needs of the consumer timeously in a manner and through a platform that was convenient to the consumer. Failure to do so could result in the consumer moving to a platform that satisfied their need for convenience.

Construct: Combination of traditional and omni-channel strategies should be utilised by retailers

Respondents also stressed that an omni-channel strategy was not to be used in isolation, but rather in tandem with a traditional bricks and mortar presence. This was especially pertinent as the timing, discussed above, of large scale adoption of an omni-channel platform was uncertain. The current infrastructure that existed in South Africa was also highlighted as a barrier to retailers and consumers placing trust in an online-only strategy. The use of click-and-collect was highlighted as the potential departure point for retailers to launch an online platform. This can be evidenced from three selected quotes from the respondents below:

*“And the reason why, particularly in fashion retail that it is important, is that some people just want to try it on and see how they look. You **can’t get around that with purely e-commerce**. So yes, there are customers who will prefer that, so fine. So the way I see it evolving is omni channel, smaller spaces on brick and mortar...” – Respondent 3*

“Equally, you may want to start the journey of a purchase online, and collect the physical item that you have purchased instore, or have the logistics company fulfil it; depending on the kind of product that is purchased you may need some assistance in setting up if it is a digital product. If it is simply clothing and so on you may not need that.” Respondent 12

*“...as more of the population becomes educated I think more and more people are becoming educated every day and we are finding solutions around **Click and Collect** etc.” – Respondent 8*

What was evident from the interviews conducted is that retailers still believed the bricks-and-mortar model to be significant within a South African retail landscape as consumers still prefer to shop in a physical store. However, the retailers do believe that the market is evolving and adopting an omni-channel strategy is important as it allows for capacity and knowledge to be built up for when the market does evolve to online shopping and interactions.

Construct: It is important for retailers to remain competitive and relevant

This construct was highlighted by respondents’ view that in order for retailers to remain relevant, retailers would need to adopt an omni-channel strategy so that they could remain competitive within the market that they occupied.

Two selected quotes from the interviews highlight the respondents’ viewpoints that retailers risk the possibility of shrinking or losing share to competitors should they not embrace an omni-channel strategy within their business.

“If you don’t do it you will have to shrink. If you commit to a bricks and mortar channel you are going to be 1/3 to a ½ smaller in the future – no one can tell when but there is no question” – Respondent 1

*“...the **world is going digital**; quite simply put, if you do not embrace it, you will be **left behind** and miss out on the opportunities that digital present.” Respondent 12*

What is also evident from the quotes is that a definite timeline could not be pinned down by the respondents on the large-scale usage of an omni-channel platform, just that it was going to be integral to a retailers business activities.

Construct: Omni-channel allows retailers to service the full income spectrum

This construct was broken into two parts

1. Imminent for retailers servicing the mid to high end of the market (LSM 7-10)
2. Applicable in future for retailers serving the low income market (LSM 1-6)

This construct talked to the current ability as well as the potential that existed through the adoption of an omni-channel strategy by retailers to service the needs of the entire income spectrum of the consumer that operated within the South African retail environment. Analysing the results around the mid-to-higher end of the market will be the initial point of departure, followed by the lower to mid-end.

The two selected quotes, based on the view of the participants focus on the mid to high end of the market. What is highlighted in these quotes is the need for urgency within a retailer’s strategy to adopt an omni-channel approach that allows retailers service the mid-to-high ends of the retail market within a South African environment. These quotes also highlight the class and generational situation of the consumer.

*“I think retailers that are playing in the **middle to high end** I think it is imminent that they need to get onto the Omni channel asap because the **customer is evolving**” – Respondent 5*

*“So no. 1, SA has this **growing middle class** which retailers need to access and most of them being millennials...” – Respondent 4*

The following quotes talk to the lower-to-mid end of the retail market that some of the respondents operate within.

*“Yes, it is definitely gearing yourself up for the future, because it depends on your target market: so if your target market for example, the **Jet’s of this world** – at this stage it is not geared up to that” – Respondent 11*

“ The lower LSM’s in this country would be different in this country to other countries in the way that online will function, I think it will be more on the ability to pick up what is available, so you can use online as a platform opposed to just supplementing it..” Respondent 9

*“..if you think about it the **vast majority of South Africans are your middle to lower** and they at the end of the day want to touch and feel a product so at the end of the day there is that trust factor and it will take three to five years, maybe even longer, five, I say five years because there is that comfort..” – Respondent 5*

The responses above highlight the point that retailers servicing the mid-to-lower segments of the retail market needed to embrace an omni-channel strategy in order to prepare for the future. Understanding when this future would arrive was not made specifically clear. However, Respondent 5 was of the viewpoint that a minimum of five years would need to pass before retailers could cater to the lower end of the market through employing an omni-channel strategy.

Construct - Increased access to mobile devices/ adoption rate of technology critical to success of omni-channel strategy

Respondents also highlighted the access to mobile technology as well as the adoption rate of this technology as an important part of an omni-channel strategy. The quote below from Respondent 4 highlights the fact that technology adoption within a South African environment is quick.

*“...with SA being an emerging market, when technology enters into the market it is normally **adopted quite quickly**, vs a more developed market in which you have to unlearn and then relearn new habits. So you will find if you look at statistics in SA there are more mobile devices than there are people – that is the adoption rate of technology in our country..” - Respondent 4*

The quote also highlights the importance of consumer behaviour around technology adoption – having to cater to a market that is not fully developed allows for retailers to cater to a market that can learn and adopt new technologies at a speed that would otherwise not be allowed in a more “developed” market where consumers need to unlearn behavioural patterns related to the technology.

5.5.1.2 Interview Question 2

“Within South Africa, a 2016 ICASA report states that 98% of all internet subscriptions (fixed, wireless and mobile) are via mobile. Do you think that mobile applications, (a platform of mobile technology) has a role to play within the retail environment and if so, what role do you envisage them playing?”

This question builds on the previous question around the importance of an omni-channel strategy within a retail environment and focuses specifically on the role that mobile has to play within the retailers omni-channel strategy. Understanding the role that mobile plays within the omni-channel strategy allows for context to be provided and leads to questions that focus specifically around applications as a mobile platform. This question is important in terms of framing mobile in the context of a South African retail environment.

Table 6 details the full list of constructs that were developed within the context of this interview question:

The role of mobile within retail

Rank	Constructs	Frequency
1	Dependant on Smartphone adoption (Technology Adoption Rate)	15
2	Cost of Mobile Data	9
3	Trust Factor	8
4	Convenience and Simplicity of Mobile Apps	7

Table 6 – Constructs for IQ 2 - The role of mobile within retail

Construct – Mobile applications can play a role within retail, provided that mobile devices and data become more accessible

Respondents all answered in the affirmative with regards to mobile applications playing a role within a retail environment. However, the respondents also affirmed that there were certain caveats that needed to be fulfilled before the role of mobile applications could become more prominent within a South African retail environment. The three primary caveats were:

- Smartphone adoption rate
- The cost of mobile data
- The trust factor of consumers towards applications

Respondent 5 provided a relevant quote with regards to the acceptance of mobile within the South African retail consumer base – this quote provided context to the state of the South African consumer:

*“That is a big debate within the business as well I mean from the application point of view, I think as customers start adopting more and more technology and get into more and more smartphones because remember you still have **fifty percent of the people out there who don’t have access to internet on a smartphone**, they have got dumbphones, so it is all about adoption and if you look at the current market, the guys that do have smartphones, there is still a large portion of them, over ninety eight percent might be using it via their smartphone, there is still a huge disproportion that are **too scared to explore their smartphones** even more because of the cost of data and there is the trust factor. So you have got the minority which is the majority when it comes to spend power that transacts and utilizes a couple of gigs a month, whatever then you have got the majority which is the minority in terms of spend and we see it, it hasn’t adopted, it doesn’t trust a smartphone and use it purely for a WhatsApp point of view, so from an application point of view the number one up app is a dialer followed by WhatsApp” - Respondent 5*

This excerpt of the interview conducted with Respondent 5 is especially pertinent as it highlights all three issues that South African retailers face when trying to encourage mass adoption of their mobile applications. As the respondent operates within an organisation that serves the lower end of the LSM scale, understanding how to scale technology is important to his business strategy. There is a critical point made around the majority of the population needing to firstly, be able to trust the technology in order to invest in it and secondly, be able afford the cost of utilising a smartphone before they can

then build trust in using the applications. As mentioned above, scale is imperative and overcoming these barriers is critical to consumers adopting mobile applications presented by retailers.

This was echoed by Respondent 2, who highlighted expensive data and poor connectivity along with trust as a major barrier to mobile applications, which plays a more prominent role within a retail environment, evidenced in the quotation that follows:

*“I think the prohibitive factors of **data being expensive**, of poor connectivity, means that yes the percentage seems big but actually penetration in South Africa is very small in terms of usage of the internet; I think the trust is a big factor and that is something given Africa and South Africa’s history is going to have to be overcome.” - Respondent 2*

Conversely, Respondent 12 believed that the falling prices of devices, combined with effective infrastructure and payment methods enhanced consumers trust levels in mobile applications. This is highlighted in the following quotation:

“As I explained, I think as devices become cheaper, the network infrastructure is there, the apps are readily available and more and more people are designing these apps for online stores, payment methods are secure, there is a level of confidence in the transacting” Respondent 12

Respondents also built on the role that mobile applications could play within a retail environment, with the following constructs being deduced from the interviews:

Construct - Mobile applications providing convenience and simplicity

The other theme that emerged from the interviews was the ability of retailers to provide convenience and simplicity to the consumer, as evidenced by the quotation from Respondent 3 below:

*“So it is almost like if there is a Jet app, if you okay the account holder you can **manage her account**, you can maybe pay her account on this app, you can use it if you see something on your Facebook, you can click, take it into the app and then shop or whatever – things like that – **log complaints**, all of that kind of stuff.” – Respondent 3*

The quote above highlights mobile enhancing convenience and simplicity, which was discussed in interview question 1 above. Allowing retailers to connect with a consumer through a single platform but allow for multiple touchpoints enhances the convenience factor for both the retailer as well as the consumer. Mobile applications allow for multiple services to be amalgamated into a singular platform that promotes convenience.

The other constructs that emerged from the interviews was the ability to enhance Customer Relationship Management (CRM) through the mobile application. The theme of CRM does appear several times with the interview questions to follow, and will be discussed in more detail then.

Respondents also believed that mobile applications provided a link to technology that could potentially be used in the future. The quotes below highlighted the linkage that mobile applications could provide to technologies that would be adopted in the future:

*“The role I envisage it is that it has to be **the link between**.... Well it has to enable easy purchasing, so making sure it links to social media I think is a very strong thing” – Respondent 3*

“I think you are going to start seeing a full omni channel experience, but both ways; digital sitting in physical. The other way is to give the customer the experience and Burberry had a really good

*example of this. So they bring the **whole augmented reality to the retail environment**” - Respondent*

12

These quotes build on mobile applications by bringing in complementary and supplementary platforms that retailers could use to enhance the consumer experience. The use of social media (often a mobile application) is advocated, which could act as a support system to the omni-channel strategy as well as a specific mobile application that a retailer has launched. The use of complementary services such as augmented reality is also discussed. Augmented reality is often an enhancement of an application and operated off a mobile platform. These two facets of mobile technology could act as a support to the primary application being used by retailers or, as was elaborated on by Respondent 12, act as a primary mobile application for retailers. While not a primary theme, it has been included due to its relevance to the future of retailing.

5.5.1.3 Conclusion for Research Question 1

All respondents firstly highlighted the importance of an omni-channel strategy for retailers in South Africa and secondly affirmed the importance of mobile technology within that omni-channel strategy.

However, within both these strategies, convenience and simplicity stood out as a major theme. The respondents also believed that this technology could serve the full spectrum of consumers within a South African retail environment. However, also highlighted were the barriers that exist in getting mass adoption of the mobile application, specifically the rate at which mobile smart technology was being adopted, the high data costs and the lack of trust around mobile applications?

The primary themes that relate to this research question are:

- An omni-channel strategy is key as it provides consumers with convenience,
- Is important to remain competitive and relevant
- Mobile applications have a role to play, but this is dependent on Smartphone adoption, the costs of data being reduced and consumer trust being built in use of the applications. They are immediately applicable across middle to high income and in the long-run from low-to-middle income.

5.5.2 Research question 2

How can mobile applications play a role in business configuration and what are the fundamental elements needed to encourage adoption and ensure success of the application for the retailer?

Research question 2 sought to understand the role that mobile applications could play within a retail environment – specifically focusing on the configuration of the business strategy once mobile applications have been adopted. It also looked at the way retailers could encourage adoption by consumers of mobile applications and enquired around the specific elements that a mobile application would need in order to be deemed successful by the retailer.

There were three interview questions that made up research question two: Interview Question 3 (IQ 3), interview question 4 (IQ 4) and interview question 5 (IQ 5). The results and answers to all three questions will be elaborated on below.

5.5.2.1 Interview question 3

“How do you believe that mobile applications allow retailers to reconfigure their businesses and how do you foresee them playing a role in cross-category functionality?”

There were two parts of this question. The purpose of the first part of the question was to gain an understanding from retailers on how the adoption of mobile applications within their business allows for a variation from the way that business is being conducted and a re-alignment based on the value that they would gain from utilising mobile applications within their business. The second part deals with the ability of mobile applications to act as a catalyst for cross category functionality – which is essentially shopping across different business segments within a particular retailer. The full list of constructs are presented in Table 7 below:

The role that mobile can play in business reconfiguration

Rank	Constructs	Frequency
1	Consumer Data Analytics	25
2	Digital Platform to Communicate with Customers	9
3	Seamless Integration of all brands into one Mobile App	8
4	Brick and Mortar will still be relevant for Cross Shopping	7
9	Mobile Apps to increase efficiency in the Business	5

Table 7 – Constructs for IQ 3 - The role that mobile can play in business reconfiguration

Reviewing the respondents’ answers on how retailers can use the mobile application to reconfigure their business will be looked at first before moving on to the respondents’ views on mobile applications enabling cross category functionality.

Mobile applications allowing retailers to reconfigure their businesses

There are four dominant constructs that emanate from the respondents:

- Mobile applications allow for enhanced consumer data analytics
- Mobile applications can be utilised as a digital platform with which to communicate with customers
- Mobile applications allow for a seamless integration of brands into a singular application
- Mobile applications enhance efficiency within the business

Construct – Mobile application allows for enhanced consumer Data analytics

The outlook from respondents was strong when questioned about the ability of mobile applications to gather data around consumer behaviour and enhance the ability to analyse the data collected. A few of the selected quotations below elaborate on the respondents’ views on how enhanced consumer data analytics can be harnessed through mobile applications:

*“I think secondly it opens up a massive opportunity for **developing or capturing customer data**. So everyone has got a mobile phone and everyone has their mobile phone 90% of the time with them. So it is very easy for you when a customer comes in store capture their mobile phone data, capture*

their transactions and start building a database of what the customer is buying when, how etcetera.”
– Respondent 6

*“Okay so I think the biggest thing in terms of application for any retailer is to have their own app because that gives you access to lots of data and two things, it gives you **access to the data** and it gives you **access to the customer** because you can now start **communicating with the customer** via their mobile phone and then you can build up a history where you can pick up shopping habits...”* -
Respondent 5

*“Hopefully even if the app is on and they connect to your store Wi-Fi, then you can even see their **instore movements** and then obviously are they buying one type of product and not the other and we can give them vouchers to redeem on your mobile application”* – Respondent 3

Respondents 3, 5 and 6 all emphasise the points of using the mobile application to firstly collect data and secondly interpret the data to better understand consumer behaviour. All three respondents talk to the data that is collected being collated and built into a database that captures consumer spending habits, preferences and patterns. This database of consumer spending habits can then be analysed and retailers can translate this data to more effectively communicate with consumers.

Respondent 12, builds on this and talks to the support systems that assist with data analysis. The response is detailed in the following quotation below:

*“What you have to do is build deep analytics, big machine learning capability, and every transaction that takes place, you have artificial intelligence doing its thing in the background so that you can **build propensity models and prediction models** to effectively predict with a level of accuracy what is going to take place, and what I mean by that is what is the customer most likely to purchase. –*
Respondent 12”

Respondent 12 also elaborates on the support systems that would need to be employed by retailers in order for them to analyse the data being collected by mobile applications so that the retailers can foresee what consumer needs are and plan on how to best service the needs of the consumer. This adds on an additional layer to data collection and interpretation, by talking about the capabilities needed in order to facilitate the data analysis.

