Mobile phone applications: Understanding if motivations to engage are related to the customer perceived value, customer satisfaction and customer engagement

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Abstract

The growth of the smartphone market and the development of mobile applications for these devices has given created what literature has labelled an Application (App) economy or Application market.

The sales income derived from selling mobile applications are driving the income in the economy with projected growth worldwide of USD 75 billion by 2017. By 2020, an estimated 5.8 billion smartphones globally are expected to be in use; this is an increase of 2.6 billion from the 2015 figures.

Despite the robust growth and increased usage, many mobile applications are still not utilised by customers. There is limited studies and understanding of the elements that influence the customer decision or motivate the customer to buy them or to use them to a greater extent.

The objective of this study is to discover the motivation aspects that drive the use of these mobile applications. The study looked at three motivators to ascertain which of these impacted the customer engagement. The study further aimed to analyse the relationship between these motivators to the customer satisfaction as well as the customer perceived value.

The study tested the hypotheses method using a quantitative study to undertake a directional test. An internet -based survey was circulated for the data collection process. The survey was finalised with 134 respondents across gender, age and geographical location.

The analysis supported the nine hypothesis factors. The study outcomes confirmed the presence of a relationship between the utilitarian, hedonic and social motivations to engage, with customer satisfaction; the existence of a relationship between the three engagement motivations with customer perceived value as well as a relationship between customer satisfaction and customer perceived value.

The recommendation was, therefore, to encourage developers of the mobile applications into consideration what drives the customer to engage and for companies to incorporate mobile applications to a greater extent in their customer growth strategies. The recommendation was, by understanding what drives their customer to

engage with mobile applications, companies would be better equipped in designing strategies that are more focused based on insight.

Keywords

Declaration

I declare that this research project is my own work. Is it 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 any other University. I further declare that I have obtained the necessary authorisation and consent to perform this research.

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Table of Contents

List of Tables

List of Figures

List of Appendices

1. Chapter 1 - Introduction to the research problem

1.1 Introduction

The world of business is becoming more dynamic and collaborative resulting in the influence of customer engagement on the development of a customer experience and customer worth. Marketing and strategy practitioners and academics are increasingly focusing their attentions on this concept according to Brodie, Hollebeek, Juric and Ilic, (2011).

The ability to engage and keep customers engaged is becoming a necessity with increasing competition across various industries. To increase value for customers and companies alike, appropriately harnessing this customer engagement in a virtual customer environment, such as mobile technology is critical.

Customer engagement is considered a strategic driver for companies to outperform their traditional competitors and possibly their non-traditional competitors. A competitive advantage gained by companies who perform better than their competitors is an important indicator of future business performance and a primary driver of growth for sales, a lead driver for profitability, (Brodie, Ilic, Juric & Hollebeek, 2013).

Companies realise the importance of building personal relationships with customers that embrace these connections. These links between the customer or prospective customers and the company, whether they are transactional or non-transactional, can be defined as customer engagement, (Kumar et al. 2010).

Recently global connectivity, as well as new methods used for communicating and exchanging information via mobile media platforms, are offering companies and customers new and various methods to engage with each other, (Claffey & Mairead, 2014).

The mobile platform is increasingly becoming a critical component of many companies' sales and marketing strategies, to capture this engagement. Mobile devices and mobile applications provide companies with an additional route to the customer as well as

offering opportunities to combine various functionality accessible to the customer. These functionalities are accessible to the customer regardless of time or location according to Ström, Vendel and Bredican (2014). Despite this increasing interest, limited studies are known on what the reasons are for people to decide to buy or download applications, (Garg & Telang, 2013).

In combining what drives the customer to engage with the mobile applications, the resultant perceived value and satisfaction, is there a relationship that can be further understood between these themes as they are linked to customer behaviours that influence how they engage with mobile applications.

The objective of this study is to establish if the existence of a relationship between what motivates the customer to engage with mobile applications, the perceived value as well as the resultant customer satisfaction they receive from engaging with the mobile applications.
Hence, this study seeks to explore responses to the following questions:

- Do motivations that drive customers to engage with mobile applications (utilitarian; hedonic and social) have a relationship with customer satisfaction?
- Do motivations that drive customers to engage with mobile applications (utilitarian; hedonic and social) have a relationship with and perceived value?

Although there seems to be limited agreement in the literature regarding what determines the customer adoption and engagement in mobile applications, Wang, Malthouse and Krishnamurthi (2015), state that engaging with mobile applications accounts for more than 50% of the time people spend on digital platforms. This finding suggests that applications have successfully infiltrated into the daily activities of smartphone users.

Thus, the objective of this study is to improve the current understanding into some of the motivations that expose the features driving customer engagement in mobile applications.

Present writings suggest that mobile smartphones or tablets can be used as effective marketing tools if they possess the features listed below according to Larivière et al. 2013; Shankar and Balasubramanian 2009):

- Compactness or transportability

- Capability of continuous interaction with the user
- Ability to connect to a networked
- Provides access to instant information
- Text and graphic content and
- Interactions of functionality, for example, navigation and email

These features permit users to interact with the application or company with ease on a foundation that is timeless and that does not depend on location according to Shankar et al., (2010). Due to the portability of smartphones, the access to mobile interactions affords supplementary prospects for companies to create interactions with their customers and connect with them on an individual and ultimately, repeated basis across time and space.

This discovery should prompt companies and application developers to take this into consideration when developing the applications. To fully leverage this increasing focused attention. Wang, Malthouse, and Krishnamurthi (2015) in their research has shown that interaction with company mobile applications, increases the customer's supposed product ownership and therefore enhance their purchase intents. Increasing this customer engagement and user's intention to purchase can possibly positively influence the growth and success of a company, (Brodie et al., 2011)

There is increasing importance placed on understanding the customer and the customer experience in the world of marketing. This leads to a growing need to understand how the behaviours and attitudes of the customers are continuously changing resulting from the technological advancements according to Hollebeek, Conduit and Brodie (2016).

In co-operative, dynamic commercial environments, the customer engagement notion becomes a critical strategic objective for generating enhanced business performance, including sales growth, (Brodie et al., 2011).

According to Sandra Vandermerwe (2014) in her work on customer centricity exploring the concept of consumers voluntarily spending more time, over longer periods of time, engaging with company brands, this longer prolonged engagement with the company brand, may create customer advocacy and positive brand sentiment. The result of this is increased company revenue.

Companies seeking to remain sustainable and profitable in the long run will need to create long term relationships that yield long term profits for the companies, while creating value for the consumers. With evolving technology, more companies are looking to various technology platforms to engage with their consumers beyond the single product transactional type relationship.

The concept of customer engagement is thus gaining relevance and becoming appropriate over the traditional relational concepts, including involvement and participation, (Brodie et al. 2011).

1.2 Problem definition and purpose

The Apple App Store's generated revenue from sales of mobile applications in 2012, amounted to over USD 15 dollar daily, while the figures from Google's store amounted to USD 3.5 million, according to research by H. W. Kim, Kankanhalli and Lee (2016). These writers further state that as the number of smartphone users is estimated to increase to more than 2 billion in 2015 globally, revenue growth from this mobile application economy is estimated to reach USD 75 billion by 2017.

As at August 2015, Kim et al. (2016), claim that the Apple App Store and Google Play, the world's largest application markets, offered approximately 1,700,000 applications from each of their platforms.

However, even with the large numbers of applications being purchased or downloaded, Kim et al. (2016), state in their research that a significant amount of applications remain unprofitable. The research states that 17% of application developers do not generate any revenue from the applications they have developed.

Of the portion that generates revenue, 52% receive below USD 100 per month. With cited high application development costs and low prices paid for the use of applications by the customers, extraordinary sales are required to break even, cover costs and still generate profits.

Although in some cases the applications have not been developed for purchase as part of the company digital strategy to drive other objectives such as communication with their customer base.

4

To encourage these application sales would require insight into the elements impacting a customers' conclusion to purchase or use an application.Alternatively what the customer would be seeking to purchase or use the application.

This insight is of particular importance as technology enabled applications available on the smartphones and tablet devices, have changed how consumers communicate and source information. These changes have greatly impacted lifestyles and how consumers interact with companies regarding the products and services, they source from these companies (Kim, Kim & Wachter, 2013).

While various studies can explain customer engagement, (Hollebeek et al., 2016; Kim, Wang and Malthouse, 2015), customer satisfaction, perceived customer value and prevalence of mobile technology, there is limited research and studies on what the elements that drive customer engagement are within the mobile applications context are.

With the increase in the number of applications available, the applications that are downloaded as well as the increasing revenue streams derived from mobile applications, some of the critical questions would be how companies would leverage of this through their mobile applications.

If the customer who is engaged is considered more profitable, what are some of the motivations for this engagement for the companies to leverage to increase the engagement?

Research demonstrates that the relationship between the level of customer engagement is a tool that can be utilised to increase consumption of the company product or service which is key in driving sustainable customer profitability, (Kumar et al., 2010).

Responding to the satisfaction of the customer is seen as crucial in the cultivating of current customer relationships and as a retention tool for customer loyalty, (Prebensen, Woo, Chen, & Uysal, 2013). Satisfaction converts the consumption of the service or product purchase to post-purchase phenomena such as attitude change, re-purchase, which drive revenue, and consequently brand loyalty over time.

Therefore companies recognise that mobile applications can be utilised as a supplementary platform to acquire new customers and increase retention with the existing customers. This in turn can increase revenues, (Kim et al., 2015).

Critical to note that not all applications are purchased outright. However with the companies utilising their applications to meet other objectives such as, driving further customer engagement, further to Kumar et al. (2010), the success of some of the applications need to be reviewed in light of the increased customer acquisition achieved through the application. As well as creating increased loyalty with the existing customers, as research by Kim et al. (2015).

1.3 Research objectives and motivation

Current literature proposes that there is significant advantage to a company and or the application developer when customers engage with their mobile applications, (Kim et al., 2015).

The company's capability to engage its customers has been recognised as a critical lever for companies that seek to build this long-term sustainable relationship with its customers and to enhance future consumption of its services or goods (Brodie et al., 2011).

Moreover, even with the increased prevalence of mobile application usage amongst customers, there is limited research on how exactly this impacts the company and customer. There is limited research on how company strategies have understood and incorporated this phenomenon in their company strategies based on findings by Wang et al. (2015).

Further understanding into the customer engagement concept has been prioritised by the Marketing Science Institute for 2014–2016 years, (Rizley, 2014). This topic features amongst the key items the list of exploration study priorities proclaimed by the Institute. Their prioritising of this topic aims to gain further understanding of customers and customer experience, in addition, further research into leveraging digital or social or mobile technology has been prioritised to number five as a research priority announced by the same institute, (Rizley, 2014).

Further to this prioritisation, the Marketing Science Institute stresses the importance of this concept to marketers for them to pursue more research-based knowledge on this concept of customer engagement. This is so they can explore key understandings and understand the level to which the research of customer engagement can profit from collaboration between industry stakeholders including marketing practitioners and academics, (Verhoef, Reinartz, Krafft & Bolton, 2011).

Wang et al. (2015), continue by stating that the more proficiently customers interact with a company, through their mobile platform, they are more likely to interact with the company continuously into the future. With this repeat or continued interaction as well as interrelating with the company through the other traditional channels, a company has a greater opportunity to effectively engage their customers.

Research further shows that customers who access a company's products or services through multiple channels will yield higher customer lifetime value. This positive impact to the company revenues, according to Wang et al. (2015), is attributable to the multi-channel availability, which increases access.

Research literature, to a greater extent, focuses on relationship marketing and look at how companies build, strengthen and maintain relations with existing customers. Limited consideration has been directed to attracting new customers (Vivek, Beatty & Morgan, 2012).

The researchers above also state, that by integrating customer engagement within the relationship marketing literature, this will inspire studies that look "beyond the purchase activity" and direct more focus to customer and potentially new customer experiences with the company brand or product, what they have termed as customer engagement.

Song, Kim, Jones, Baker & Chin (2014) conclude that in the application market, the sales revenue derived from the sales of mobile applications contribute the largest component to company revenues. The sales of applications are important to the developers and the service providers of these applications.

It has been noted that the application designers have been seeking means to increase their sales earnings, and App markets, through online feedback channels such as customer evaluations, ranking applications regariding which applications are popular

and record higher sales, and permitting users to trial the application, according to research by the same researchers.

Brodie et al. (2011), further note that recent discussion in the marketing in the business environment, as well as conferences and seminars topics, there are indications of an increased use of the word "engagement" in the context of business to customer relations. They highlight how the growing references to customer engagement plays a critical role in a company seeking to create a competitive advantage.

The Marketing Science Institute, has encouraged studies that provide for a improved insights of "engagement", in its 2006–2008 Research Priorities. It commented that with the rapid changes in technology around the manner of communicating, as well as globalisation, companies are realising novel ways to develop and maintain emotional interactions with their brands and therefore engage customers.

This emphasis further places importance on the understanding of how marketers and researchers can integrate the rapid changes in communication technology into their strategies in driving customer engagement.

2. Chapter 2 – Literature review

2.1 Introduction

The objective of the research was to investigate if:

- Do motivations that drive customers to engage with mobile applications (utilitarian; hedonic and social) have a relationship with customer satisfaction?
- Do motivations that drive customers to engage with mobile applications (utilitarian; hedonic and social) have a relationship with and perceived value?

In summary, does a relationship between the different motivations of engagement, the perceived value and the customer satisfaction.

This chapter reviews the customer engagement constructs and relies on literature to further explore this. The research reviews literature that explains the concept of customer engagement, satisfaction and perceived value.

The research also sought to explain the concepts of:

- Customer engagement
- Customer satisfaction
- Perceived value and
- Engagement motivations, namely, hedonic, utilitarian and social motivations.

The researcher cites definitions of the above concepts from literature reviewed. The cited definitions are carried through the rest of the research in researching the existence of a relationship between engagement motivations and customer perceived value and customer satisfaction.