Construct - Mobile applications can be utilised as a digital platform with which to communicate with customers

In the quotation below, Respondent 5 talks specifically to mobile applications being a new channel of communication that a retailer can utilise to reach out to and interact with their consumers

*“...it gives you access to the customer because you can now **start communicating** with the customer via their mobile phone...”* Respondent 5

Respondent 9 talks to the mobile application being used as a communication tool that enables the retailer to enhance the consumer experience through the use of suggestions to ensure that the consumer makes a purchase. Interestingly enough, the respondent also elaborates that the sale does not need to be concluded through the application, but could lead to the consumer visiting the retailer’s brick-and-mortar store:

*“Absolutely. I think the one thing that – and this links back to your first question – people often visit, sometimes to buy but mostly to research, and when they see you are making life easier or something, by **putting forward suggestions**, either they conclude the sale online but if they don’t they certainly will walk into your store” – Respondent 9*

Respondent 6 broadens the construct of mobile applications being used as a communication tool by reviewing the communication benefits to the consumer, as well as the internal benefits for the retailer as well. The respondent talks to the speed and efficiency of communication conducted through mobile applications, specifically pointing to the fact that many South African retailers have a store footprint that is geographically spread across the country. From a consumer facing perspective, the respondent highlights the opportunity that mobile applications possess as a communication tool with consumers through direct marketing and the ability to be more focused and specific in targeting consumers through the data that is collected around these customers.

*“I think secondly from a communication point of view I think it enables retailers to **communicate quicker, better and faster** to their staff particularly with retailer’s challenges, you have got staff spread out across a big geographical area and not always having the best internet access, but now with mobile obviously you can use that as a better communication platform.... Then from a customer point of view I think it opens up a number of opportunities. One is just from a marketing point of view, all customers have mobile devices and you can now **reach customers with more direct marketing** if you have got a very good loyalty programme or a good way of getting that customer information and you can be a lot more focussed and targeted in terms of the message you send out to customers rather than putting out the standard TV ad that everyone sees and half of your customers don’t need the product you can now invest more money in targeted marketing to your customers. So kind of as a customer communication tool I think it opens up a massive opportunity.” – Respondent 6*

What becomes clear after reviewing the quotes from respondents above is that mobile applications could emerge as a new communication platform to retailers to not only communicate with consumers, but staff as well. The ability of mobile applications to be provide quick and cost effective means of communications which have the ability to transcend geographical locations highlights the efficiencies that applications can bring to retailers. This will be discussed further in Chapter 6.

Construct – Mobile applications allow for a seamless integration of brands into a singular application

*“I think the challenge is for a customer to be able to go onto a platform and regardless of whether they want to purchase across food or fashion or cosmetics, they **should be able to get all of this off of one platform**... And if the company could get that right or somebody could get that right where a user is just using one platform to answer all of their desires or all of their needs, it would be hugely valuable. – Respondent 4”*

The Respondent above talks to the ability of mobile platforms to amalgamate the various products and brands that retailers offer and present it as a singular experience to the consumer, thus fulfilling the consumer needs. The respondent also pointed out that within a South African context, Woolworths seemed to be the closest to achieving a singular point that serviced a consumer’s plethora of needs.

Construct - Mobile applications enhance efficiency within the business

The themes of efficiency that mobile applications can bring have been touched on within the previous constructs by way of enhanced analytics, seamless communication with both internal and external parties as well as the integration of brands. The quotations below highlight the points that respondents have made specifically around mobile applications enhancing efficiency within a retail environment:

*“... We look at logistics and distribution and the power of mobile apps. So I will give you a practical example is we at Massmart have a lot of what we call our bakkie brigade, so they are third parties, man in a van that comes and picks up a fridge from our DC and takes it off to the customer, after the customer has bought in store but control and management of those bakkie brigades is very difficult, so we bought a software called Wumpdrop and that effectively is similar technology to a Uber, so it allows us to see all the different bakkie brigade drivers that are logged in, drop a delivery and the bakkie brigade will then get notified to then say okay pull into the office here is your route, here is your drop off location and then we monitor and track him and that provides all the diagnostics and measures and billing information to make sure that **we effectively manage how many trips, mileage, everything else** and service levels that they are adhering to, so we are managing via customer facing and fulfilment through these type of app strategies.” – Respondent 7*

Respondent 7 talks to efficiencies that have been uncovered within their business not through sales, but rather through the logistics and fulfilment parts of their business. A mobile application is employed by the retailer in order to optimise delivery schedules and routes and thus, they have become more efficient by controlling costs and time spent creating value for the retailer through those efficiencies.

Respondent 6 builds on this by talking to the internal efficiencies that could be brought about through the use of mobile applications:

*“So I think in a couple of ways, the one is let’s start from an internal point of view, retailers can use **mobile to run their businesses more efficiently**. So for example why not let’s say have a fixed point of sale in stores when I could have mobile roaming devices to help customers check out. You know a lot of retailers are already using mobile technology for things like stocktakes in their stores. So I think there is definitely from an internal **using mobile technology to run your business more efficiently** I think there is a huge benefit.” – Respondent 6*

Respondent 6 gives an example of using mobile applications to ease congestion in stores by allowing roving check out points as well as an example of internal efficiencies being driven by mobile during the stock taking process. The point of using mobile to enhance efficiencies in store through the check-out facility is of interest as the ability to reduce the transactional costs for the consumer (through their wait time in the queue) and the retailer (through staffing additional check-out points) is highlighted.

Mobile applications encouraging cross-category functionality

The respondents were split when asked whether mobile applications allowed for cross category functionality – essentially asking if mobile applications promoted cross shopping within the retail environment that they operated in. The answers given by respondents were diverse in their opinion – pointing out both the reasons that mobile applications would not drive cross-shop as well as the potential of mobile applications to drive cross-shopping. Analysis of both the pro and con viewpoints is shared with some of the quotations below:

Construct – Mobile applications facilitate cross shopping

Selected quotes are displayed below to examine the viewpoints of respondents affirming the belief that mobile applications encourage cross-selling within a retail organisation. Respondent 4 talks to the amalgamation of brands, discussed earlier, being used to target a consumer in order to promote cross-sell based on the consumers spending profile and talks specifically to aggregation being a catalyst for cross-selling within a particular retailer:

*“If you had to compare that to Mr Price for instance, who don’t have their homeware and their clothing and sports - they are all completely separate, they run in separate silos – and you could definitely... the same consumer who is shopping in your fashion Mr Price stores, is still your price sensitive consumer that is shopping homeware, that is shopping sport. So **aggregating them would definitely allow them to sell across their own portfolio a lot easier**; it’s definitely something that should be addressed” – Respondent 4*

Respondent 2 believed that by allowing consumers the ability to compare through the application it assisted in building awareness within the consumer that there are deals on complementary products that are offered. Consumers could then take up the offer irrespective of their primary search option. This also talks to the ability to communicate with the consumer and understand consumer preferences so that potential ancillary offers could be presented to the consumer as a way of accelerating cross-selling.

*“Yeah hundred percent, I think it offers people the **choice of comparison**, I think they are looking for the best deals and I think it also alerts them to products they may not have thought about that are co related to that particular primary product search..” – Respondent 2*

Construct – Mobile Applications do not facilitate cross-shopping

There were respondents that believed that mobile applications did not have the ability to promote cross-shopping within a retail organisation. They held the views that consumers were specific around their needs and the lack of physical product to entice them hindered their ability to cross sell to the consumer.

*“I think all items will be sold after being educated by mobile or a desk top. I don’t think there is any category that is going to escape it. In terms of cross shopping by the way, I think **e-commerce is not going to assist cross shopping**; so a good portion of a successful retail store is getting people to buy things they didn’t want to buy or didn’t know existed – or hadn’t planned to buy. I think that what e-commerce is going to do is reduce that. It is going to reduce the opportunity to cross shop – Respondent 1”*

*“Right, so I think with chain stores, **I don’t think there is cross sell opportunities**, to be quite honest. Like Edgars, who sells everything – I am not so sure there is a cross selling opportunity, because people are coming there for a particular item and they know what they want” – Respondent 10*

Respondent 1 was of the opinion that shopping through a mobile application actually reduced the ability of retailers to cross-sell to consumers. The specificity of a consumers needs on a mobile or other electronic platform surpassed their need to browse and uptake other products which may be on offer. This could also be due to the low transactional cost per transaction for the consumer as opposed to physically going into store and shopping for an item, which entailed a higher transactional cost for the consumer. This insight brings us to the next construct:

Construct – Brick and Mortar is still relevant for cross-shopping

Respondent one did elaborate that physical stores are still very relevant for cross shopping, and this was echoed by respondent 2 as evidenced by the quotations below:

“It is still going to be there, because it is entertainment, it is something you can do with other people – which you can’t do online – and it has got this discovery/treasure hunt/educational mode that doesn’t exist on a mobile phone. So you have pretty much got to know what you want: I am looking for this thing and your mobile phone will tell you ‘well here are the different brands or retailers, and here are some prices, and here is some information about the product. It is very difficult to sell products in front of you that you hadn’t thought of.” – Respondent 1

*“I also think behaviour in South Africa unlike other areas, **people actually like to go out and shop**, it is an experience still for them, it is an emerging market, so I think that is not going to go away, so you have got probably a runway of at least ten years before it really catches up to other areas.”* – Respondent 2

Both respondents point to the experience of visiting a physical store as a catalyst for cross-shopping. Respondent 2 points to the behavioural patterns and norms of a South African consumer as a relevant part of the consumers decision making. Respondent 2 did, however allude to the fact that cross shopping occurred both in a physical environment as well as an online environment facilitated by a mobile application.

5.5.2.2. Interview question 4

“How do you think adoption of mobile applications can be encouraged amongst potential consumers?”

This question was constructed to gain an understanding from the interview subjects how they would create scale through adoption of their consumer facing mobile application.

The two primary constructs that emerged from these interviews were:

- Offering the consumer a value proposition to incentivise the adoption of the application
- Mitigation of connectivity and data challenges
- Retailers can encourage adoption through inclusion into their digital media strategy

The list of constructs and frequency are presented in Table 8 below:

Elements that encourage mobile application adoption amongst consumers

Rank	Constructs	Frequency
1	Customer Value Proposition (Such as Incentivising, exchange online, Vouchers, Rewards)	26
2	Mitigate Connectivity and Data Challenges	13
3	Digital Media Strategy	9

Table 8 – Constructs for IQ 4 - Elements that encourage mobile application adoption amongst consumers

Construct - Offering the consumer a value proposition to incentivise the adoption of the application

Respondents believed that the best way to encourage consumers to adopt a mobile application was through a value based proposition. This would ensure that retailers drove consumer behaviour by offering a reward for the adoption of the application. From the consumer perspective, it motivated adoption of the platform as they had an incentive to do so. The nature of the value proposition varied, however, as evidenced by some of the respondents quotes that follow:

*“It has to be **incentive-based**. I don’t see someone in the beginning just downloading the app just for kicks; it has to be done so the app can redeem vouchers.” – Respondent 3*

*“First of all we have got a huge base of customers that are adopting smart technology for the first time. So if you are a first mover or you provide some sort of **value or incentive** to use your adoption rate is incredible” – Respondent 7*

*“I think **definitely incentivise** but not necessarily just through rand value or monetary value. But different kind of reward structures and adding value” – Respondent 12*

*“So essentially a **rewards basis** then, initially to begin with. South Africans love reward you know, but the reward must be appropriate, so don’t offer them something that is completely inappropriate to the consumer.” – Respondent 9*

The view of the above-mentioned respondents indicate that incentivising a potential adopter would more likely result in the potential being converted into an actual adoption – there needs to be a reward for the adoption. However, the reward needs to be beneficial to the consumer that it is being offered to. Respondents also believed that by incentivising the consumer also allowed for the barriers that existed to adoption to be overcome. In addition it also allowed the consumer to overcome their apprehension around adoption through an incentive offered to them. The issue of overcoming the consumer’s apprehension around the technology is discussed in more detail in the next construct below:

Construct – Challenges around data and connectivity need to be mitigated in order to encourage adoption

This has emerged as a prevalent theme within the data gathering process. In order for widespread adoption to occur, high data charges and the inability of majority of the population to access connectivity remains an issue. The key to encouraging adoption amongst consumers would be the ability of the retailer to overcome these issues.

Two selected quotes highlight the issue of data and connectivity, namely:

“I think the third thing is what I said to you before, the industry here is slightly on the back foot because free Wi Fi etc. etc., is very slow even at the airports, you don’t get it really which doesn’t really foster it and I think that is a governmental thing in terms of promoting and pushing retail here in Africa and South Africa...” – Respondent 2

*“I think obviously the barrier to entry in terms of the whole hardware and data consumption per se, needs to continue to drop. So the cost of the device, **the cost of consuming data**, the more affordable you make it, the more consumers will actually consume data. – Respondent 12”*

The respondents above have indicated that the primary barrier to adoption is actually the high data costs that exists and that overcoming this barrier would lead to consumers being more able to adopt and use a particular technology. The complexities that existed around data accessibility had the ability to hamper retailers’ ability to encourage consumers to adopt the application.

A mitigating factor, discussed by two respondents, was the ability of the retailer to allow access to Wi-Fi in store which in turn would allow the consumer to download the application without the risk factor associated with high data costs.

In terms of the construct that did not come through as strongly, but has also been a primary theme in the data analysis thus far is the theme of trust. This was highlighted in the conversation the researcher had with Respondent 6, who believed that trust was a fundamental factor in encouraging adoption:

*“On the e-commerce side you need to trust the party on the other side. So how do you **build that trust with consumers** that they know that they have bought a pair of jeans and they have said they need to be delivered to store x and when they get there the pair or jeans is waiting for them. So it is about building that trust base relationship with consumers.” – Respondent 6*

Construct - Retailers can encourage adoption through inclusion into their digital media strategy

The use of social media applications such as Facebook, Instagram and Twitter have become widely used, particularly on smart mobile devices. The use of these platforms to promote retail trade has already been employed by retailers. Respondents believed that leveraging the reach that social media provides could be a means to encourage adoption. Further, providing linkages between social media and a specific application launched by retailers could encourage adoption.

Respondent 1 believed that this was the best way to encourage adoption as evidenced by the quote below:

*“It seems to be... the way it seems to be going is through some form of **social media** you see what **you like** and then you are one click away from a store.” – Respondent 1*

Respondent 2 also believed that it formed part of a marketing strategy and talked to the utilisation of social media platforms to promote the application. However, the respondent also believed that social media in isolation was not going to work. It would have to be integrated as part of a holistic campaign that incorporated other media as well.

5.5.2.3 Interview question 5

“What are the fundamental elements that you believe a mobile application for retailers should possess in order to be successful?”

This question looks at the elements that the respondents viewed as critical in terms of the composition of a mobile application. These elements are viewed as critical as they would ensure that the consumer would be able to utilise the mobile application and the retailer would then be able to extract value from the application through consumer usage.

The constructs deduced from the interview responses around this question are detailed in Table 9 below:

Elements of a mobile application that drive success

Rank	Constructs	Frequency
1	User-friendly (Ease, Simplicity)	27
2	Seamless Integration	11
2	Search Functionality	11
3	Intuitive	9

Table 9 – Constructs for IQ 5 -Elements of a mobile application that drive success

The three primary constructs that will be explored will be:

- User-friendliness
- Ability to integrate seamlessly
- Search functionality

Construct – Mobile application needs to be user friendly

Retailers believed that user-friendliness was a key element that would drive the success of a mobile application within their environments. Respondents stated that the user-friendliness should be the primary focus when constructing a mobile application. Deconstructing the consumer journey was highlighted as a method of ensuring that user-friendliness could be incorporated into the design of the mobile application, as highlighted by Respondent 9 below. To follow are some of the selected quotes that talk to ease of use:

*“I think the **key thing is user friendly**, it needs to be user friendly and it also needs to be current...” - Respondent 11*

*“I think end to end journey. And what does that mean? I think it must be **easy and functional to use**, it has got to answer the question of what the consumer is looking for, so when you enter the application it must be easy and effortless, you know passwords must be easy to type in and so forth. As you go through that journey it must be able to simplify your life. It if does not simplify your life or does not somehow bring value to your life, you are going to lose traction” - Respondent 9*

*“...it has to be **relatively light and easy to use** and I think it needs to evolve, it needs to bring new products or services, whether it is random competitions that you enter through it or unique deals or*

content that that user can then re-farm as part of their own content or add to their Pinterest board or whatever it might be...” – Respondent 7

All three respondents above have indicated that ease of use should be a primary concern when considering a mobile application that is customer-facing. They also point to the content evolving and being relevant to the time and the consumer – the content needs to appeal to the consumer that it is being offered to. Respondents highlighted the experience and ease of a consumer purchasing in store. They believed that the consumer needed to navigate the mobile application with the ease that they would a physical store. Respondents also believed that due to the lack of elements that appeared in store that enticed consumers to purchase, the mobile application would need to be seamless in order to entice the consumer to use it.

Construct – Mobile applications should have the ability to integrate seamlessly

The respondents emphasise seamless integration between the mobile application as well as the back-end systems that support the mobile application in order to produce a seamless front-end experience for the consumer. The respondents also highlight the fact that an integration needs to happen between the in store experience and the in-app experience. This means that there needs to be a transcendence of the in-store experience to the in-app experience. This was highlighted by a quote from Respondent 4 below:

*“The biggest challenge, is making sure that your products are represented in as an appealing way as they would be instore: so in a brick and mortar store you have a variety of elements – lighting, store layout, merchandising etc. – that appeals to the customer subliminally.... How you are going to **transcend or translate** these messages across on to a mobile app is I think one big challenge.” – Respondent 4*

Building on the point of seamless integration between mobile application and physical options in store was the ability to utilise the mobile application to garner information in store – (by reviewing size or colour options by scanning a barcode or taking a photo of an actual item in store to query availability).

*“I think the other thing would be also **to use that app instore**: so for example if you don’t see your size, can you scan up the bar code” – Respondent 3*

Another point highlighted was the ability of the mobile application to manage loyalty and review and manage the credit facility if the retailer provides as well as integrate seamlessly with complimentary applications, such as social media applications, which are also considered as a critical element for the success of the mobile application.

Construct – Search functionality is an essential element

Building on the point of seamless integration between mobile application and the physical store is the ability to use the application to search the physical store. This was highlighted by Respondent 3 in the previous construct above. The evolution of the consumer is also highlighted by Respondent 1 as follows:

*“Um... gee, **its search**. Okay. It is probably the most important thing on it. You know we have all... no one browses through menus anymore, hierarchies. I see the store online retailers spend a lot of time doing this but it is not how we work; we work on searches. – Respondent 1”*

This respondent refers to the changing consumer behaviour, surmising that hierarchies should be replaced by a search functionality. The ability of the retailer to offer the consumer ease within their experience relates to the search functionality within the application. This goes back to the first construct – ease of use. Ensuring the availability of a search function assists with ease of use. This allows the consumer to navigate the application and get to the function that they seek. Respondent 11 also highlighted a search functionality within a mobile application as critical, but felt that the search functionality should be grouped within the user friendliness construct.

Another minor construct that came about from the responses to the interview question was the ability of the mobile application to be intuitive – understand what the user requires. This was based on the back end system integration, discussed above and the ability of the system to capture and analyse data about the consumer. Security was also highlighted – yet another element that added into the theme of trust that emanated from the interview questions. Within the context of this question, emphasis was on the secureness of the payment platforms and consumer comfort around parting with credit card details and personal information.

5.5.2.4 Conclusion for research question 2

The opinions provided by respondents to the three interview questions that made up research question two allowed for an understanding of the role that mobile applications can play within a retail environment and how to best design and incorporate mobile applications within the business to ensure that consumers adopt this platform. The primary themes that were emitted from these interview questions were that of retailers using the mobile application for consumer data analytics, that adoption of applications can be encouraged through offering of a value proposition to the consumer and that user friendliness was critical in designing the application.

The primary themes that relate to this research question are:

- Mobile Applications allowed for a better understanding of the consumer by providing the retailer with data about the consumer which could then be analysed and acted upon.
- Adoption could be encouraged by consumers through a value proposition offering
- The primary constraint for the application is simplicity to ensure ease of use

5.5.3 Research question 3

How can mobile applications assist with value creation within a retail environment?

Research question 3 sought to understand the crux of the research – how adoption of mobile applications by retailers creates or co-creates value for retailers. This research question builds on the previous two questions which examined the role of mobile applications within a South African retail context, the role that mobile applications play in cross-category functionality and how mobile applications can be adopted by consumers.

The previous research questions provided context and set the base for understanding the role that mobile applications could play. Research question 3, made up of four interview questions seeks to confirm the parameters of value creation and understanding of value co-creation. The interview questions that made up the research question were: interview question 6 (IQ 6), interview question 7 (IQ 7), interview question 8 (IQ 8) and interview question 9 (IQ 9).

5.5.3.1 Interview question 6

Interview question 6 was split into two parts:

Interview question 6(a): This specifically requested respondents to confirm or refute the pillars of value creation, as elaborated by the literature. This question was designed as a simple “yes” or “no” answer simply to deduce if the retail executives agreed with the constructs that were deemed relevant in the literature. The result of this question was that all the retail executives bar one confirmed that the literature held true. This is broken down in Table 10 below:

Do transactional efficiencies, market share expansion and information sharing lead to value creation?

Rank	Constructs	Frequency
1	Yes	11
2	No	1

Table 10 – Constructs for IQ 6a - Do transactional efficiencies, market share expansion and information sharing lead to value creation?

However, it should be noted that while the respondents agreed with the constructs as a grouping, they had reservations around some of the constructs individually. This will be elaborated upon in IQ 6b, which is presented hereafter.

Interview question 6(b): This formed part of the same question but was split out for the purposes of this chapter in order to understand the motivations behind the “yes” or “no” answer. These constructs are presented in Table 11 below:

How do transactional efficiencies, market share expansion and information sharing lead to value creation?

Rank	Constructs	Frequency
1	Information Sharing the most important	8
2	Customer Centricity	5
3	Digital Strategy integrated into Organisational Strategy	4

Table 11 – Constructs for IQ 6b - How do transactional efficiencies, market share expansion and information sharing lead to value creation?

Construct – Information sharing important to value creation, leads to customer centricity

Excerpts from some of the interviews, detailed hereafter, provide an understanding of the motivations behind the confirmation:

*“Ja, I definitely think so, I **think those are the pillars that you certainly want** to do with that digital and anomaly channel journey...” – Respondent 7*

Respondent 12 believed the constructs to be quite abstract and the pillars of value creation within a retail environment to be inexhaustible. The respondent believed that choice would be the main driver of value creation and talked about the “segment of one”. This was the belief that value was perceived differently by each individual and organisation and was completely circumstantial. Thus, the elements associated with the act of value creation was inexhaustible, as each consumer had their own concepts of what value was.

*“I think there is **truth in all three**, there is no question about it. I am not certain that it is exhaustive, to be honest – because I think again, if I just backtrack and give you a slightly different view, trying to answer that question, I believe the world is going to a segment of one. People do not want to go into any kind of environment and not have a choice.” – Respondent 12*

Respondent 8 disagreed with the construct of market expansion, believing the theory to be sound, but the actual application not to be true. The respondent also highlighted the inefficiency that exists within a South African context – specifically pointing to the checkout process that needs to be addressed. This could be related to the trust factors that consumers have around a purchase – specifically when purchasing a product online.

*“Okay so I think information sharing definitely, so **market expansion I don’t think so**, I think it should but I don’t think it has. Then what was it transactional efficiency, probably. I say that carefully because in fact I think yes I don’t think probably I think it has, I do think that in South Africa specifically we need to fix the checkout, my personal view is coming into play or my personal experience is coming into play but I generally do a lot of online retail, but I do think we have some issues like checkout.” – Respondent 8*

Respondent 3 below subscribes to the view that the constructs presented within the literature hold true, but not specifically for mobile, but rather from a total omni-channel view, which incorporates bricks-and-mortar retail stores as well as online, which mobile applications form a part of. The theme of growth is thus addressed, which could be linked to market expansion. The brick and mortar operations, from his response, would be used to supplement the function of online or mobile.

“Yes, so my view, a lot of people say that omni-channel is going to give you growth. I personally think that brick and mortar is not going to give you growth, it is going to avoid you losing customers” – Respondent 3

The negative response to the interview question was from respondent 1, with the detail of his answer provided in the following quote:

*“No. So the first one, which was market expansion... hmm... what actually the internet is doing to the world in my view is shrinking things you know? The number of successful things is now less than it used to be, because everyone in the world is doing the same thing; there is only one Facebook, there is only one Instagram, there is only one Twitter – it is not like they used to be a whole lot – you can’t choose. So no, I **don’t think there is going to be market expansion**. I think one to one marketing and one to one logistics is going to be more expensive than retail, however information sharing, I think knowing or finding out what other people thought of something is very useful..” – Respondent 1*

The respondent felt that e-commerce was actually shrinking the market, not expanding the market share of retailers. This held true with the previous view expressed by the respondent around the ability of mobile to enhance cross-shop. If mobile applications did not have the ability to promote cross-

category uptake within the business, it was unlikely that it would lead to market share expansion, as consumers were very specific in their purchase needs. However, the respondent did believe that the construct of information sharing held true, but trust was a fundamental element within this construct and that he believed that trust was being eroded with the abundance of mis-information that existed.

5.5.3.2 Interview Question 7

“Do you believe that value can be co-created through mobile applications with consumers, and if so, how?”

Interview question 7 requested respondents to provide a viewpoint on the constructs of value co-creation through employment of mobile applications.

There were two primary constructs that came out of this question, detailed within Table 12 below:

Ways in which value can be co-created through mobile applications

Rank	Constructs	Frequency
1	Customer Data Analytics	13
2	Customer Relationship Management	11

Table 12 – Constructs for IQ 7 - Ways in which value can be co-created through mobile applications

Construct – Data Analytics can be used to better understand the consumer

Respondents were of the opinion that mobile applications could be used to gather data around consumer behaviour, choices and spending patterns. This data could then be harnessed and analysed to better understand the needs of the consumer. The selected responses below point to respondents highlighting the importance of gathering data to better understand their customers. Respondents used examples of international retailers (Inditex, which controls the ZARA brand) and their efficiency in gathering, interpreting and accessing consumer data. Respondent 2 believed that congregating and understanding consumer data was the foundation of a retailer operating. However, this respondent also believed that in order for the consumer to part with the data, there needs to be an offer back to the consumer – the respondent suggested that in store Wi-Fi be used to provide a value back to the consumer. The prominent viewpoint from the respondents was that in order to better cater for the consumers’ needs and ensure that they are offered what they want, the retailers needed to gather data pertaining to the consumers. The mobile application could thus act as a conduit for the data gathering process and a platform from which value could be co-created for both the retailer and the consumer. The respondents expressed their views as follows:

*“First of all we **learn and understand about consumer behaviour in a much more scientific way**, so that’s the bigger benefit if I look at it, those companies that are really successful, the big companies like the Inditex Group, they are 24/7 connected to their customer behaviour, so they understand where those touch points are when a person enters their stores, they understand how many times they have visited, they **understand the purchasing power of the baskets**, all of those they understand the demographics very, very well because a lot of retailers haven’t really cottoned onto that yet, in a most scientific way and embraced it” – Respondent 2*

*“So yes I will say again it comes back to retailers wanting to **know what their customers’ needs are** and wanting to actually **tailor it to their needs** and be specific and with online it gives the ability to see what they are browsing, if they browse something or not browse it, how many times did they look at the same product, did they, how long did it take them to make the purchase, what else did they look at, so it gives you a **whole range of data that you wouldn’t ordinarily have** in a normal store, you actually can’t get that information, so it gives you everything on the person and you know who they are, you can gauge from that address that you are delivering to what the persons LSM is so yes definitely.” Respondent 10*

*“Ja I think **data is extremely valuable to a retailer, a retailer really needs to exist and be underpinned by data**, so the retailer is looking to gather data from consumers as much as possible but you can’t just expect that from a customer, you also have to offer value back to the customer...” – Respondent 7*

Construct - Mobile Applications can be used as a medium for CRM (Customer Relationship Management”)

This builds on the first construct, elaborated upon above. In order to service the needs that the consumer has and better manage the relationship with the consumer, the consumer needs to be understood better. This construct talks specifically to utilisation of the application to create an environment that takes the needs of the consumer and builds functionality that allows for the consumer to be at the focal point of a retailers decision making. This construct was combined with the construct of customer-centricity, as in both constructs, the needs of the consumer were of primary concern to the retailer.

Respondent 4 builds on the concept of customer-centricity being facilitated by the use of mobile applications by tying customer centricity to the concept of customer loyalty – if consumers believed that they are valued, they will demonstrate loyalty to the retailer. Consumers can believe that they are valued by being central to the decision making of the retailer. The respondents expressed their views as follows:

*“For sure. I think never has there been a better time **to listen to the consumers**. In fact you don’t even have to beg them for information, they will tell you what they want and how they want it. It is a matter of creating an environment that **allows for customer-centricity** to be at the centre of what the organisation believes in, as opposed to a traditional business model and throw in what the customer thinks at the end.” – Respondent 12*

*“Ja, so that sort of leads into the previous comment regarding the CRM or AI part of it, is that the **mobile app enables you to better that relationship actually**; if you are understanding your consumer really well that co-creation value should be very easy and natural so that exactly what you are saying, consumers are ... well retailers are being able to keep customers loyal and give them added value and customers are staying **loyal because they feel valued**” - Respondent 4*

Respondent 12 then went on to elaborate on mobile applications being central to the structure of the business, with e-commerce and customer centricity both being core pillars to that structure and alluded to the fact that the organisation needed to be swift in order for the customer to be central in decisions made within the company. However, this alluded more to the concepts organisational design.

An additional construct that emerged, even though minor, ties into the themes of CRM and transactional efficiencies was theme of customer convenience. This ties into both the constructs

discussed above as both data analytics and effectively managing the customer relationship allow for convenience to be created for the customer – and this was broken down into two aspects:

1. Respondent 3 talked to the ability to “*cut through the clutter and give me what I want as a customer*”. This alludes to the fact that mobile applications can be used as a tool firstly to understand what the consumer wants and secondly, deliver on that specific need. This allows the consumer to bypass any information or processes that they do not need to endure, thus making the entire process more convenient for the consumer.
2. Respondent 6 talked to the fact that the transactional costs of making a purchase within a South African environment were a problem for the consumer and the use of mobile applications as part of an omni-channel strategy allowed for these costs to be bypassed. The respondent specifically talked to the benefits of click and collect as a mechanism for convenience, providing the consumer with savings on the transactional costs. The respondent also talked to the convenience and cost-saving factor from the retailer’s point of view when marketing to the consumer is reviewed.

5.5.3.3 Interview question 8

“How do you believe that mobile applications could facilitate transactional efficiencies within retail organisations?”

Interview question 8 looked at one of the specific pillars of value creation within the organisation, namely the ability of mobile applications to create transactional efficiencies.

Transactional efficiencies were alluded to within the previous question, under the construct of customer convenience.

Overall, the respondents interviewed believed that the use of mobile applications created transactional efficiencies within the business. The constructs deduced from IQ 8 are presented in Table 13 below:

Understanding how mobile applications drive transactional efficiencies

Rank	Constructs	Frequency
1	Yes - Time-Saver	16
2	Yes - Reduces Fixed, Variable and Operational Costs	7
3	Yes - Convenience for the Consumer	6
3	Yes - Removes Boundaries	6

Table 13 – Constructs for IQ 8 - Understanding how mobile applications drive transactional efficiencies

Construct – Mobile applications allow for time-saving and create convenience for the consumer

The primary construct deduced from this interview question was around the time saving that mobile applications provided to both retailers and consumers. An answer that was consistent amongst several respondents was the time that it took to process a physical transaction within store – queueing and processing time. The respondents also implied that reducing the que time is what would be valuable to both the consumer and retailer as it enhances efficiencies for the retailer and reduces time spent

waiting for the consumer. Some of the selected quotes below highlight the potential of mobile applications to reduce customer queueing times:

*“Well for me it is about how do you take away the **pain of standing in queues** down to mobile applications, you could have the **mobile application** on your phone where when you come to the till point you just **touch and go** or you can have vouchers loaded to the customer and it is working as well” – Respondent 5*

*“I think like tills and **queues are always a massive issue**. You look at that you want to spend 1.8 billion on IT infrastructure. If you have a decent mobile application can a customer go into store, scan it on their phone.” – Respondent 3*

*“I think there are a number of ways; the first way is it will allow retailers to have very **simplistically more checkout point**. So typically when you design a store you allocate a specific number of checkout point depending on the size of the store” - Respondent 6*

The respondents above also advocated for a tap and pay functionality which could be utilised through a mobile application. Respondents also referenced the technology employed by Amazon as an example of this. This was an instance of the use of an application saving the retailer on spending on additional cashiers and saving the consumer on time spent on checking out and paying for their goods.