Figure 1 below aims to set out the path followed through the literature review in answering to the main research questions that are expanded on in chapter 3.

The literature review investigates a number of themes that aid the understanding of the concepts of:

- Customer Engagement
- Customer engagement motivations (utilitarian; hedonic; social)
- Customer satisfaction
- Perceived customer value

Figure 1: Literature review framework
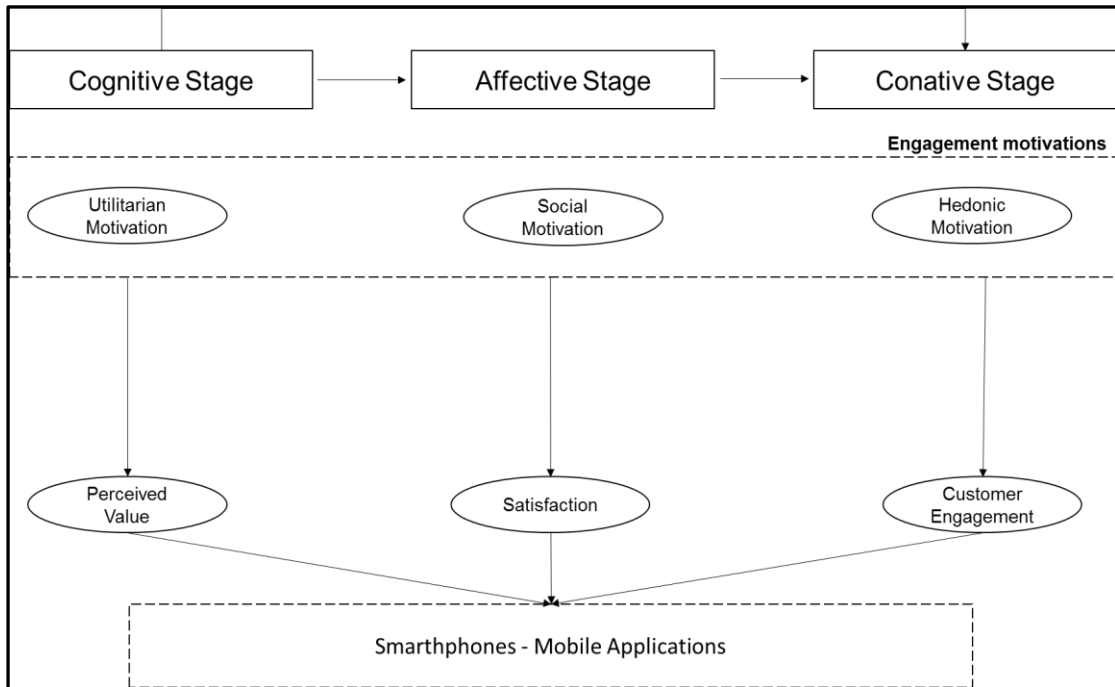
There have been numerous theoretical models, which have been utilised to explain technology acceptance and use. An analysis of the theories and models of technology use, have resulted in the integrated theory of acceptance and use of technology (UTAUT), as researched by Venkatesh, Morris, Davis & Davis (2003). UTAUT refined the important elements related to the expectation of behavioural motivation to use technology.

2.2 Smartphone applications

Literature has defined smartphone and device applications as software applications that are designed for mobile phone systems to be used by end customer. and which encompass the mobile phone abilities by assisting the users to execute certain tasks", (Purcell, Entner & Henderson, 2010).

Song, Kim, Jones, Baker, and Chin (2014) regard a mobile application as a software application that can be accessed through a smartphone or other portable technological device. These mobile applications enable the user to access internet services that the user would have previously accessed on desktop computers.

These applications serve as a core platform for an assortment of content and services

10

that mobile users can access at their convenience and any location, through a portable technological device of their choice.

Mobile applications are generally segmented into three categories of use: utilitarian – which enables the scheduling of meetings, online banking and recording tasks; and hedonic services which allows for the listening of music, browsing of pictures and gaming. This hedonic category is then further segmented into social service, which encapsulates chatting and social networking, (Hsiao, Chang and Tang, 2016). This segmentation creates the foundation for specifically studying the specific motivations this particular study has covered.

Mobile applications enable consumers to use their smartphones to take care of a variety and some of the daily tasks such as access the internet to search for information, banking services, accessing their email or access a directional map for a particular destination according to Song et al. (2014).

The increasing penetration of smartphones and other mobile devices, such as tablets and the use of mobile applications on these devices (smartphones and tablets), has seen an alteration of the traditional behaviour of a customer.
The three categories of segmentation have driven the focus of this research study.

The rise in popularity of mobile application markets such as Google Play and Apple's App store is due to the increase in popularity of smartphones and tablet devices according to Jang and Chung (2015). Using the various performance numbers referenced above, these mobile application markets have come to be one of the main marketplaces in the economy and their contribution to GDP increasing.

Potential mobile application users are attracted to application markets by the growing number of applications. This increase in the user pool encourages the application developers to design better quality applications and refine existing applications based, responding to the growing market according to Song et al. (2014).

The mobile application markets are different from other traditional marketplaces in that they offer the customers, the mobile application users, and the application developers or the companies offering the applications, a platform to interact frequently with each other on a real-time basis, through facilities that enable these interactions which most

11

applications offer, (Jang & Chung, 2015). This is the reason marketers and companies would benefit in participating in such markets.

The ubiquitous nature of smartphones and their functionality was further confirmed in a study undertaken by Tojib and Tsarenko (2012). Their research focused on the increasing prevalence of mobile application services in the marketplace.

These mobile services functionality extends beyond voice calls and short messaging services, but looks at the capability enabled by the mobile applications that provide customers with the ability to communicate with friends and family as well as communication with companies that provide a service or product, seek pleasure, perform functional transactions, and source information.

However, their market analysis also indicates and confirms the literature reviewed that the usage of these mobile applications is still below its market potential. This emphasizes the need for further research in this area for marketers and academics to understand what are the motivations behind a customer's need to use the various mobile applications available in the market.

2.3 Customer Engagement

In an attempt to gain further comprehension in to the levers that drive customer engagement, it is important to comprehend the notion around customer engagement.

Various literature has attempted to define engagement in mixed forms that include customer engagement, (Verhoef et al., 2011). The notion of customer brand engagement has been explored by Brodie et al. (2013); Hollebeek, Glynn and Brodie (2014). Research under community engagement undertaken by (Brodie et al., 2013). Customer-medium engagement by Calder, Malthouse and Schaedel, 2009; Y. H. Kim et al., (2013).

In an effort to constructing a model that measures customer engagement, O'Brien and Toms (2010), collected documented theories from various literature and research. This collective resarch, they theorised that engagement is both a process and product of interaction; its intensity may change over the course of an interaction depending on the combination of users' needs, goals, emotions, actions, and thoughts, or the format, visual presentation, and organization of the computer interface."(O'Brien & Toms,

12

2010. p59).