Time saving was tied into convenience for some of the respondents as well. Respondent 11 has a view that mobile applications could be used to save consumers time by providing them with information around added services that the business offered:

*“But with a mobile app, for a **mobile itself, people don’t have to come into the store** to come and find out what their credit limits are, people don’t have to come in to the store to come and pay their accounts.” – Respondent 11*

The use of mobile applications to check what is available in store via a mobile application to ensure that their selection is available was another aspect of time saving that emanated from the interviews. Respondent 10 believed that another aspect of time saving and convenience was could be analysed through the use of data analytics to predict consumer needs:

*“Most definitely. It **definitely is a time value saver**, in terms of what we have been speaking about you should be... you will eventually be able through mobile apps to get to the point where you are suggesting what your customer wants before they even know that they want it. These sorts of technological advancements are hugely efficient.” – Respondent 4*

Convenience and time saving was brought forth in the respondents views on the ubiquitous nature of mobile applications – it allowed consumers the ability to access the retailer at any time and any place, provided that they have a connection that allowed their mobile device to connect to the internet. The use of mobile applications also removed geographical boundaries and allows consumers to access a wider range of goods without physically travelling to the retail destination. This is evident in a quote from Respondent 12 below:

*“The technology will enable more **efficient payments, ease of transactions, flexibility, opportunity to transact 24 hour a day**, it removes borders and boundaries, it takes away much of the limitations*

that you have today; a mall closes at a certain time, online is always open. From a retail perspective do you have to exist in the geography of your customers? The answer is ‘no’” – Respondent 12

Construct – Mobile applications reduce fixed, variable and operational costs

Another construct that emerged from the interviews was around the potential for cost saving for the retailers, which mobile applications provided for. The respondents alluded to the fact that mobile applications would be able to allow the retailers to control their stock levels more efficiently. Respondents alluded to the fact that the ability to collect and analyse data of the consumers that are utilising the mobile application would allow for a better stock maintenance position and thus reduce operational costs for the business. Respondent 2 specifically touched on the point of stock management and the efficiencies that mobile applications brought forth for the retail organisation:

*“So I think there **is positive efficiencies in terms of stock management**, stock flow and also being able to localize within different areas, South Africa is quite diverse in terms of geographic locations and I think it would help us to understand the behaviour of the customer better and also **maintain better stock input and flow** and eliminate the dead stock which is really a capital drain on the business.” – Respondent 2*

Other respondents pointed to the efficiencies that could be extracted by reducing physical infrastructure with regards to the capital expenditure spent on stores. This was then contrasted against the potential benefits and savings that would arise from investing in an online platform. The savings that would arise would be from a rental as well as an operational perspective. This was put forward by Respondent 8

*“Um, well yes because I mean from a staff perspective absolutely, from a bricks and mortar cost as a **rental cost definitely, operational cost definitely**... I think each time you kind of look at that equation alright, or every time you are faced with a store opening now you should have to look at in the context of whether it would be better or we would be better off investing in online retail and I think if we are all honest with ourselves and prepared to take a forward looking view, it is always going to be the latter.” – Respondent 8*

Respondent 6 alluded to the operational costs as well, and spoke about queue points within the store, specifically during peak periods. They argued that the use of a mobile application to check out actually reduced the need to have additional queueing points and thus brought down the number of staff that were required to man those till points. This is evident in the quote from Respondent 6 below:

*“So you can never design a store for the peaks, you can never design a store for the 24th of December or the 23rd of December or for a Saturday, but if you have got **mobile devices that allows you to be able to scale up and scale down** based on demand. So if you’ve got four point of sale you can add four more mobile devices for checkout you can check twice as many consumers out on a Saturday on one ‘o clock when it’s the busiest time of the week.” Respondent 6*

Construct – Mobile applications removed boundaries

This construct was based upon some respondents’ viewpoint that mobile applications allowed for retailers to cater to a wider range of consumers and not be limited to consumers within the vicinity of their physical stores. This point was touched on within the first construct around time saving and efficiencies. The other barrier that the respondents believed could be removed was the constraint of

a retailer having set hours for its bricks and mortar operations. Respondent 12 surmised this within the quote referenced as follows:

*“It **removes borders and boundaries**, it takes away much of **the limitations** that you have today; a mall closes at a certain time, online is always open. From a retail perspective do you have to exist in the geography of your customers? The answer is ‘no’ – suddenly your customer base is a global base rather than just a geographical limitation.” Respondent 12*

5.5.3.4 Interview Question 9

“There is a major drive at the moment to collect and mine consumer data. Mobile applications can be used as a tool for this data collection. Which elements of the data collected do you believe to be most valuable and how could it be used to create value, as defined earlier, specifically touching on the points of market share expansion and information sharing?”

This question built on one theme that was prevalent throughout the interviews thus far – the theme of utilising the mobile application to mine and collect data, collate the data and perform an analysis of the data collected to provide better goods or services for the consumer. The question then tries to understand how elements of the data collected could be used for value creation, with a focus on market share expansion and information sharing.

From the responses, it became clear that respondents believed that the ability to cotton on to consumers’ behavioural patterns was the primary element of the data that could be harnessed to create value for the retailer. The frequency at which this appeared is presented within Table 14 below and is the primary construct to emerge from the question.

Data that can be gleaned from mobile applications

Rank	Constructs	Frequency
1	Behavioural Patterns (Shopping Activity, Preferences, Routine)	23

Table 14 – Construct for IQ 9a - Data that can be gleaned from mobile applications

Construct – Mobile applications assist retailers in accessing consumer’s behavioural patterns

Respondents believed that once a consumer’s behavioural patterns could be mapped, it would then be easier to create a value proposition for those consumers. General behavioural patterns captured through the mobile application could then be extrapolated to map a consumer’s behaviour on a larger scale as believed by Respondent 3:

*“So I definitely think that obviously with consumer’s consent you could have **access to their behaviour** on the app, which to a large extent will be an indication of behaviour in general. And then based on that, then you can understand things like **spending patterns** – how often do they come to you but not buy anything – that kind of stuff.” - Respondent 3*

Respondent 6 believed that the data could also provide insights as to what the unfulfilled potential around a consumers need was and to try and utilise the data to fulfil that need:

“The most important data is I think what the consumer has done, what transactions they have concluded with you, but that only gives you a view of what they have done with you, it doesn’t give

*you a view of what they were looking for. So the big opportunity on data is always to find out what the **customer's need was** and that's where I think mobile apps or websites can provide lots of insight" - Respondent 6*

The interview question then asked respondents to elaborate on how the data around consumer behavioural patterns could be utilised to create value with the constructs of market share expansion and information sharing being kept in mind when respondents elaborated on their initial answer. The primary constructs assembled from the respondents answers focused specifically around the consumer. The full list of constructs are provided in Table 15 below. The focus will be on the top five constructs, with constructs 1 – 3 examined as a grouping, as the focus is specifically on the consumer.

Usage of data from mobile applications

Rank	Constructs	Frequency
2	Accurate Understanding of Customers	16
1	Customisation and/or Customer Centricity	15
3	Customer Relationship Management (Incl. Customer Feedback, Customer Co-Creation, Customer Experience)	9
4	Proactive Product and Service Offering	7

Table 15 – Constructs for IQ 9b - Usage of data from mobile applications

Construct – Mobile applications can be used as a tool to gain a better understanding of the consumer, focus on customer centricity, and better manage the relationship with the consumer.

The principal answer from the respondents was that the data collected could be analysed and interpreted to build a better understanding of the consumer that the retailer was serving. By understanding the consumer, the retailers believed that they could then customise offerings to particular consumers and enhance the relationship with the consumer. The idea of information sharing also comes through quite strongly in the respondents' answers. Each element of the broader theme of customer focus will be examined through selected quotations that follow:

*"Okay. So this I feel is probably the most important part as mentioned, of the mobile app and it is something I am quite passionate about. I think that the accessibility that retailers have to data at the moment is completely inaccurate, and being able to **track the person's activity cycle** or the **customer experience** through the shopping activity, is almost perfected through a mobile app because you have **direct access to everything**; you have got financial records, their behavioural patterns, their personalization and what they prefer, or their preferences should I say.." – Respondent 4*

Respondent 4 believed that the ability to gather data was improved upon from current methods within retail and that they thought the mobile application could be used to gain a deeper insight to the consumer based on the wealth of information that could be extracted by the level of access that the mobile application allowed retailer's to capture and understand to the consumers behavioural patterns. This was echoed by Respondent 3, who also believed that being able to fully comprehend a consumer's behavioural patterns was essential to being able to cater for a consumer's needs:

*“I definitely think that obviously with consumer’s consent you could have access to their behaviour on the app, which to a large extent will be an indication of behaviour in general. And then based on that, then you can **understand things like spending patterns** – how often do they come to you but not buy anything – that kind of stuff. Because right now you only know behaviour based on purchase. We don’t know behaviour outside of that. It is all inferred. And through mobile apps you can actually record more than just spend data – but **behavioural data**. And I think for me behavioural data is important because then you can actually know, you can start **understanding customer’s needs better**, how they walk around the stores, and a few other things” – Respondent 3*

The theme of customer centricity was also elaborated upon within the views expressed by the respondents. This was brought about by the respondents as the ability to translate the data into actionable activities that catered to the needs of the consumer as they arose. This was also in reference to the idea of information sharing, as there was a passage of information from the consumer to the retailer (communicating their needs) and back to the consumer from the retailer (communicating the offer based on the consumer’s needs). This is evidenced within the selected quotations that follow:

*“So if you are in a retail environment – and again I will go back to the Edgars environment – you take a Fit to be You, as opposed to a Charter Club and Kelso customer – totally different customers – and you will be **able to know their agenda, their likes and dislikes**, and you will be able to **speak to them** in a toned manner and language that they ... ag, not even necessarily language because you don’t want to go in to English and.... But tone and a manner that they would like to be spoken to, but you would also like to be able to gather information that would help you tailor make your campaigns.” – Respondent 11*

*“So you get a lot more **insight on who your customer** is and what it is that **they are looking for** and then at the same time you can tailor make, so when you have specials so you don’t have to go and barge, you have information so you know that someone came and browsed a certain item and didn’t purchase it for whatever reason and then when it goes on sale you can then send them a specific email targeting so now you **can do target marketing based on peoples specific likes and dislikes..**” – Respondent 10*

Gaining the information around consumer preference and then being able to utilise that information to cater to the consumer’s preferences talks to the idea of better managing the relationship between the retailer and the consumer. Respondent 4 believed that the utilisation of a mobile application enabled a retailer to better manage their customer relationship management (CRM) agendas:

*“So I think it is the best way to offer.... And on top of that I think most retailers are using CRM programs or analysing data for the retailer’s benefit – where it should be **a customer focus and brought back to a customer-centric strategy, which an app allows you.**” – Respondent 4*

Respondent 7 believed that mobile applications could be used to manage the relationship with consumer and understand the consumer sentiment towards a retailer’s brand. It also allowed for retailers to communicate with consumers and understand if there are any problems that arise and then address those grievances:

“..same with customer service, so you can then start to get a sentiment view of the customer so whether the customer is in a happy place, not happy place, whether he is giving positive reviews on

*the app of our products and services or whether he is in the escalations or complaints section, you then have an **overall sentiment view** and then whether he is sharing or talking on social media...” – Respondent 7*

The idea of market expansion through the use of mobile applications was affirmed by several respondents. However, the respondents who believed that mobile applications did allow for an expansion of market share within a market, they believed that the size of the overall market would not increase as evidenced in quotations from Respondents 3 and 10 as follows:

*“Ja, so I think you capture the share of wallet, it is growth for you. I don’t necessarily think we will grow the entire clothing market. **So I think that is still a fixed pie.**” – Respondent 3*

*“Yes and another big thing is **increasing your basket sizes to increase your market share**, so it makes it a lot easier because if you know certain habits of certain customers” – Respondent 10*

Both respondents went on to elaborate on how market share expansion would only be generated through the better understanding of the consumer, garnered by understanding the data collected from the consumer through the mobile application. The data allowed for the retailer to gather information around the habits and behaviours of a consumer and enabled the retailer to target the consumer with more specific offers, thus capturing their share of wallet.

Construct – Mobile applications allow for proactive product and service offering

This construct ties into the constructs discussed above – being able to understand the consumer and more accurately provide for the consumer. Once consumer preferences have been gleaned, respondents believed that it became easier for the retailer to then cater towards the needs of the consumer and tailor their offerings towards a particular consumer. The data collected through the mobile application can be analysed and efforts to satisfy the needs of the consumer can be then focused, as opposed to using a “spray and pray” approach, as described by Respondent 5 below:

*“It allows you to build a profile on each specific customer and by doing that there you know you can start reducing your above the line spend and start **targeting deal specific, product specific products or deals** to these customers instead of spraying and praying.” – Respondent 5*

Construct – Mobile applications reduce wastage and increase efficiencies

This construct was brought about by respondents talking through the inefficiencies regarding marketing towards consumers. One of the respondents (a male) shared a personal story relating that he had received a message wishing him a happy Mother’s Day and requesting him to join into a Mother’s Day event. The point conveyed was that if the sender of the message understood the data pertaining to him correctly, they would not have wasted money marketing to him – the wrong target.

5.5.3.5 Conclusion to research question 3

The overwhelming theme that came through the four interview questions that made up research question 3 was that information gathered through the mobile application could be analysed in order to benefit the retailer by providing a better understanding of the consumer. Transactional efficiencies, information sharing and to a lesser extent, market expansion were all deemed to be enabled by the mobile application. The results will be interpreted in more detail within chapter 6.

The primary themes that relate to this research question are:

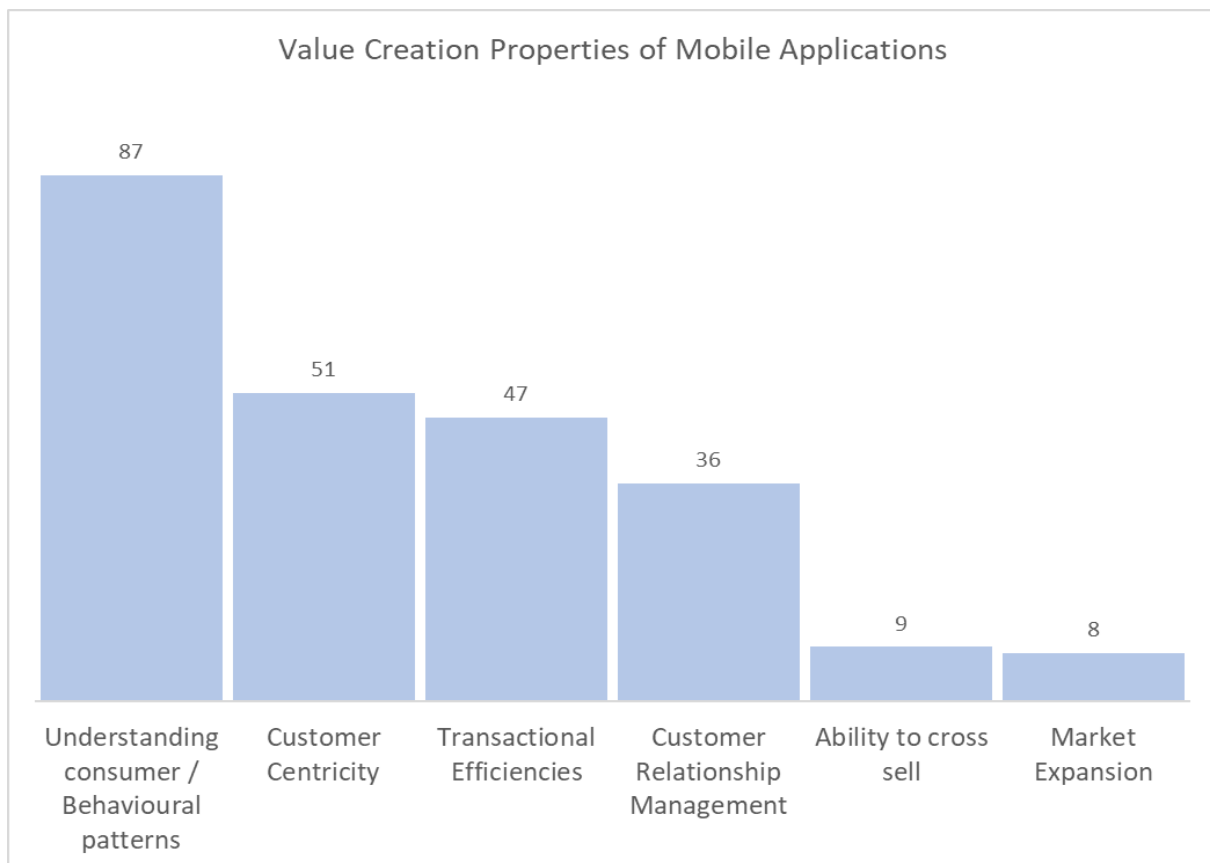
- Value can be co-created through mobile applications with consumers through data analytics leading to improved customer relationship management (CRM)
- Value can be created through mobile applications as transactional efficiencies are realised
- Information sharing can result in value co-creation as it allows for a more accurate understanding of consumers’ needs and allow retailers to be more customer centric.