That body of work illustrates the continuous changes in the concept and the increasing in awareness of this concept. And why it is receiving this attention from various interest groups such as scholars. It is also of note, the differing viewpoints tabled by the diffrent scholars. Zhang, Guo, Hu and Liu (2015) believe that customer engagement can be understood as the recurring exchanges between customers and product that reinforce any investment, made by the customer towards the product or brand, including the emotional, psychological or physical investment.

In the branding space, an engaged customer is seen to have a long-term emotional association with the product or service as well as to behavioural contribution according to So, King, Sparks, and Wang, (2014).

Cheung, Lee & Jin (2011), proposed that there are three elements to consider when viewing customer engagement. It can be viewed as a process, a behaviour and a psychological state. It is further influenced by rational, emotional and social features, in accordance with suggestions made by (Brodie et al., 2011).

So et al., (2014), support this view in assessing customer engagement as the person's intimate connection to a company or what represents the company (company brand) as expressed through cognitive, affective, and behavioural reactions beyond the buying of a product from the company or service received from the company.

This concept is further reinforced by, Y. H. Kim et al., (2013), in their research on customer engagement, wherein they recognised reasoning, emotional and conative stages of customer engagement, which align to cognitive, effective and conative customer engagement stages.

So et al. (2014), further define customer engagement as a higher-order concept which consists of five first-order factors, namely "enthusiasm, attention, absorption, interaction, and identification" (pp.68). Enthusiasm they state, signifies a person's heightened level of enthusiasm and attentiveness concerning the effort of engagement.

Attention describes the consumer's concentration to the company or brand.
The customer's interaction refers to their online and offline interaction with the

13

company or brand, or other customers, outside of the purchasing process. Identification is seen as the customer's perceived coherence with the company or the brand.

There still seems to be limited agreement in other works concerning the precursors and consequences of the customer engagement. Especially in the online environment according to Alnawas et al., (2015).

Research contends that, through online customer engagement, customers have the ability to collectively generate an inmproved experience, whilst engaging with a company brand or application, to recognise and comprehend challenges and create resolutions for themselves states Alnawas et al. (2015).

The literature agrees that customer engagement does play a significant role in the long-term business performance. This business impact does differ in various fields as this concept is context-dependant, (Van Doorn et al., 2010).

In the context of smartphones and mobile devices, Kowatsch and Maass (2010); O'Brien and Toms, (2010) have stated that mobile engagement is present when users interact with the smartphone or other mobile devices to fulfil a need. These requirements can be intellectually focused motivations. The capability to bring satisfying experiences impacts the worth of participating in those activities.

Of particular interest and importance in the mobile applications context, the applications environment has become highly competitive due to a large number of mobile applications available. Statista (2016) state that as of June 2016, Android operating system customers had a choice of 2.2 million applications, while the Apple App Store had a choice of 2 million applications.

Although the number of applications are increasing, the margins derived from these applications as revenue are relatively thin, (Lim, Bentley, Kanakam, Ishikawa & Honiden, 2015). Of the above available applications, over 60% of these applications, have yet to be downloaded. In research undertaken by Forrester Research (2013), it was established that of the 24 applications that are used on a monthly basis by individual customers, less than 20% of these are used 80% of the time that is spent engaging applications.

14

Once an application is developed, it is sold using application distribution platforms, such as the Apple App store. The success of an application is then measured by the number of downloads and revenues generated from that application.

The lack of success of an application (an application receiving a low number of downloads or low usage), can be attributed to features unrelated to its functionality and usability, such as application name, application icon or level of exposure, (Lim et al., 2015).

Considering the growth of smartphones and limited usage of some applications, understanding how to engage customers is key for a company to progress in the highly competitive business market, (Dovalienė, Piligrimienė and Masiulytė, 2016).

Based on the above literature review, and although academics in the marketing arena are not in agreement with the definition of customer engagement. However, there are common themes in the definitions that the literature has surfaced:

- The connection between customer and company or brand includes the customer's emotional, cognitive, and behavioural involvement.
- There is emphasis on the customer's interaction with the company or brands, or with other customers.
- The definitions according to Brodie et al. (2011) state that customer engagement consists of customers' cognition, emotion, and behaviour.

In the mobile application context, non-transactional customer activities such as online or offline customer engagements have generated attention from academic research and market researchers. There is increased studies in this arena, although, research on finding a structure of online customer engagement and its related constructs that is robust and can be amended based on context is currently still limited.

In contrast, Lian and Yen (2013), explore a number of barriers that prevent the customer from engaging mobile applications. Their findings glean further understanding on some of the stated reasons as to why customers resist engaging in mobile innovation such as mobile applications. Some of the barriers identified for engaging are due to the challenges produced by the changes and upheaval associated with the novelty brought about by mobile applications.

15

2.3.1 Customer engagement motivations

Studies in behaviour motivation, contend that a customer's attitude and the formation of the attitude could explain current behaviours and be a predictor of future intention to engage and behaviour, (Verdegem & De Marez, 2011). In employing motivation theory, it then becomes critical to create an understanding of the reasons behind the usage of mobile applications. This understanding aims to analyse the main intrinsic and extrinsic motives as well as their fundamental factors when a user engages with a mobile application.

Intrinsically motivated people, "involves people doing an activity because they find it interesting and derive spontaneous satisfaction from the activity itself". Extrinsically motivated individuals "act with the intention of obtaining a desired consequence or avoiding an undesired one, so they are energised into action only when the action is instrumental to those ends", (Gagné and Deci, 2005, p. 334; see also Davis et al., 1992). Benefits accompanying with the benefit derived from doing the activity are intrinsic motivators.

Verhagen, Feldberg, Van Den Hooff, Meents and Merikivi (2012), found that extrinsic motivations, with elements such as usefulness and functionality, alluding to utility, did influence customer engagement. The research above also found there exists a relationship intrinsic motivation, with elements such as fun and entertainment closely aligned to hedonic motivations, also had a connection with the user engagement.

In examining the customer's incentive to use a mobile application, this provided insights into what could drive their continued engagement. The user motivation is utilised to then drive increased user engagement according to Hoehle and Venkatesh (2015).
By increasing the engagement, this should minimise the probability of the customer no longer using the application or the loss of engagement based on work by Thakur et al. (2011).

With the rapidly growing and developing an environment of information and communication technologies and specifically the mobile applications market, Verdegem and De Marez (2011), stated that a wide-ranging and inclusive framework for understanding determinants or motivations for technology acceptance theory is critical. In this context, technological acceptance has been used in the context of mobile

application technology.

This understating is critical in gaining insights to address the various challenges that face the application developers, marketing managers, policymakers as well as academic researchers. With the increasing offerings in the mobile application marketplace and the applications that do not gain critical mass adoption for them to be commercially viable, it then further emphasises the need for the various stakeholders to gain insights into the drivers and motivations for adoption of technologies such as mobile applications.

The insights gained would assist the stakeholders to develop more effective and targeted strategies for commercial success, (Verdegem & De Marez, 2011). Any activities that a company undertakes in the mobile applications space requires that they understand a customer's behaviour and what drives this behaviour, the motivation, (Xu, Peak & Prybutok, 2015). The writers note that there is limited research that reviews the motivations and behaviours that drive application usage.

Moldovan, Steinhart and Ofen (2015) propose four types of motivations for adopting innovations and can be applied in the context of mobile applications:
- Functional motivations, these motivations encourage the customer or potential customers to seek applications that will enable them to complete their tasks more efficiently, utilitarian;
- Hedonic motivations, which refer to the customer's need for pleasure and delight or entertainment they can derive from their engagement with the application;
- Cognitive motivations, motivate the customer who would be looking to satisfy their curiosity and respond to their desire for more information on a variety of items; and
- Social motivations, in this case, customers, look to the engagement to enhance their social interactions.

This study focused on the functional (utilitarian), hedonic and social motivations to engage with mobile applications. On the other hand, Thakur (2016) expanded the motivations and developed and validated customer engagement as a construct emerging from six customer experiences:
- Facilitation of social activity
- Self-connect
- Enjoyment

17

- To fill time
- Functional and
- Financial assessment experiences (p 156).

Thakur (2016) documented that customers are motivated to utilise their mobile devices and often the usage is through a mobile application for a number of activities such as communication, accessing music, searching for information, executing transactions such as banking or shopping, managing diaries and keeping social contact with family and friends.

Nakata and Weidner (2012) offer an alternative view on motivations that drive mobile application adoptions, in this research the writers looked to the financial mobile application. The application design in reference to its features and its attributes is deemed important based on their findings.

Y. H Kim et al. (2013) are of the view that engagement motivation as a customer's motivation to engage in activities involving their mobile devices or smartphone. Researching the customer's motivation to use in mobile applications can provide further insight in explaining their extent of their engagement with the application.

Application engagement can draw out various customer experiences, (Y. H. Kim et al., 2013). These experiences could be classified as motivation. And can be classified in three manners, utilitarian (efficiency, easy to use, time saving), hedonic (pleasurable, pleasure, fun) and social (yearning for connection and sharing with others) according to Y. H. Kim et al., (2013).

These motivations can be predisposed to context. The diversity of customer engagement contexts leads to different ways of its conceptualisation, (Brodie et al., 2013). In the context of mobile applications, customer engagement can be driven by various motivations including utilitarian, hedonic and social.

These motivations are said to then drive the constant and continued engagement with the application. The various factors influencing customer engagement in the context of online activities and mobile environment have been further analysed by Y. H. Kim et al (2013) and Hollebeek, Glynn and Brodie (2014) in the context of social media.

18

Although Van Doorn et al (2010), state that distinct customer features and the efforts the company undertakes to engage the customer, may result in different levels of customer engagement. Gambetti and Graffigna (2010) further confirm this in their research.

Verdegem and De Marez (2011) explored the customer engagement phenomenon through the determinants theory model. They analysed the 'adoption determinants' which refer to factors that impact the adoption and engagement process.

This view has since been further extended and includes methodology based on 'attitudinal' adoption factors. These attitudinal determinants are aligned with subjective perceptions of innovation elements and personality traits. This method adopted from the diffusion theory.

The attitudinal determinants are based on five elements:
- 'Relative advantage'
- 'Complexity'
- 'Compatibility'
- 'Trial-ability' and
- 'Observability' , (Verdegem & De Marez, 2011. p74)

The attitudinal determinants have been quoted as factors shaping the particular perception of a user's approach to the mobile application engagement.

For companies to exploit the opportunity presented by the increasing mobile application penetration as well as derived revenue from the customer's engagement, understanding what drives this engagement should form part of their customer engagement strategies.

In their studies on customer engagement Kim, Wang, and Malthouse (2015) suggest this in their argument that the greater the customer is engaged in the application, the more likely they are to spend with that company or service or product offered by the application, (Kim et al., 2015).

2.3.1.1 Motivations to engage

Utilitarian Motivation

The motivations to engage can stem from lifestyle choices, management of diaries and

19

appointments, scheduling and management of tasks; these are seen as utilitarian, (Kumar et al., 2010).

Utilitarian motivation can be described as a functional result that is achieved by the performance of the applications that is key in reaching valued results different from the usage itself Bellman, Potter, Treleaven-Hassard, Robinson and Varan (2011). In their analysis of applications, they indicate that applications can be categorised into informational and experiential in terms of their content.

Xu et al. (2015) defined utilitarian benefits of engaging with mobile applications, as functional motivations where the customer expects the applications to fulfil a performance function. These motivations are concerned with the application utility and the application quality. Application utility is the degree to which a customer trusts that using the application will bring anticipated outcomes for the function they are executing.

Poch and Martin (2015) classified certain behaviours as extrinsically motivated behaviours which are motivated by the value of the executed activity, which is the result of the activity rather than from the activity itself". Given the critical value of utilitarian systems, Verhagen et al. (2012) summarise the definition as extrinsic motivations as having a dominant impact on engagement, these extrinsic motivations are aligned to the defined utilitarian motivations.

Informational application engagement provides utilitarian or functional experiences, which allow customers to efficiently facilitate their functional requirements such as banking, payment of services rendered or purchase of tickets.

Utilitarian standards are closely linked to the effective and proficient use of an information system in the contexts of mobile applications according to Venkatesh (2012).

Hedonic Motivation

Hedonic motivation is can be classified as the entertainment or pleasure resultant from using technology or mobile application, and it has demonstrated to play a critical part in shaping technology acceptance and use or engagement, (Venkatesh, Thong and Xu, 2012).

20

In contrast intrinsic motivation is seen as executing an activity to attain a certain outcome of the needed performance. And it encompasses users engaging in events that they find interest in, novel and challenging according to Poch and Martin (2015). It is the enjoyment or fun that they will derive in engaging with the application. Poch and Martin (2015), state that the action delivers the person with pleasure and delight; thus, they are doing it 'for their own sake' rather than for receiving an incentive.

Hedonic motivation is seen to be a a critical determining factor of technology acceptance and use. The writers concluded that hedonic motivation is also a predictor of consumers' behavioural intention to engage with technology such as a mobile application, (Alnawas et al., 2015)

Higgins and Scholer (2009), state that a customer can expect pleasure from the activity, and those anticipations may create a need to engage further, in line with hedonic motivation factors.

Enjoyment forms the antecedents in establishing hedonic motivation. In this context, the enjoyment derived from engaging with a mobile application, is the pleasure or delight felt experienced from engaging with the application. In other words, enjoyment refers to the hedonic value of a good (in this case the mobile application), which is the utility derived from feelings or affective states that the engagement with the mobile application generates based on the research undertaken by Kim et al. (2014).

Hedonic motivation can be seen as the customer seeking to fulfil a non-functional need to obtain fun and self-fulfilment, (Xu et al., 2015). Hedonic motivations are concerned with the enjoyment and the visual appeal of the application to the user.

Hedonic value is mainly derived from pleasant, fun and enjoyable experiences and feelings, directly relating to personal emotions and feelings (Babin, Darden and Griffin, 1994) and is created when customers interact with the company and or other customers.