5.6 Conclusion to Chapter 5

This Chapter reviewed the varied opinions that were collected and collated from 12 respondents from the retail industry. These responses were provided in relation to the research questions proposed and the most insightful quotations from respondents were used within the respective sections in order to provide some context of the respondents’ views.

The results demonstrated support of the existing literature and provided insightful and unique connections regarding the value that mobile could assist in creating. The findings conclude that mobile applications can be used as a tool for value creation within the retail environment in South Africa.

Below is a graphical deconstruction of the most frequently mentioned themes that emerged from the in-depth interviews specifically focussing on the value creating elements of mobile applications, as viewed by the retail executives:



Graph 1: Value Creation Properties of Mobile Applications

These findings will be discussed in more detail within Chapter 6.

Chapter 6: Discussion of Results

6.1 Introduction

Chapter 5 presented the results from the qualitative research constructed from twelve semi-structured interviews. This Chapter will discuss and interpret the outcomes of the interviews that were conducted, aiming to align the opinions of the retail executives interviewed with the views expressed by scholars in the literature reviewed in Chapter 2. The aim of this Chapter is to consolidate the information and expand on the discussion in order to present a cohesive set of results in order to meet the research objective.

As smartphone technology in South Africa is set to rise over the next couple of years, a need remains for retailers to embrace this platform in order to harvest the potential that exists from the large-scale smartphone adoption which is predicted to happen over the next couple of years.

To reiterate what the 2017 KPMG report on the retail sector within South Africa stated, The risks faced by retailers are the low barriers to entry coupled with the rise of mobile commerce. This provides an opportunity for brick and mortar retailers to utilise the widespread adoption to counter efforts of online retailers and new entrants into the marketplace.

With this context in mind, the research questions in addition to the constructs will be examined below and analysed against the literature compiled in Chapter 2.

6.2 Research Question 1

What is the role of the omni-channel strategy within a South African context and what role do mobile applications play within this strategy?

This question was constructed to build an understanding of how senior people within a retail environment see the retail environment evolving. It also assisted in gaining an insight into whether they envisaged consumer trends and behavioural patterns changing as well as the role that mobile technology has to play in shaping their future.

There primary constructs extracted from the interviews were:

- An omni-channel strategy is key as it provides consumers with convenience,
- An omni-channel strategy important to remain competitive and relevant
- Mobile applications have a role to play, but this is dependent on Smartphone adoption, the costs of data being reduced and consumer trust being built in use of the applications. They are applicable across middle to high income immediately and low to middle income in the long run;

6.2.1 An omni-channel strategy and specifically mobile as a component, is key as it provides consumers with convenience that they want

The primary construct that arose from the collated data was that that mobile applications, as part of a larger omni-channel strategy, provided convenience, which is what the consumer is looking for. What stood out is that this particular construct was more forthcoming than the adoption of mobile as a means to remain relevant and competitive. This complies with the research conducted by

Balasubramanian, Peterson, and Jarvenpaa, (2002) who referenced the extent to which time is saved as one of the primary dimensions across which mobile commerce operates. This also talks to two of the pillars of value creation as discussed by Zhu and Kraemer, (2005): Transactional efficiencies and information sharing and integration. Through the information garnered through a mobile applications, retailers are better positioned to provide more accurately for consumers' needs as and when they arise.

Transactional efficiencies are the most closely linked with the theme of convenience and will be discussed in detail in the discussion around Research Question 3.

6.2.2 Mobile applications will allow the retailer to remain competitive and relevant

Hiraishi *et al.*,(2016) state that the behaviour of consumers is evolving. To keep up with evolving consumer behaviour and satiate their needs, retailers need to adopt an omni-channel strategy and evolve as well. Respondents who participated in the interviews did not completely concur with this sentiment, by stating that within a South African context, retailers would need to adopt an omni-channel strategy to satisfy the mid-to-high end of the consumer base serviced and build capability for when the rest of the market developed capabilities and trust in the technology. This would allow the retailers to remain relevant in the long term.

The ability of the retailer to create "lock-in" as defined by Amit and Zott, (2001), who attested that lock in allows for the movement of consumers to competitors to be arrested. Respondent 4 spoke to this: "*And if you are not going to be able to offer them this and they are not loyal, then they will leave and go to a platform that does.*", Respondent 4 pointed out that retailers who did not adopt mobile or an omni-channel strategy were likely to lose consumers to competitors. This was also stated by Brynjolfsson, Hu, and Rahman,(2013) who stated that traditional brick and mortar retailers needed to adopt an omni-channel strategy and move towards being dual-channel retailers. This shift is in response to the amount of information available to the consumer at present and the evolution of consumer behaviour, which made the retail landscape highly competitive.

6.2.3 Mobile applications have a role to play, but this is dependent on smartphone adoption, the costs of data being reduced and consumer trust being built in use of the applications.

Shankar, Venkatesh, Hofacker, and Naik, (2010) talk to economic barriers being an inhibitor of mobile technology adoption and acceptance of mobile offers from retailers. This was evident in the dominant theme that came about around the potential of mobile, provided that certain barriers to access were surpassed. The high cost of accessing and utilising the mobile device was a barrier to widespread adoption amongst the South African population. Access to the technology was not covered within the body of the literature review as all the research referenced was conducted within environments that had high rates of technology adoption. South Africa, though ahead of some African countries, has lagged in terms of 3G and 4G adoption.

However, Davis, Maccrisken, and Murphy, (2001), highlight the switching costs that are associated with the adoption of a particular platform as an important factor in the prospective adoption of the said platform. This is reinforced by Wu and Wang, (2005), who cite perceived cost as a factor influencing user adoption of a mobile platform. The theory then gives additional credence to the views of the retail executives who highlight the high costs of either the mobile devices or the cost of data as a barrier to the technology being adopted on an extensive basis.

The other point highlighted by retail executives was the issue of trust that consumers have with the technology. This was more of an issue with consumers at the lower end of the income scale, who were new adopters of the technology and thus wary of the potential high costs that would be involved by using the platform. This is exemplified by the quote from Respondent 5, who said: “...there is still a huge disproportion that are **too scared** to explore their smartphones even more because of the **cost of data** and there is the **trust factor**.” . If consumers are uncertain about the costs of transacting or do not have a full understanding of the functionality and the associated costs, they would be unwilling to adopt the platform. This links to the theory proposed by Shankar, Venkatesh, Hofacker, and Naik, (2010), who also point to education around the technology as a prohibitive factor with regards to adoption.

This then erodes the possible transactional efficiencies that could potentially arise for the consumer when utilising a mobile device due to the high cost of transacting.

Understanding how the target market will react to the technology is then important to penetrating a specific market and ensuring mass adoption.

Table 16 below shows the type and place of access to the internet, detailed by province and geotype. The majority of internet access is through mobile devices. With mobile representing the preferred access point to the internet, retailers would need to be able to extend that trust factor to mobile applications.

Place Internets accessed	Geotype	Province (per cent)									
		WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
At home	Metro	27,3	6,8	NA	8,2	9,0	NA	14,9	NA	NA	15,2
	Urban	16,6	5,8	6,3	4,7	6,7	6,6	13,8	5,4	5,2	8,3
	Rural	16,6	0,7	3,5	2,4	0,8	0,6	17,3	6,3	0,5	2,0
	Total	23,6	3,9	5,5	5,4	5,2	3,5	14,7	5,9	1,6	9,5
At work	Metro	25,0	20,9	NA	12,2	21,4	NA	25,4	NA	NA	23,9
	Urban	14,0	12,8	14,8	10,4	20,5	12,0	22,5	12,6	15,4	15,3
	Rural	9,0	2,5	4,6	2,7	4,4	3,4	25,4	5,4	2,7	3,9
	Total	20,9	10,9	12,0	9,9	14,5	7,6	25,0	8,5	5,5	15,8
Using mobile devices	Metro	64,5	67,0	NA	62,6	52,8	NA	62,2	NA	NA	61,6
	Urban	45,1	55,4	57,2	50,0	57,6	59,9	73,1	63,3	55,7	58,0
	Rural	25,8	29,9	39,4	41,0	35,5	45,2	58,8	50,0	35,5	38,3
	Total	56,9	48,0	52,2	52,4	47,1	52,4	63,6	55,8	40,0	53,9
At Internet Cafes or educational facilities	Metro	12,6	10,8	NA	6,8	15,9	NA	16,8	NA	NA	15,1
	Urban	11,3	9,0	3,5	8,5	8,9	5,4	14,7	5,9	3,7	8,5
	Rural	1,1	1,3	4,3	6,0	4,8	3,0	9,3	4,2	1,9	3,2
	Total	11,6	6,2	3,7	7,7	9,9	4,2	16,4	4,9	2,3	9,8

Table 16 -Household access to the internet by place of access, geotype and province, 2016. (Statistics South Africa, 2017)

The table above depicts consumers who have already built up trust within mobile technology to access the internet. The ability of retailers to build on this and expand consumer knowledge with regards to the use of mobile applications will enable and encourage potential consumers to adopt the platform.

As the respondents believed that mobile applications are specifically targeted at the mid to high end of the marketplace, understanding how retailers can overcome the barriers around cost and trust is

pertinent to retailers achieving mass adoption. Information sharing, as discussed by Zhu and Kraemer, (2005) would then be more important as a value creation tool as it would allow retailers to educate potential users around the costs of transacting through a mobile application as well as address any concerns that the potential adopters may have. However, as pointed out by respondent 9, South African consumers have already been somewhat educated in the use of mobile technology to transact through the use of USSD strings: *“And we don’t realise it but if we are using phones and a USSD system, it is a just another way of shopping.”*. This was a perfect example of understanding how to build on the consumer base that already transacted through mobile, but need to take the next leap to embrace the mobile application platform.

A final point that needs to be discussed is that retailers believed that mobile applications are targeting a specific portion of the market in the short to mid-term, but felt that the technology has the potential to be adopted by the entire spectrum of consumers. The respondents believed that the mid to high end of their consumers would be willing to adopt the platform and pointed to a growing middle class as a potential target market. But the lower end of the purchasing spectrum was reviewed as the potential adopters in the long term as well. Respondents believed that the lower-end/lower income consumers would take some time in overcoming trust barriers and there would need to be a significant change in the data cost structures within the network cost structures. There is no specific literature reviewed that points to a specific LSM profile with regards to mobile application adoptions. However, the views of the retail executives provide an insightful view to the potential value that could be harnessed in order to extract value from the mobile application.

6.3 Research Question 2

“How can mobile applications play a role in business configuration and what are the fundamental elements needed to encourage adoption and ensure success of the application for the retailer?”

Research question 2 was constructed to understand the potential of the role mobile applications could play within a retail environment – by trying to understand from retailers how it played a role within their businesses. It also looked at the way retailers could encourage adoption by consumers of mobile applications and enquired around the specific elements that a mobile application would need in order to be deemed successful by the retailer.

The primary constructs extracted from the interviews were:

- Mobile applications allowed for a better understanding of the consumer by providing the retailer with data about the consumer which could then be analysed and acted upon.
- Adoption could be encouraged by consumers through a value proposition offering
- The primary constraint for the application was simplicity to ensure ease of use

6.3.1 Mobile Applications allowed for a better understanding of the consumer by providing the retailer with data about the consumer which could then be analysed and acted upon.

The first part of the research question focused around the role that mobile has to play in giving retailers the ability to reconfigure their businesses from traditional models that they are using. Brynjolfsson, Hu, and Rahman, (2013) professed that for traditional brick and mortar retailers to

continue into the future, they would need to critically reevaluate and rethink their strategies in order to compete with online retailers and cater to the evolving consumer. The authors also cited consumer data analytics as an integral part of retailers' strategies in the future, which provided the retailer with an "unprecedented opportunity to not just understand customer transactions, but customer interactions..."

Respondents echoed this sentiment. They believed that the ability to harness data through the mobile application allowed for retailers to more accurately understand the needs of their consumer and more effectively cater to those needs by using and interpreting the data collected. Respondents also believed that the retailer launching their own mobile application would be critical to harnessing the consumer data. The application would be a tool for the collection of data by tracking and recording consumer's preferences, purchases and location and transmitting this back to the retailer. Respondents also referenced the use of social media applications, such as Instagram, to view consumer preferences based on "likes" that an item of clothing displayed may attain. All of this data would then be transmitted back to the retailer to be analysed so that the retailer could then tailor their needs towards the consumer based on the analysis of the data.

In addition to data collection, the ability to communicate with the consumer via the mobile application also came through as a benefit to the retailer and a potential source of value creation. Shankar and Balasubramanian, (2009) referenced the ability of mobile devices to enable communication between consumer and retailer and being interactive in nature. This allowed retailers to not only communicate offers, but receive feedback and provide customer support. Thus mobile could be used as a tool for customer relationship building or CRM, as professed by some of the respondents and echoed in a quote taken from Respondent 5: *"Okay so I think the biggest thing in terms of application for any retailer is to have their own app because that gives you access to lots of data and two things, it gives you **access to the data** and it gives you **access to the customer** because you can now start **communicating with the customer via their mobile phone and then you can build up a history where you can pick up shopping habit...***"

The ability of mobile applications to harness data is reinforced by the theory presented by Zhu and Kraemer, (2005) who identify information sharing and integration as a value creating pillar for an entity. They confirm that engagement with the consumer is integral to understanding their decision-making process and once their preferences and needs are understood (the data), it becomes easier for the retailer to offer a more tailored proposition to the consumer that lies within their preference sphere. This is reinforced by Maglio and Spohrer, (2008), who profess that the ability of an entity to engage in knowledge based transactions, stemming from the availability of data, is central to the co-creation of value between the entity and consumer.

Data collection and interpretation is also key to transactional efficiencies, which can be brought about through the reduction of transaction uncertainty, which forms part of transactional efficiencies as explained by Zhu and Kraemer, (2005) – retailers will be offering consumers what they want through the collection of data collected from the consumer, thus reducing the uncertainty in the transaction. This is backed up by Amit and Zott, (2001), who talk about efficiency as a pillar of value creation. Efficiency is created by leveraging the information collected to reduce the transactional costs endured by consumers. In turn, this can achieve lock in for the consumer – a second construct of value creation by Amit and Zott, (2001). Lock in is achieved by using the data collected to customize and tailor offerings to the consumer and build trust through convenience. This was stated by respondent 9: *"I think the one thing that – and this links back to your first question – people often visit, sometimes to*

*buy but mostly to research, and when they see you are **making life easier** or something, by putting forward suggestions, either they conclude the sale online but if they don't they certainly will walk into your store, because as I said earlier, it is a research platform as well ...".*

However, the literature did not talk to the capabilities that would be required to analyse the data. This was brought about by Respondent 12, who talked to the requirements needed by retailers to analyse the data : *"What you have to do is build deep analytics, big machine learning capability, and every transaction that takes place, you have artificial intelligence doing its thing in the background so that you can build propensity models and prediction models to effectively predict with a level of accuracy what is going to take place, and what I mean by that is what is the customer most likely to purchase."*

The cost of implanting the capabilities would thus have to be weighed up against the benefits gained from building the capacity, and this has emerged as a possible area of future research.