One of the key implications analysed by Partala and Saari (2015), was that there are more attributes of motivation to engage other than motivations of hedonic nature such as mobile application usefulness or ease of use of the mobile application.

21

Application developers would need to understand further that the user's emotional reactions to their mobile application does also influence the user's motivation to engage.

In any motivation, the customer's feelings of enjoyment and fun need to be incorporated; this notion is explored by further by, Partala and Saari (2015). These writers further claim even when engaging functional applications, such as a fashion store application, this engagement needs to result in a fun and enjoyment experience. This is aligned to hedonic motivations.

In their research findings, Partala and Saari (2015) found that the emotional positive or undesirable experiences as the most significant motivators in engaging with applications. These motivations did not have hedonic motivation elements associated with them.

Social Motivation

Social motivation is the outcome of a yearning to connect and share with others, (Y. H. Y. H. Kim et al., 2013). Social influence research set out that social features influence the individual decision making was set out in research by Wood and Hayes (2012). This research also highlighted that social motivation is driven by the motivation to be in cohesion with other people socially. This social motivation is highlighted by the need for people to be in social unity with others.

To ascertain what the key elements are for social motivation, Chang and Zhu (2011) built a list of constructs that would define social motivations:
1. "Connecting with old friends
2. Keep in touch with old friends
3. Communicate with distanced friends
4. Check out someone I met socially
5. Meeting new people
6. Find new people with the same interests
7. Increase my social networks" (p65).

These constructs align to the responses to the survey that customer will engage mobile applications motivated by the need to stay connected with friends and family as well as to share information with the friends and family. The constructs listed above have not covered in their entirety in the survey, but seem to imply a similar theme of a motivation to connect with others.

22

Ono, Nakamura, Okuno and Sumikawa (2012), undertook a study to establish customer motivations in engaging online stores through the customer accessing the store via the store application, through using their mobile devices. Customers are driven to engage with the fashion store application to share store information with friends and family.

This type of motivation is impacted by the events and instants that the customers create and share with their friends, associates and family via social platforms accessed through mobile applications.

Zhang et al. (2014), customer sociability ensues due to the need for shared interactions in social or social mobile environments, which could be seen as a platform for customers with comparable interests, which the customers use for recommendations and references on various services or products used.

Mobile applications have become an important feature in a company's innovation process (Nguyen, Yu, Melewar & Chen, 2015). The use of social mobile applications provides these companies with insights into these customers' needs, which can be used as a source of competitive advantage for the company.

Companies are able to use these insights to identify market trends and gaps for them to exploit economically as well as using the insights to adapt to the prevailing marketing conditions according to Nguyen et al. (2015).

This highlights the need for companies to understand the social motivation of their customers. This also encourages application developers to design applications that have social elements integrated to encourage the sharing of information with friends and family.

There has been a rise in the prevalence and usage of mobile social networking services over the last few years based on findings by Yang, Wang and Lu (2016). These researchers state a claim that in 2014, Facebook had more than 1.3 billion active profiles. More than 80% of these users access the Facebook application through their mobile device. This findings allude to customer using this platform to connect socially.

Park, Lee and Chung (2016) consolidated various research and summarised mobile technology would transform the manner in which people communicated and maintained communication with their networks.

Lien and Cao (2014) analysed a number of social mobile application research and noted that connecting with old friends and meeting new people as well are a major motivation to access a social mobile application.

2.4 Customer motivations and Customer perceived value

Perceived value is seen as the "process by which an individual, receives, selects, organises, and interprets information to create a meaningful picture of the environment", as researched by Prebensen et al. (2013).

This research further elaborates on value perception as a method that a customer picks, obtains, consolidates and deduces information based on the various interactions with a company or product to create a significant representation of the value of their experience.

Utilitarian Motivations

In a study by Zeithaml (1988), cited and agreed to by Chiu, Wang, Fang and Huang (2014), defined perceived value as a an interchange between benefits and related costs that is "…the customer's general assessment of the utility of a product or service based on what is received and what is given" (p. 73).

Arslanagic-Kalajdzic and Zabkar (2015), define customer perceived value as a trigger for attitudes and conduct. They state that unobservable measures, such as perceived value, have direct and indirect impact on company performance.

The writers further believe that there has been no agreement amongst researchers in the definition, sphere and scope of customer perceived value. Nor its antecedents, consequences and dimensions.

They concede that customer perceived value should be seen through quality and price values, social values and emotive values dimensions. But they question whether antecedents of value, quality and price are qualifications or sub-components of value.

24

Perceived value is defined by Chiu et al. (2014) and an exchange of costs and benefits. The time taken to engage an application, the price it costs to use the application (the price of the application) are elements of the cost theme. Research utilised by Xu et al. (2015) suggested value perception is impacted by financial and non-financial sacrifices.

The concept of financial sacrifices is in reference to what the customer has had to give up financially to acquire the product or service. Non-financial sacrifices include time, physical or mental effort required to attain and or use a product. In the context of mobile applications, monetary and non-monetary sacrifices are applicable as application users are both customers and user of technology.

Customers perceive value based on their perceptions of what is received in exchange for what is given, in this context, what the customer received in exchange for the price they paid for the mobile application or their data cell phone bill, (Kim et al., 2016).

This concept, previously presented by Prebensen et al. (2013), further elaborates that perceived value has been simplistically categorised as value for money". But they have deemed this categorisation as not sufficiently elaborating on the concept.

As a customer, Xu et al. (2015) further elaborated, the user will need to sacrifice financially to pay for the application. In reference to the non-monetary sacrifice, as a technology user one is required to apply effort in learning how the application functions as well as effort in learning to familiarise themselves with the functions of the application.

In other studies that review perceived customer value as a set off between the value received when there is a cost investment in exchange for a product or service, as well as including various levels of value dimensions. Based on this, perceived value is therefore seen as an important tactical tool for companies wishing to be competitive and remain competitive, (Prebensen, Woo, Chen & Uysal, 2013).

In literature analysis performed by Dovaliene, Masiulyte and Piligrimiene (2015), four elements of customer perceived value were explored, namely social, functional, epistemic and emotional dimensions. The four elements seem to correlate perceived customer value to the antecedents of the different motivations.

25

2.4.1 Motivations relative to Customer perceived value

Figure 2: Customer perceived value dimensions
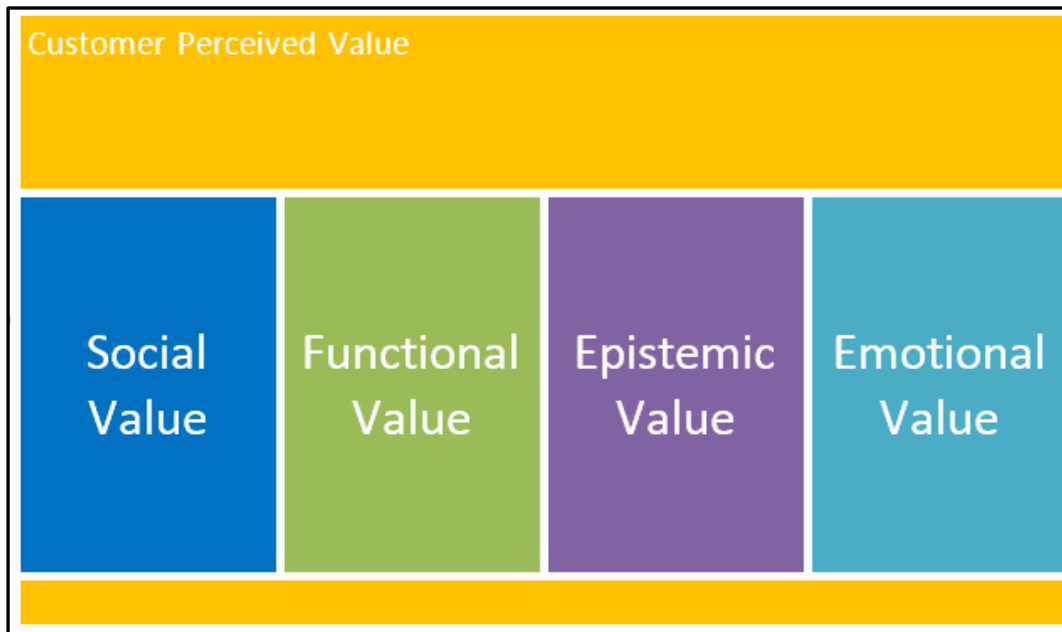
Social

Interpersonal, social or collection of benefits, connectedness, individual interactions, creating trust or obligation and receptiveness to the product or service. These themes seem to align to the notion that social elements do have a relationship with the notion of perceived value. The customer may perceive value when the social motivations are met through engaging with the mobile application.

Functional

Functional value is linked to the magnitude that a product or service (or application) is beneficial based on the features it provides, anticipated functionality, consistency, performance (in reference to its quality and or efficiency). And, the ability of the product or service to be of functional use to the customer, enabling the customer to execute their tasks.

The customer engages mobile applications that they believe would result in (perceived) value. The requirements for the value to be present would be the mobile application meeting the utilitarian requirements as listed above.

27

Epistemic

These element of value is concerned with interest provided by the product or service (or application), the innovation and desire for knowledge, finding out new content, testing new services.

Emotional

The emotional value is the degree to which the product or service creates applicable state of mind and sentiments for the customer such as aesthetics, pleasure, entertainment, eagerness and adventure.

2.5 Customer satisfaction and Engagement motivations

Customer satisfaction is defined as "a customer's overall evaluation of the performance of an offering to-date", (Gustaffson, Johnson, and Roos 2005; Johnson and Fornell 1991). It is also seen to be a result of an 'engagement', according to Brodie et al. (2011).

Engagement,' contrasts 'satisfaction,' is focused on consumers' cognitive, emotional and behavioural undercurrents during particular application interactions (whereas satisfaction may arise afterward).

Customer satisfaction is an experience-based assessment made by customers, based on how far their own expectations about characteristics of the overall functionality of services obtained from a provider have been fulfilled as defined by Calvo-Porral and Lévy-Mangin (2015).

Therefore customer satisfaction is in relation to the extent that service or product received surpasses or falls short of what the customer expected. Therefore customer satisfaction either increases or is lowered based on the service or product the customer has received, (Dovaliene et al., 2015). And based on whether the service or product met the customer's motivation need. In the context of motivations, the extent to which the motivation is met will determine the level of the customer satisfaction.

Dai, Luo, Liao and Cao (2015), point to satisfaction as, the customer's assessment and emotional response to a post-purchase consumption experience. A customer's satisfaction is reliant on their personal perception and valuation of service received or

product purchased.

Prior studies suggest that concentrating on utilitarian and hedonic motivations may assist researchers and academics better understand the customer's motivation in various contexts according to Chang and Chen (2015).

Utilitarian

These researchers cite earlier research by Childers, Carr, Peck and Carson (2001) as a basis for their findings, that even with the execution of goal-oriented tasks, such as an as online shopping application, elements of the application that fulfil the hedonic motivation, such as interactive menus can result in increased levels of enjoyment. This enjoyment increases customers' positive reception of the application. Which then results in higher levels of customer satisfaction with the application.

With the plethora of applications available from the various application stores, a user's ability to work through the large numbers as in the introductory chapter, is seen as a challenge for the potential user. For these developers to develop applications that respond to the user need and motivation is therefore critical that there is better understanding on what would motivate the user for them to derive the required satisfaction and perceived value, further states Song et al. (2014).

Satisfaction is a measure of the accomplishment of information systems and is an important concept in information systems research as it relates to success aspects such as trust, relationship intention, continuance intention and loyalty based on work cited by Verhagen et al. (2012).

Hedonic

Satisfaction reflects post-use evaluation of the application the customer would have used. Satisfaction is defined as the attitude of a hands-on user towards the mobile application.

A study reviewing the influence of mobile application features on customer satisfaction revealed that a variety of extrinsic values such as ease of use, usefulness or knowledge sharing as well as intrinsic values such as aesthetics, fun, entertainment and enjoyment associated to mobile application engagement impacted the user satisfaction.

29

Social

In the research undertaken by Park et al. (2016) as part of their study also found that communicating utilising mobile phone through traditional voice communication as well as the various other communication application within the user's relationships enhanced expectations of relationship maintenance.

2.6 Conclusion –Literature review

Through the review of various literature conducted in this chapter, a number of themes emerged pertaining to the discussed themes, notably: Customer engagement, engagement motivations and customer perceived value and customer satisfaction.

In aligning back to mobile applications, the literature pointed to the segmentation of the applications into three segments according to Hsiao et al., (2016):

- Utilitarian – this includes applications such as Waze application to search for road directions or the calendar application to assist the customer in setting appointments.
- Hedonic – this includes applications such as music applications and the photography that enable the customer to indulge in fun activities.
- Social – this includes applications such Facebook and Whatsapp that facilitate communication with new and existing friends.

The rapid growth in the application market has created opportunities for the application developers and companies to increase their revenue stream from the sale of the applications specifically for the for sale applications.

Some applications available from the various application store can be accessed at no cost to the customer. These applications fulfil various motivations that cannot be measured by the revenues as they are not sold for to the end customer. As limited as the research around how companies are integrating this platform as part of their digital strategies, it seems not all applications derive direct revenue for the company.

This literature review also revealed a number of engagement motivations in the context of mobile applications. The motivations were classified into utilitarian (functionality) hedonic (fun and enjoyment) and social (communication) themes. These motivations were analysed specifically to customer engagement, customer satisfaction as well as the perceived customer value.

31

Academics and marketers seem to be divided in relation to the concept of customer engagement and how to fully harness it for company performance based on work concluded by (Alnawas et al., 2015).

The increasing contribution of the sales of the mobile applications to the economic revenue, with an expectation that will reach USD 75 billion, by 2017 is one of the direct measures of the success of this market.

The customer perceived in relation to the application, not only focuses on the monetary value the customer associates as a cost to in exchange to the benefit of the usage of the application, but also the non-monetary as discussed in research by Xu et al., (2015).

Below are the research questions arising from the analysis of the literature review, which the research will aim to answer.