6.3.2 Adoption could be encouraged by consumers through a value proposition offering

The initial adoption of a mobile service is the important first step toward realising the success of that platform (Hsu & Chiu, 2004); (Ting-Peng Liang et al., 2007). Thus, understanding how retailers aimed to encourage user adoption was essential to realising how value could be created from the use of mobile applications.

Traditionally, user acceptance is theorised through the application of the Technology Acceptance Model (TAM) discussed briefly in Chapter 2. The two pillars that support TAM are perceived usefulness (PU) to the consumer as well as perceived ease of use (PEU) of the technology. Yang, (2013), using TAM to study mobile application adoption, believed that the PU of a mobile application was achieved when the application allowed for instant connection and transfer of timely, exclusive and personalised information.

The respondents believed that functionality and design enticed consumers to adopt. This talks to both usefulness and ease of use and could be used to achieve novelty and lock-in, as described by Amit and Zott,(2001). The respondents believed that offering the consumer a value proposition would actually allow for the mobile application to be adopted by consumers within a South African retail environment. This could be to assist consumers to overcome their initial hesitancy – the issue of trust discussed in 6.2.3 above.

The value proposition was then elaborated on further – vouchers that could be redeemed once the application was accessed, reward structures based on usage and exclusive content. Perhaps the incentive that came out the strongest was access to free in-store Wi-Fi accessed through the application. It could be argued that a value proposition could then be construed as perceived usefulness to the consumer, as they are given an added advantage through use of the technology, be it vouchers, rewards or free access to Wi-Fi.

The theory around use value comes to the forefront when reviewing the link between consumer and the retailer. The adoption of mobile applications by the consumer would then need to service or satisfy a particular need that the consumer may have – meaning that they have specifically decided on utilisation of the application in order to satisfy a particular need. Bowman and Ambrosini, (2000) have described innovation as one of the dimensions of value creation. The ability of retailers to utilise the mobile application in a novel way in order to respond to consumers' needs and thus capture value could be considered as a form of innovation within the retail space.

The concept of value creation then rests on the consumer appraising both the novelty and appropriateness of the particular product that they have adopted as discussed by Bowman and Ambrosini, (2000). If the product achieves a high appraisal rating, there is a higher likelihood that use value will increase with the consumer. Within the sphere of mobile applications, it is clear that the value proposition, should it be appropriate, would allow the retailer to encourage adoption by the consumer. Thereafter, the ability of the retailer to satisfy the particular need of the consumer through the mobile application and be deemed highly appropriate, is pertinent to the long-term adoption and value co-creation with the consumer.

Perceived usefulness could come about through the information shared or transactional efficiencies that the application provides. The usefulness and benefit of utilising the mobile application enabled by the application could likely result in lock in (loyalty and future use) (Shankar & Balasubramanian, 2009). This will be discussed in more detail within the analysis of research question 3.

Respondent 2 also believed that getting consumers to adopt the platform was a marketing exercise as epitomised by a quote from Respondent 2 *“Ja so, I think it is more of a marketing thing... you have to integrate it as part of your TV campaign, radio campaign, online campaign, so you have to put it top of mind back in the customers eye.”*. The use of incentives to drive behaviour could form part of the marketing when construed as a motivator for adoption of the application and would be highly dependent on consumers response to the motivation offered. Shankar and Balasubramanian, (2009) suggest that the motivator for adoption might actually depend on the consumers attitude towards the technology. If, as suggested earlier, there is not a full spectrum of trust built up, the value proposition might not be a motivator to encourage adoption that is significant.

This leads into the secondary discussion around adoption encouragement with a South African context: The need to mitigate connectivity and data challenges – a construct discussed under research Question 1 above. The respondents have one again suggested that a barrier to increasing adoption rates is the high costs of data. Overcoming this barrier would be a step towards assisting adoption of the platform. The prohibitive cost of the primary technology (smartphones) is also brought up as a potential barrier to adoption as well, though this was not as prominent as the high data costs.

The perceived usefulness of mobile applications could supplement some consumers choices around moving from an application, when the high switching and transactional costs associated with adopting a mobile application are taken into account. Shankar and Balasubramanian, (2009) reference the high costs of switching as an inhibiting factor to the adoption of mobile technology. Shankar, Venkatesh, Hofacker, and Naik, (2010) talk to economic barriers being prohibitive with regards to mobile adoption.

The use of Wi-Fi could be used to circumvent the barriers of high data costs, discussed above, as well as trust. As suggested by Respondent 2: *“...that is often that customer bases only form of interaction, so if you are able to provide some sort of offload or cash in functionality given the data complexities in South Africa, so that when that customer is in a Wi-Fi zone, that app downloads, caches all the content that is needed then to review and engage with on the taxi ride home, adoption should be a no brainer.”*

If this holds true, then the construct of economic barriers being barrier to adoption can be circumvented.

6.3.3 The primary constraint for mobile applications is simplicity to ensure ease of use

In order for the application to be successful if adopted, retailers need to ensure that consumers had a heightened sense of perceived ease of use in order to enhance their perceived usefulness of the technology (Shankar & Balasubramanian, 2009; Wu & Wang, 2005).

Respondents believed that user-friendliness was the primary element that a mobile application should possess. Respondent 12 believed that *“Ease, simplicity, slick”* was what an application should have, which was echoed by Respondent 2, who said: *“Think that is a great question and I think simplicity, I always believed in simplicity for me, so any app you have has got to be intuitive.”*

The suggestion then is that retailers should ensure that the complexity of navigating an application is removed and the consumer is able to utilise the application with ease through the simplicity in use. While the TAM talks primarily to adoption, ease of use can be applied in this case to try and achieve lock in, one of the primary elements of value creation as described by Amit and Zott, (2001). Lock in can be achieved by offering consumers an application that is easy to interact with and ensures that the consumers return to the application due to the ease of use and convenience that the application provides.

Yang, (2013) talks to the ease of use of applications as the ability of the user to effectively interact with the system. Hoehle and Venkatesh, (2015) cite the lack of usability within mobile applications as a primary factor in a consumer’s decision making process around rejecting an application. The ability of the application to be accessible by multiple consumer segments was also raised by the respondents under the banner of simplicity. The ability to get the consumer to return to the application is thus based on their experiences interacting with the application initially and their ability to seamlessly navigate the application.

Thus, the idea of simplicity as the primary element of success holds true when linked to the theory covered in Chapter 2.

Respondents also pointed out to the ability of the consumer to search the application as a construct – this talks to the ability of the application to be “user-friendly” as well. It becomes evident that the ease of use to the consumer is a factor that cannot be overlooked.

The ability of the application to seamlessly integrate with other business functions, enhancing the convenience factor to the consumer. This would also have to be constrained by the simplicity of the application and would allow the consumer to access multiple functions of the business through a single point, thus enhancing the perceived usefulness to the consumer.

A final point on this research question focuses on the ability of mobile applications to promote cross-category functionality – the ability to generate cross-sell for the retailer. While not a primary theme, this warrants discussion due to the contrasting view of the retailers around this topic.

Retailers were split on the ability of mobile applications to promote cross-sell through the application, with those who believed that it did basing their views on the ability to track the consumer’s views and purchase history through the mobile application and then tailor offers to suit their preferences and offer complementary goods.

Those who did not, believed that the adoption of mobile applications by retailers would actually reduce the ability of retailers to promote cross-sell within the business, as a consumer transacting on

a mobile application would most likely be focused on the item or items that they intended on purchasing.

The literature as described by Amit & Zott, (2001), however, prescribes that the ability of the technology to offer efficiency, of which an element is the ability to offer a selection range and scale economies. The other element that relates to cross shop is the ability to offer new transactional content, a part of the novelty aspect of value creation.

The empirical data around these constructs is split and once mobile application adoption has been embraced by a multitude of retailers and a large population set of their consumers, research can be conducted on the ability of mobile to generate cross-category functionality within a retail environment.

6.4 Research question 3

“How can mobile applications assist with value creation within a retail environment?”

This question was the focal point of the study. The previous two research questions were to provide insight and background into the environment and functions of mobile applications with retail in South Africa. The function of this question was then to test and confirm if the theory around value creation and technology held true.

The primary themes extracted from this research question were:

- Value can be co-created through mobile applications with consumers through data analytics leading to improved customer relationship management (CRM)
- Value can be created through mobile applications as transactional efficiencies are realised
- Information sharing can result in value co-creation as it allows for a more accurate understanding of consumers’ needs and allow retailers to be more customer centric.

6.4.1 Value can be co-created through mobile applications with consumers through data analytics leading to improved customer relationship management (CRM).

The theme of mobile applications being used as a platform was initially reviewed within research question 2. The question to respondents focused on the utilisation of mobile applications to co-create value with consumers. Respondents believed that utilising mobile applications to gather consumer data and analyse the data presented the best way to co-create value between retailer and consumer. As consumer needs and wants evolved, the mobile application could be used as a tool to understand the requirements that consumers expected from retailers. Information can be collated through the utilisation of mobile applications, for example, to collect feedback from consumers and utilise that feedback to satisfy the consumer’s requirements. This was echoed by Respondent 12: “*I think never has there been a better time to listen to the consumers. In fact you don’t even have to beg them for information, they will tell you what they want and how they want it.*”

Prahalad and Ramaswamy, (2004) have suggested that value co-creation is an outcome of the evolution of societal norms – consumers have increased access to information and connectivity. Through the increased access to information, consumer’s needs are evolving. The emphasis then is placed on retailers understanding the needs of consumer and then deriving the appropriate experience to satisfy those needs. The authors also emphasise the point that value creation lies within

the sphere where retailers and consumers interact and share information. The retailers interviewed believed that mobile applications can act as an instrument and platform for interaction and exchange of information between consumers and retailers. One of the respondents pointed out to the Inditex group and specifically the Zara brand, as an example of a retailer who is connected to consumer behaviour consistently to understand how to better service the needs of that consumer.

This point was especially pertinent, as clothing retailers within a South African environment have been feeling the effects of international mass clothing retailers entering the local market. As suggested by the respondent, there needs to be a level of flexibility and agility in utilising the data to understand and satisfy the needs of the consumer.

This talks to the works of Drnevich and Croson, (2013), who put forward that embracing new IT systems (of which mobile applications form a part of) allows the retailers to be both flexible and agile in order to capitalise on opportunities that arise. Mobile applications, according to the respondents, can then be used as a platform to build an understanding capability through the information being fed and is both flexible and agile enough to capture the needs and manage the relationship with the consumer. Respondent 3 talks to the agility and flexibility through an example of customer input to a product prior to it being available for sale in store. Lepak, Smith, & Taylor, (2007) talked to this as the dynamic capabilities of a firm. They argued that there was importance in targeting the perceptions, desires and context in which consumers operated within.

What also came across as pertinent was the range of data that retailers believed a mobile application could provide. Respondent 10 referenced the ability to view browsing history, purchases, check-out times and location – data that would not ordinarily be available in store.

Customer relationship Management (CRM) is a construct that has also been discussed in the previous research question. From the interview and research questions, a link can be built between data analytics and CRM. The respondents were of the opinion that the data could be utilised to facilitate improvement on the current CRM methods that were being utilised by retailers.

The retailers cited the ability to collect feedback from consumers as well as the ability to communicate in real-time as a means of facilitating value co-creation between the retailer and consumer. The mobile application could thus be considered a tool with which retailers and consumers interact for the purpose of serving and satisfying the needs of the consumer. A few respondents also talked to the possibility of Artificial Intelligence (AI) playing a role in predicting consumer needs as well as interacting with consumers.

This links to the theory around value co-creation as proposed by Ranjan and Read, (2016), who identified co-production as a factor of value co-creation, where consumers take a more active role in value co-creation. This is done through interaction and engagement with the entity, in this case the retailer with the three categories of knowledge sharing, equity and interaction providing the base for co-production. The retailer also has the ability to define the nature and extent of the control process within value co-creation (Vargo & Lusch, 2004). The theory around platform envelopment, as explained by Eisenmann, Parker, & Van Alstyne, (2011) also alludes to the theme of interaction through the platform to create a heightened sense of awareness for the consumer by interacting with the application.

Another aspect that can be linked to managing the value creation process with the consumer is creating loyalty with the consumer to a particular retailer. Respondents have spoken to the potential of the data to enhance the loyalty program. While they were referencing online specifically, Shankar, Smith, & Rangaswamy, (2003) did conclude that online transacting inspired greater levels of loyalty

than offline transacting. This then expands to the concept of lock-in, as described by Amit & Zott, (2001). This also talks to the potential of mobile applications to manage loyalty programs through the data collected for the retailer and allows for the issuing and redemption of loyalty points, for example, to be facilitated through the mobile application platform. Tying in the loyalty and technology between consumer and retailer is the theory around platform envelopment, as described above, as the mobile application is being

To conclude, all the respondents believed in the idea of the utilisation of mobile applications to create value for retailers operating within a South African environment. The key for the retailers would be their ability to utilise the mobile application to gather data around consumer needs and choices and then have the ability to turn the data into offers to the consumers thus satisfying their needs. The ability for the consumer to interact with the retailer is also a key value creating function of the mobile application, as it allows for a more effective method of CRM.

6.4.2 Value can be created through mobile applications as transactional efficiencies are realised

Transactional efficiencies were key to value creation in the literature presented by Zhu & Kraemer, (2005). This construct was also prevalent within the works of Amit & Zott, (2001), Shankar & Balasubramanian, (2009) and Ranjan & Read, (2016). The ability of the entity to improve the efficiency levels of transactions resulted in value creation for the entity. The retail executives interviewed did believe that transactional efficiencies could be brought about through the utilisation of mobile applications for both the retailer as well as the consumer.

The respondents cited time being saved as the major benefit to the consumer, with efficiencies being the benefit to the retailer. Within time saved, there were several elements that retailers believed mobile applications could facilitate.

Primary amongst them was the ability of the application to minimise the queuing time for the consumer who either needed to complete a purchase in store or utilise the support functions that the retailers provided to consumers (such as account queries, returns etc.) The mobile application had the ability to circumvent normal queues by bypassing the normal cashier system in store and allowing for a mobile payment function that would allow for self-check-out. This in turn would allow the retailers to save on costs pertaining to the hiring additional staff during peak trading periods such as month-end and over holidays. Gawer and Cusumano, (2014), in their work around internal platform adoption, talk to the cost savings and efficiency benefits that exist around the adoption of a platform within an entity.

The other way that retailers could save time for the consumer and thus create transactional efficiencies was to utilise the application as an interactive platform and allow for the sale, essentially m-commerce as well as the support function to be facilitated through the mobile application. This process also allows for efficiencies through cost saving for the retailer, as it allows for them to minimise the number of staff needed for both sales and support services.

Time-saving was elaborated on by Respondent 10, who believed that the ability of the application to provide data around the items that the retailer physically stocked in their stores would result in time saving for the consumer, who ordinarily would have gone to the store only to discover that that particular store did not have the size or colour item that the consumer wanted.

Respondent 10 then expanded this to the retailer, saying: *“I think there is positive efficiencies in terms of stock management, stock flow and also being able to localize within different areas”*. This quote talks to the potential efficiencies that retailers had to gain from the use of a mobile applications, through either utilising the mobile application or collecting data that allows the retailer to increase the potential of the business or by efficiencies through cost savings.

Both Kulp, Lee, and Ofek, (2004) and Roberts and Greenwood, (1997) talk to the use of information gathering to enhance efficiencies within the organisation from a supply chain perspective. Using the mobile application to realise potential of the business can be brought about through the use of the data that informs the consumer’s choices and refutes some of the assumptions that retailers might have had around the choices of consumers. It also allows for retailers to identify items of high demand and reallocate resources to satisfy the demand.

Similarly, mobile applications can be used as a tool to enhance efficiencies through cost-savings. Respondents related that the understanding of how and where stock should be allocated can be gleaned from the data transmitted through the mobile application based on consumer choices by geographical region. This allows for wastage and over-stocking to be minimised, thus saving the retailer from having to spend on unwanted markdowns of the goods.

This relates to the concept of efficiency within the business, both for consumer and retailer. Zhu and Kraemer, (2005) talk to the concepts of efficiencies within the business as the minimising of search costs, focusing the selection range and ensuring speed and scale economies are achieved. As respondents have pointed out, for value creation or co-creation to occur, retailers need to ensure that there is a benefit for the target user. Priem, (2007) argues that the process of value creation involves multiple processes that found or grow a consumer’s valuation on the benefits of consumption.

6.4.3 Information sharing can result in value co-creation as it allows for a more accurate understanding of consumers’ needs and allow retailers to be more customer centric.

Bowman & Ambrosini, (2000) state that one of the dimensions of value creation is knowledge creation. In retailers gaining information, retailers are creating a database of knowledge that the retailers can then utilise to create value by catering to the needs of their consumers.

As all but one respondent believed that the collection of information related to the consumer could be utilised as a tool for value creation, the sentiment from the retailers interviewed echoes that of the theory presented. There were multiple nodes of information that the retailers deemed valuable, described as customer preferences, location, gender, lifestyle, age and needs.

Retailers believed that the primary ability to capture value resided within the ability of mobile applications to collect data. The theme of mobile applications being used as a tool for data collection has emerged within the constructs of research question two and continued into research question three. The significance of the information shared or captured was described by Amit & Zott, (2001) as part of the efficiencies that a technology brought about. Information is critical within their model, a view that was reinforced by respondents. The reason for this was that the information allowed for the retailers to then develop complementarities between products and the technology for the consumer. This would then allow for lock in, which builds trust and increases the switching costs for consumers. The element of novelty is also dependent on the information captured as it allowed for retailers to get a handle on consumer’s preferences in order to provide new, relevant content to them.

With the significance that the respondents have placed on capturing and understanding the wealth of information transmitted about consumer’s behaviour, it then becomes pertinent for the retailers to

use this knowledge engage in the process of value co-creation with the consumer. This can be achieved through the engagement with the consumer and providing the consumer with the good or service that will satisfy their needs or wants in a location that suits them and at a time that suits them, as described by Respondent 12.

Maglio and Spohrer, (2008) believed that in an environment where consumers are connected globally and continuously, the ability to service the consumer, an entity was required to gain input from the consumer in order to offer a more knowledge-intensive, customised service. Therein could be the ability to leverage off network effects that the mobile application could provide – should consumers find value through the application either through information sharing or transactional efficiencies, the recommendation rate of the application could rise, resulting in more consumers adopting the application. As more consumers adopt, network effects come into play. This talks to platform product theory which works off the premise that network effects are leveraged through interactions between firms and individuals on a common platform (Eisenmann, Parker, & Van Alstyne, 2011).

This ties together both the concepts of transactional efficiencies and market share expansion, in that information gathered can then be utilised to drive the others. Examples that respondents have given is the minimising of que times and extending reach into new geographical markets.

However, while retailers have discussed the value of the data collected there was no discussion, bar one, from the respondents around the process and costs associated with the analysis and interpretation of the data. Respondent 12 alluded to the capabilities that would be required within his answer to question five, where he talked to the support structures that would need to be put into place in order for the data to be interpreted effectively. This remains an important element of value creation, as the costs associated with data deconstruction would need to be evaluated before retailers could ascertain the true value extracted. Should the costs of amalgamating and interpreting the data be prohibitively high relative to the value created, then value destruction could possibly arise. Transactional costs would also therefore increase for the retailer as the cost of facilitating a transaction based on the data collected would rise in relation to the data analysis costs. The empirical data obtained then suggests this as an area for future research.

Respondent 9 also alluded to another potential issue that might exist – the excess data might actually lead to data saturation, He believed that by the consumer relating what they value need could be co-created by the retailer then satisfying the need of the consumer.

6.5 Conclusion

The results collated in Chapter 5 reinforced the theory that was presented within Chapter 2.

An Omni-channel approach should be central to a retailers strategy as stated by Brynjolfsson, Hu, and Rahman, (2013) and Zeng, Luo, Dou, and Zhang, (2016) and reinforced by the opinions presented by retailers. Most respondents believed that investing in omni-channel capabilities was not to cater to the wider market, but create capacity for what the future may bring. From within the omni-channel approach, retailers believed mobile to be the most relevant within a South African context, provided the challenges

The use of mobile within an omni-channel strategy allowed retailers to reconfigure their business through the data collected and analysed from a mobile application. This speaks to the information sharing element of value creation as explained by Zhu and Kraemer, (2005). However, what was of significance was the emphasis that the retailers put on the data analysis – a theme that was carried

over to research question 3. With regards to adoption by the consumer perceived usefulness and ease of use, two constructs of TAM were reiterated by the retailers. However, in addition to this, was the use of value-adds or incentives to encourage adoption. This was approach was in no small part believed to be relevant in order to overcome the apprehension by consumers due to the high costs of data and lack of trust in applications due to those high costs.

Finally, the pillars of value creation through the use of technology as described by Zhu and Kraemer, (2005) and supported by Amit and Zott, (2001) were tested. While the elements of transactional efficiencies and information sharing and integration held true, retailers were split on the ability of mobile applications to expand markets or market share. While a few of the retailer believed that the theory held true as it gave retailers access to consumers who would capitalise on the potential transactional efficiencies, other retailers believed it would actually result in market contraction due to consumers not being encouraged to cross-shop. Furthermore, it was affirmed by the respondents that value could be co-created with consumers through the use of mobile applications by using the platform to gather and analyse data around consumer preferences and assimilate the data into offerings back to the consumer.

Chapter 7: Conclusion and Recommendations

7.1 Introduction

This chapter reviews the findings constructed in Chapter 6 against the research objectives set out in Chapter 1. This chapter serves to provide an updated view on value creation through the use of mobile applications within the retail environment in South Africa. In addition, suggestions to both business and academia are presented – these take into consideration the limitations that existed within the research.

Finally, recommendations for future research are also presented.

7.2 Principal Findings

The interview process which agreed with the literature that that an omni-channel strategy was essential for traditional brick-and-mortar retailers who operate within a South African context. Only the timing was in dispute. If this has not found currency, then it will most certainly gain traction within the foreseeable future.

Mobile applications, a platform of the mobile component of the omni-channel strategy, was a key constituent in the value creation process for these retailers. While consumers may not have taken excitedly to it as a means of transacting, it certainly can be used as a value-creating component of an omni-channel strategy within the retail environment in the future.

As the research questions posed questions around adoption and configuration as well, the interviews uncovered insights from retailers around the obstacles and provided ways of overcoming these obstacles.

A troubling concern to the retailers was that a barrier to consumers adopting the mobile application is the high costs of data and the belief that usage of applications will rapidly eat into the data. The problem around the high costs of data became evident in the #datamustfall campaign in South Africa early in 2017. Overcoming this problem remains a major obstacle for retailers who would like to see widespread adoption and usage of this technology. The use of a value proposition to entice the consumer has been cited by respondents as the primary way of overcoming this barrier. There were several options presented, such as offering discounts to the consumer through the application. Another option might be to offer in store Wi-Fi access for consumers to download the application and utilise it in store.

In understanding how the application should function, the ability of consumers to easily access and use the application was the primary factor for retailers. Within that, the ability to navigate the application as well as search the application for a specific function or item came out as a predominant design requirement for retailers launching mobile applications. Ease of use and simplicity should be top of mind when trying to understand the ergonomics of the application design.

However, the primary focus of the research was to understand how mobile applications can be used as a value creating mechanism.

Figure 10 below depicts the principal findings and value creation model to the research questions, charted graphically in a model which posits that by implementing the chronological stages of the

specific components, retailers should be able to utilise mobile applications to create and co-create value with consumers.

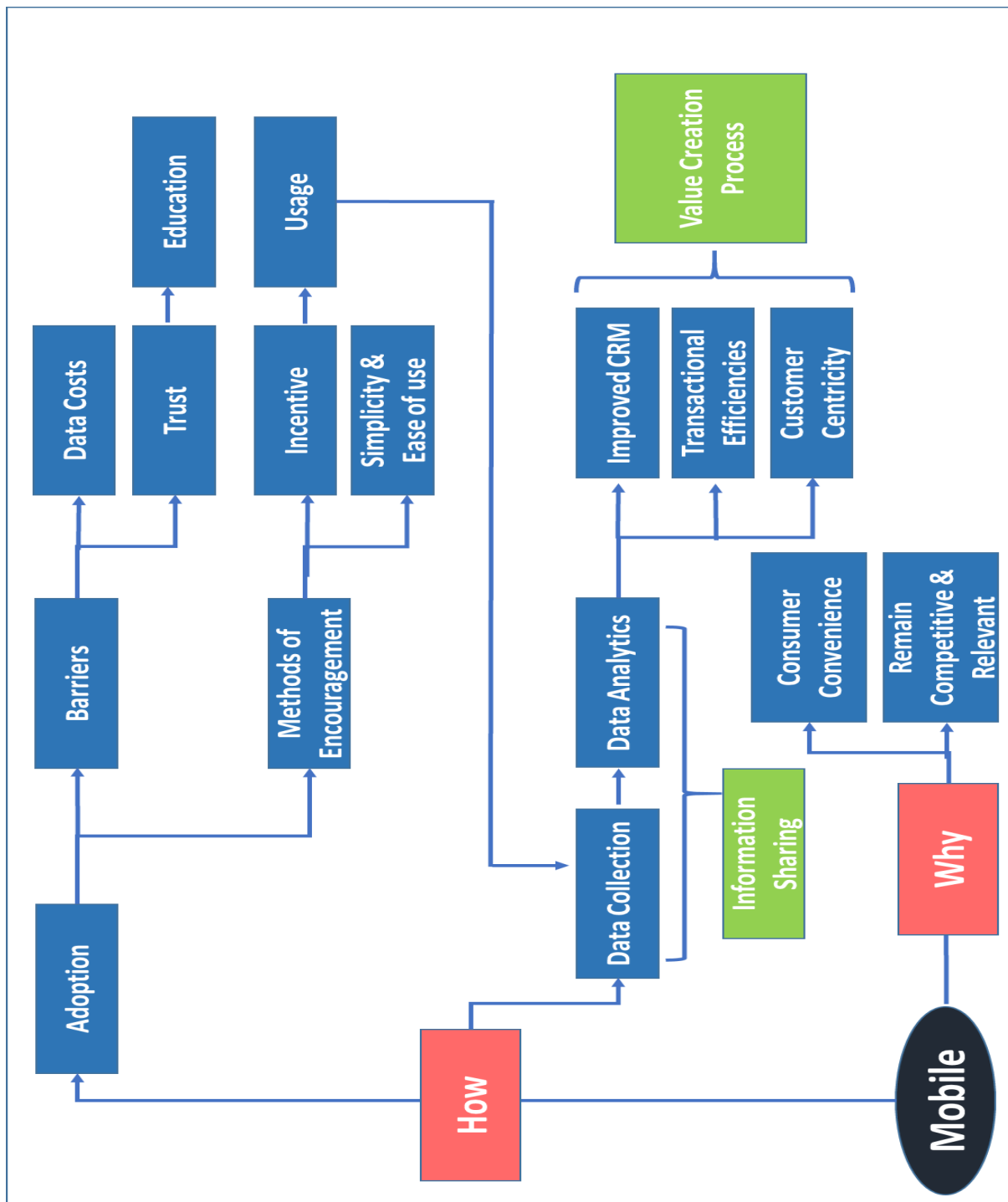


Figure 11 – Value creation model

The utilisation of mobile applications to allow for consumer data analytics was the overwhelmingly dominant theme that emerged from the interviews and tied into the literature as well.

From this primary theme, several secondary themes then emerged. Through the data collected, which would then be analysed, retailers will be able to understand the consumer more accurately. By understanding the consumer more accurately, retailers are then able to provide better goods and services to the right consumer, at the right place, at the right time. The value of the information collected from the application allows for transactional efficiencies to occur, for both retailers and consumers as well as an improved customer relationship management system to be implemented. This is all examined in more detail below:

7.2.1 The adeptness of mobile applications to collect data

The predominant view from the retail executives interviewed was that mobile applications should facilitate the flow of information between consumer and retailer. Mobile applications allowed retailers to garner information on consumers, with the applications having the facility to transmit the locations of consumers, their transactional history, items of interest and search history as well as social interactions. This allowed retailers insights into shopping patterns, seasonality and consumer spending patterns.

The ability of the mobile application to collect data for the retailer acts as a catalyst then for the process of value creation and value co-creation. The data allows for two elements of value creation to be realised through mobile applications:

- The utilisation of mobile application to create and facilitate transactional efficiencies
- The utilisation of mobile applications to forge customer centricity and relationship management

7.2.2 Transactional efficiencies being enabled by mobile applications

Through the data collected, mobile applications can enable and enhance transactional efficiencies for both the retailer and consumer, thus creating value for the retailer as well as co-creating value for both retailer and consumer. Retailers, by analysing the collected data would be able to understand consumer needs by geographical, and even store location. This should then propel retailers to act on the data to satisfy the needs of the consumer.

The data collected would assist retailers to more accurately predict the consumers' spending patterns purchase trends through analysis of their purchase trends. These trends, analysed at a consumer level would then be aggregated and presented back to the consumer as a viable offering.

Search costs for the consumer would be reduced and the risk of transactional uncertainty eliminated. Retailers can manage their stocks more effectively with the concomitant risk of tying capital into excess stock with its attendant cash flow implications. Notifications to consumers about a product could be prompt and immediate.

The time spent by consumers waiting in queues within a South African retail environment can be frustrating. South Africa was also highlighted as a pain point for consumers by retailers. Mobile applications could be used as a tool to minimise the queue time for consumers. This could be done was either through the utilisation of the mobile application to facilitate the payment through NFC (Near Field Communications) somewhat akin to that used by Amazon within their grocery store. The application could also be used to mobilise staff at the till points. The effect would be to release unwarranted congestion in stores and create a more pleasurable shopping experience. The reduction on consumer waiting time leads to a more efficient transaction for them. The reduction in transactional costs for the retailers comes about through a more efficient use of staff in store, potentially impacting the cash flow positively.

Through the collection and interpretation of the data collected, retailers will be able to reconfigure their businesses to become more adaptable and fluid, enabling them to not only meet consumer demands more accurately, but predict what those demands might be, when they might occur and where to channel resources to satisfy those consumer needs.

7.2.3 Customer centricity and relationship management

Through the data collected, retailers will be able to position themselves better to ensure that the consumer is more central to their decisions and processes. The data analysed enhance the retailers' understanding of consumer behaviour and their needs. This would alert retailers to be sensitive to the type of products the consumers have an affinity for. This would also permit the retailers to predict the requirements of consumers more accurately. A more personalised offering to the consumer is critical in the consumer feeling valued by the retailer and reducing the risk of defection to a competitor.

The application will also allow for retailers to offer a more efficient service by tying support services into the application. Thus, facilities such as financial services, loyalty and customer services can all be incorporated into the mobile application. This could save consumers time from either utilising a call-centre or going into the store and then having to queue for a consultant.

The use of the application also enables a two-way flow of information. Consumers can, through the application, raise any issues or complaints in real time and retailers can respond timeously. This will reinforce the consumer relationship. As one respondent pointed out, social media enabled consumers to air grievances publically, legitimate or otherwise, causing damage to the reputation of the retailer. The mobile application represents a more proficient way of managing consumer interaction and relationship management. All the above factors assist the retailer in achieving lock in with the consumer. This means that loyalty increases and positive network externalities, both direct and indirect are achieved. With the consumer becoming increasingly reliant on the application for information, service and communication it also increases the switching costs for the consumer. Switching costs are increased as the consumer

7.3 Recommendations

7.3.1 Recommendations to retailers

Business leaders within the retail environment in South Africa need to be cognisant of the competitive landscape in which they operate. The retail environment in South Africa, like that of the rest of the world, is in the grips of inexorable change. This means that retailers must not only confront change, but confront change that is continuously evolving, challenging the strategy and status quo of how retailers operate within the country. Business reconfiguration is critical in order for retailers to be agile and adaptable. The entry of international retail brands into the South African market has given a new edge to the dynamism in the retail industry. Brands such as H&M and Zara come with an existing omni-channel strategy and use this strategy to collate information on the target markets and the behavioural patterns of consumers.

Thus, if they want to remain relevant in an environment that is coming under increasing pressure from macro-economic factors, retailers need to adjust and adapt. Retailers are under pressure to find new growth avenues and instil a competitive advantage.

The ability of mobile applications to collect consumer data and facilitate transactional efficiencies could give retailers the push needed to get the competitive edge. However, high data costs and getting consumers to trust in the technology remain a barrier to widespread adoption of mobile applications by consumers. This can be circumvented, as suggested, through in-store Wi-Fi. However, there will be a cost associated with the provision of the Wi-Fi as well. This needs to be considered along with the potentially high costs of setting up and maintaining the capabilities to interpret the data collected and could potentially be a barrier to retailers adopting the mobile application. Retailers would need to understand these costs comprehensively to understand the benefit that could be extracted from the data when compared to the costs.

Mobile is the primary means to access the internet and with retailers looking at an omni-channel strategy to retain consumers or gain new consumers, mobile remains the most viable option for retailers. Mobile not only allows for a high degree of penetration in the market, but also is able to gather the most amount of data. This data can then be used by the retailer to be able to generate transactional efficiencies, facilitate lock-in and potentially gain market share.

7.3.2 Recommendations to Academia

Understanding how adoption of technology by consumers in South Africa is an area of focus, especially with the high data costs and low levels of trust in the technology prevalent.

While the elements of value creation mostly held true for mobile applications, the data was adapted from broader technology and e-commerce models. A study specifically devoted to mobile applications and their broader value creating properties would be significant, especially as the data collected in this study is empirical in nature. A more quantitative approach could be used when applications are more widespread and accepted by larger portion of the population.

7.4 Areas of Future Research

In the analysis of the empirical data, it became clear that there were certain aspects [in the field of mobile applications] that calls for further research.

Understanding that the role that mobile applications could play in the ability to persuade consumers to cross-shop came resulted in a divisive view from the respondents. This can be done when the adoption of mobile applications that serve retailers is widespread and sufficient data can be extracted from the usage of these applications.

Gleaned from the empirical data was the theme of costs versus the benefits around the collection and interpretation of data. While only one of the respondents raised this, it is an area of significance as two of the pillars of value creation, transactional efficiencies and information sharing relate to the gathering and interpretation of data from consumers to build efficiencies. However, should the investment in the infrastructure and support around the data gathering and interpretation prove costly, retailers might find diminishing returns on the utilisation of the data. From an academic point of view this ties into the disciplines of transactional cost economics as well as organisational design and could prove useful in understanding how retail entities are set up and structured in the future. It is imperative for retailers to appreciate how their businesses need to be configured in order to create value and generate success.

While mobile remains the most relevant form of internet access for South Africans and mobile technology has not been utilised by retailers to the full spectrum of its capabilities, the advent of fifth generation technology might disrupt the retail industry even further through the rise of Artificial Intelligence (AI) and integrated and interactive smart technologies

Fifth Generation (5G) technologies is an enabler of the Internet of Things (IoT). IoT can be described as an ecosystem that connects smart devices and allow users to have access to immersive communication means (GSMA, 2017).

Porter & Heppelmann, (2015) have commented on connected products transforming the traditional value chain, thereby redefining industries and pushing companies into rethinking the way that they operate. They further elaborate that firms will have to reconsider their business strategies and this will have profound implications on the organisational structures as cross-collaboration and new functions within business will become the new norm.

Connected devices will form part of the IoT and retailers would need to harness the potential of the technologies available in order to compete and attract consumers. Companies will essentially shift focus off industry specific applications and platforms to applications that connect multiple industries, shifting design and capabilities boundaries.

Due to the complexity of the network that surrounds the IoT, there exists opportunity in expanding and developing business models that focus on the value that the IoT could bring about and more specifically, how entities will integrate and operate within this complex ecosystem. This suggests that the focus on business model development as a source of value creation for the entity will have to shift from defining the value model for a single entity to designing a business model that creates value across multiple entities.

Understanding how connected devices and the IoT will form part of the strategy of retailers in the future is an area of focus that needs to be expanded upon. Appreciating how the IoT will integrate into the retail environment and the role that cross-industry functionality has to play within retail will assist in defining how value can be created for retailers in the future. Understanding, as well, the cost impact of the technology as well as the ability of the technology to be adopted on a large scale and thus momentum is also another area that can be focused upon.

7.5 Overall Conclusion

Prior to the development of technologies that allowed consumers to interact with other people and entities globally from the location of their choice, at a time of their choice, on a pocket-sized device, retailers had to depend on physical interactions with their consumers in order to showcase their wares and complete a transaction.

However, faced with a changing environment where technology plays a role in shaping and determining consumer needs, traditional brick-and-mortar retailers need to evolve as well in order to stay relevant.

As the primary objective of this research paper was to understand how mobile applications can create value for traditional brick-and-mortar retailers, this objective was met

Through the research process, mobile has been confirmed by the retailers interviewed as a pervasive, highly accessible technology. The ability of mobile applications to collect data around consumer behaviour allows for retailers to then adapt their way of working based on the data collected. This can be utilised to create transactional efficiencies for both retailer and consumers. It still remains to be seen if mobile applications can drive market expansion for retailers, however. The research also confirmed that lock-in with a consumer can be achieved through the mobile application.

The findings of this research also provided an ideas from retailers around how they believed adoption of the application can be driven – through adding a value add or incentive for the consumer. The functionality to optimise consumer engagement was discussed as well, with simplicity and ease of use being the primary components of the functionality design. Finally, the understanding that mobile applications can serve as a value creating tool for brick-and-mortar retailers was confirmed, as well as understanding how this can be achieved. This was through information sharing to create customer centricity and get the retailer to be more customer centric the creation of transactional efficiencies enabled by the information shared.

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Appendices

Annexure A – Consent Form

Mobile Applications: Understanding how utilisation as part of an omni-channel strategy can lead to value creation for traditional brick-and-mortar retailers in South Africa.

Dear Interviewee,

I am a Masters of Business Administration student at the University of Pretoria's Gordon Institute of Business Science. I am conducting research around mobile applications within the retail environment – understanding the value that can be created for retailers through the adoption of mobile applications. To that end, I request your participation in an anonymous interview that should take no longer than 40 minutes of your time.

All information will be kept confidential and no names will be reflected in the final submission. Your participation in this study is voluntary and you can withdraw at any time without penalty. By signing this consent form, you indicate that you voluntarily participate in this research project.

If you have any concerns, please contact either my supervisor or myself. Our details are provided below.

X

INTERVIEWEE SIGNATURE

Researcher:

Suhail Seedat

+27 82 608 5555

16393041@mygibs.co.zas

Research Supervisor:

Louise Whittaker

WhittakerL@gibs.co.za

Annexure B – Complete list of constructs from interview questions

Interview question 1a

Is an omni-channel strategy important?

Rank	Constructs	Frequency
1	Yes	12
2	No	0

Interview question 1b

Motivation for retailers adopting an omni-channel strategy

Rank	Constructs	Frequency
1	Customers want Convenience	12
2	Combination of Traditional and Omni-Channel Strategy	9
3	Important to remain competitive and relevant	8
4	Imminent for Retailers serving Middle to High Income Market (LSM 7-10)	7
4	Applicable in future for Retailers serving the Low income Market (LSM 1-6)	7
4	Increased Access to Mobile Devices/ Adoption Rate of Technology	7
4	Consumers are Evolving	7
5	Omni-Channel incites Customer Centricity	5
5	Invest in Internal Capability for the future	5
5	Global Trends moving towards Omni- Channel Strategy	5
6	Logistical Challenges	4
6	Traditional Strategy still relevant in the short-term	4
7	Retail Type Specific	2

Interview question 2

The role of mobile within retail

Rank	Constructs	Frequency
1	Dependant on Smartphone adoption (Technology Adoption Rate)	15
2	Cost of Mobile Data	9
3	Trust Factor	8
4	Convenience and Simplicity of Mobile Apps	7
5	Enhances Customer Relationship Management	5
6	Agile Innovation	5
7	Augmented Reality	4
7	Combination of Mobile and Conventional	4
7	Link Mobile Apps to Social Media	4
7	Consumers are Evolving	4
8	Logistics	3
8	Integration into a Single Platform	3
8	Potential for Growth in Sales	3

Interview question 3

The role that mobile can play in business reconfiguration

Rank	Constructs	Frequency
1	Consumer Data Analytics	25
2	Seamless Integration of all brands into one Mobile App	9
3	Digital Platform to Communicate with Customers	8
4	Brick and Mortar will still be relevant for Cross Shopping	7
4	Strategic Partnerships/Acquisitions	7
5	Opportunity to Customise Mobile App	6
6	Mobile App facilitates Cross Shopping	5
6	Mobile Apps to increase efficiency in the Business	5
6	Provides Customers with Options and Comparisons	5
7	Mobile App cannot facilitate Cross Shopping	4
8	Consumers should be educated about Digital Shopping	3
8	Trusted Platform	3
8	Free In-store Connectivity	3
9	Not Applicable for Chain Stores	2
9	Triggers Augmented Reality	2
10	Consistency across all Marketing Platforms	1

Interview question 4

Elements that encourage mobile application adoption amongst consumers

Rank	Constructs	Frequency
1	Customer Value Proposition (Such as Incentivising, exchange online, Vouchers, Rewards)	26
2	Mitigate Connectivity and Data Challenges	13
3	Digital Media Strategy	9
4	Education and Awareness	7
4	Integrate a CRM system in the Mobile App	7
5	Align with Global Trends	3
5	Content should be aligned to Brand	3

Interview question 5

Elements of a mobile application that drive success

Rank	Constructs	Frequency
1	User-friendly (Ease, Simplicity)	27
2	Seamless Integration	11
2	Search Functionality	11
3	Intuitive	9
4	Secure	7
4	Appealing Design	7
5	Speed	6
6	Based on Customer's Perspective	5
6	Consistently Updated and Relevant	5
6	Communication	5
7	Innovative Technologies (Such as 3D mapping, augmented	3
7	Strategic Partnership	3
8	Align with Brand Promise	2
8	Click and Collect Functionality	2
9	Agile	1

Interview question 6a

Do transactional efficiencies, market share expansion and information sharing lead to value creation?

Rank	Constructs	Frequency
1	Yes	11
2	No	1

Interview question 6b

How do transactional efficiencies, market share expansion and information sharing lead to value creation?

Rank	Constructs	Frequency
1	Information Sharing the most important	8
2	Customer Centricity	5
3	Digital Strategy integrated into Organisational Strategy	4
4	Exclude Market Expansion	3
5	Engagement as the fourth Concept	2

Interview question 7

Ways in which value can be co-created through mobile applications

Rank	Constructs	Frequency
1	Customer Data Analytics	13
2	Customer Relationship Management	11
3	Customer Centric Organisational Structure	5
4	Customer Convenience	4
5	Customisation	3
6	Strategic Partnerships	2
6	Integrated Digital Platforms	2

Interview question 8

Understanding how mobile applications drive transactional efficiencies

Rank	Constructs	Frequency
1	Yes -Time-Saver	16
2	Yes - Reduces Fixed, Variable and Operational Costs	7
3	Yes - Convenience for the Consumer	6
3	Yes - Removes Boundaries	6
4	Yes - Customer Relationship Management	4
4	Yes - Customisation	4
4	Yes - Opportunity to increase Sales	4
4	Yes - Re-Configure Existing Systems	4
5	Yes - Customer Loyalty	1
5	No - Introduces Additional Costs	1
5	No - Creates Logistical Challenges	1
5	No- Reduces Sales	1
5	Yes - Paperless	1

Interview question 9a

Data that can be gleaned from mobile applications

Rank	Constructs	Frequency
1	Behavioural Patterns (Shopping Activity, Preferences, Routine)	23
2	Contact Details	4
3	Gender	3
3	Migration/Travel Information	3
3	Lifestyle	3
4	Age	2
5	Physical Address	1

Interview question 9b

Usage of data from mobile applications

Rank	Constructs	Frequency
1	Accurate Understanding of Customers	16
2	Customisation and/or Customer Centricity	15
3	Customer Relationship Management (Incl. Customer Feedback, Customer Co-Creation, Customer Experience)	9
4	Proactive Product and Service Offering	7
5	Reduces Wastage and Increases Efficiencies	5
6	Monitors Customer Behaviour	3
7	Important for Market Penetration	2
7	Increased Market Share	2
7	Convenience	2
7	Data Collected is Meaningless	2
7	Growth in Sales is linked to the Economy	2
8	Selling the Data	1

Interview question 9c – consolidation between 9a and 9b

Question 9c (Consolidated)

Rank	Constructs	Frequency
1	Behavioural Patterns (Shopping Activity, Preferences, Routine)	23
2	Customisation and/or Customer Centricity	15
3	Accurate Understanding of Customers	10
4	Customer Relationship Management (Incl. Customer Feedback, Customer Co-Creation, Customer Experience)	8
4	Proactive Product and Service Offering	8
5	Reduces Wastage and Increases Efficiencies	5
6	Gender	3
6	Migration/Travel Information	3
6	Contact Details	3
6	Lifestyle	3
6	Monitors Customer Behaviour	3
7	Important for Market Penetration	2
7	Age	2
7	Increased Market Share	2
7	Convenience	2
7	Data Collected is Meaningless	2
7	Growth in Sales is linked to the Economy	2
8	Selling the Data	1
8	Physical Address	1

Annexure C – Ethical Clearance

**Gordon
Institute
of Business
Science**
University
of Pretoria

20 July 2017

Suhail Seedat

Dear Suhail,

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

Annexure D – Copyright declaration form

COPYRIGHT DECLARATION FORM

Student details			
Surname:	Seedat	Initials:	S
Student number:	16393041		
Email:	16393041@gibs.co.za		
Cell :	082 608 5555	Landline:	
Course details			
Degree:	MBA	Year completed:	2017
Department:	GIBS		
Supervisor:	Louise Whittaker		
Supervisor email:	WhittakerL@gibs.co.za		
Confidentiality / Embargo			
Do you need to have your report embargoed? If so, attach a motivation letter. Without a letter this will not be granted.			
Yes		No	X
If yes, please indicate period requested			
Two years		**Permanent	
**If permanent, please attach a copy of the letter of permission from the Vice-Principal: Research and Postgraduate Studies. Without a letter this will not be granted.			
Access			
A copy of your research report will be uploaded to UPSpace			
Can the Information Centre add your email address to the UPSpace web site?			
Yes	X	No	
If no, please motivate (ignore if report is to be embargoed)			
Copyright declaration			

I hereby certify that, where appropriate, I have obtained and attached hereto a written permission statement from the owner(s) of each third-party copyrighted matter to be included in my research report ("the work"), allowing distribution as specified below. I certify that the version of the work I submitted is the same as that, which was approved by my examiners and that all the changes to the document, as requested by the examiners, have been included.

I understand that all rights with regard to intellectual property in the work vest in the University who has the right to reproduce, distribute and/or publish the work in any manner it may deem fit.

I agree that, a hardcopy of the abovementioned work be placed in the Gordon Institute of Business Science Information Centre and worldwide electronic access be given to the softcopy on UPspace.

Signature:

Date: 06/11/2017

Annexure E – Certification of data analysis

CERTIFICATION OF DATA ANALYSIS

(Additional assistance retained or not - to be completed by students who used Quantitative or Mixed methodology)

Please note that failure to comply and report on this honestly will result in disciplinary action

I hereby certify that (please indicate which statement applies):

- **I did not receive** any additional statistical assistance (i.e. did not retain the services of a statistician) to run the data analysis for my research report:
- **I retained the services of a statistician** in running the data analysis for my research report:

If a statistician was retained – **please supply contact name and details of said statistician:**

NAME:

EMAIL ADDRESS:

CONTACT NUMBER:

I hereby declare that all statistical interpretations/ analysis and write-up of the results for my study was completed by myself without outside assistance

Name of student:
.....

Signature:
.....

Student number:
.....

Student email address:
.....