2.7 Research questions

The literature studied in this chapter has guided the testing of the following hypothesis:

2.7.1 Research question 1

Does the user motivation for engaging mobile applications influence the perceived value the customer derives?

2.7.1.1 Hypothesis 1A

H_0: rUtilitarian motivation - rCustomer perceived value = 0
H_1: rUtilitarian motivation - rCustomer perceived value > 0

2.7.1.2 Hypothesis 1B

H_0: rSocial Motivation - rCustomer perceived value = 0
H_1: rSocial Motivation - rCustomer perceived value > 0

2.7.1.3 Hypothesis 1C

H_0: rSocial Motivation - rCustomer perceived value = 0

H_1: rSocial Motivation - rCustomer perceived value > 0

2.7.2 Research question 2

Does the customer motivations for customer engagement influence the customer satisfaction?

2.7.2.1 Hypothesis 2A

H_0: rUtilitarian motivation - rCustomer satisfaction = 0
H_1: rUtilitarian motivation - rCustomer satisfaction > 0

2.7.2.2 Hypothesis 2B

H_0: rHedonic motivation - rCustomer satisfaction = 0
H_1: rHedonic motivation - rCustomer satisfaction > 0

2.7.2.3 Hypothesis 2C

H_0: rSocial motivation - rCustomer satisfaction = 0
H_1: rSocial motivation - rCustomer satisfaction > 0

2.7.3 Research question 3

Does the customer motivation to engage with a mobile application influence the customers' engagement?

2.7.3.1 Hypothesis 3A

H_0: rUtilitarian motivation - rCustomer engagement = 0
H_1: rUtilitarian motivation - rCustomer engagement > 0

2.7.3.2 Hypothesis 3B

H_0: rHedonic motivation - rCustomer engagement = 0
H_1: rHedonic motivation - rCustomer engagement > 0

2.7.3.3 Hypothesis 3C

H_0: rSocial motivation - rCustomer engagement = 0

33

H_1: rSocial motivation - rCustomer engagement > 0

3.   Research Questions

The study aims to respond to the research questions set out through the testing of the hypothesis as set out in this chapter.

The theoretical method had utilised the motivation to engage in cognition, affection to result in hedonic values and current satisfying experiences and conation as their motivation to engage with the applications.

This research identifies and aims to understand:

- Do motivations that drive customers to engage with mobile applications (utilitarian; hedonic and social) have a relationship with customer satisfaction?

- Do motivations that drive customers to engage with mobile applications (utilitarian; hedonic and social) have a relationship with and perceived value?

The diagram 1 below sets out the proposed research model adapted from Y. H. Kim et al. (2013).

Figure 3: Research question framework
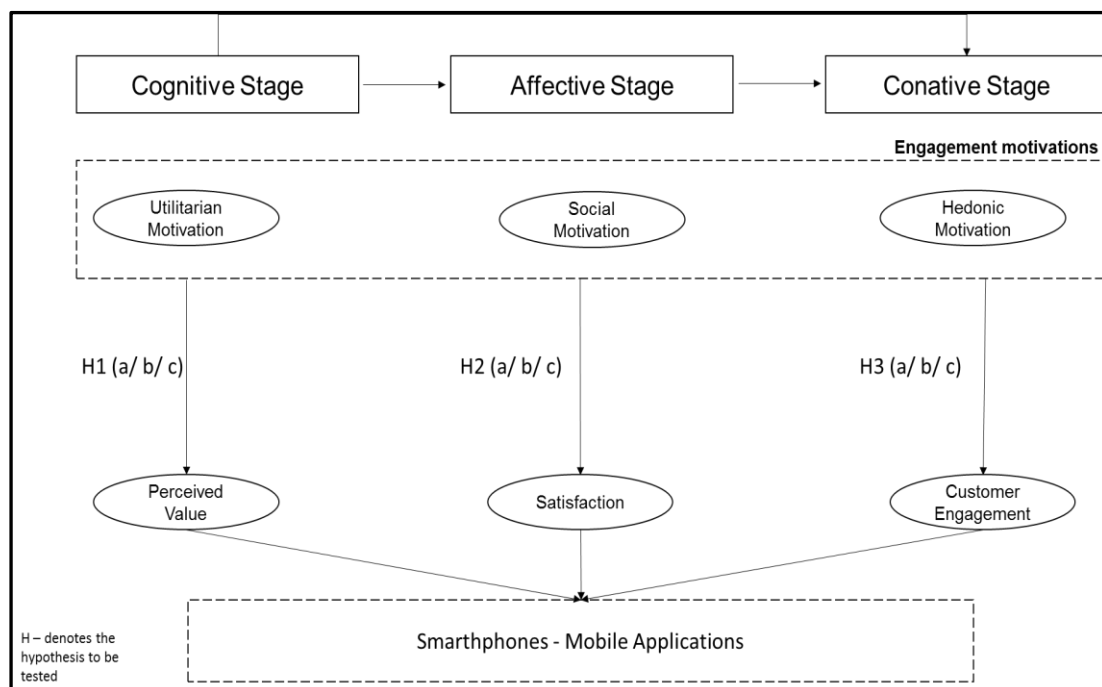
3.1 Research Question 1

Does the user motivation for engaging mobile applications influence the perceived value the customer derives?

In literature analysis performed by Dovaliene, Masiulyte and Piligrimiene (2015), four elements of customer perceived value were explored, namely social, functional, epistemic and emotional dimensions.

3.1.1 Hypothesis 1A

H_0: rUtilitarian motivation - rCustomer perceived value $= 0$
H_1: rUtilitarian motivation - rCustomer perceived value > 0

A Spearman correlation analysis will be used to test the hypothesis in response to the research question.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.1.2 Hypothesis 1B

H_0: rSocial Motivation - rCustomer perceived value $= 0$
H_1: rSocial Motivation - rCustomer perceived value > 0

A Spearman correlation analysis will be used to test the hypothesis in response to the research question.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.1.3 Hypothesis 1C

H_0: rSocial Motivation - rCustomer perceived value $= 0$
H_1: rSocial Motivation - rCustomer perceived value > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.

Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.2 Research Question 2

Does the customer motivations for customer engagement influence the customer satisfaction?

Prior studies suggest that concentrating on utilitarian and hedonic motivations may assist researchers and academics better understand the customer's motivation in various contexts according to Chang and Chen (2015).

3.2.1 Hypothesis 2A

H_0: rUtilitarian motivation - rCustomer satisfaction = 0
H_1: rUtilitarian motivation - rCustomer satisfaction > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.2.2 Hypothesis 2B

H_0: rHedonic motivation - rCustomer satisfaction = 0
H_1: rHedonic motivation - rCustomer satisfaction > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.2.3 Hypothesis 2C

H_0: rSocial motivation - rCustomer satisfaction = 0
H_1: rSocial motivation - rCustomer satisfaction > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.3 Research Question 3

Does the customer motivation to engage with a mobile application influence the customers' engagement?

Most research outcomes on the Information systems platforms, have resulted in the utilitarian motivation as a critical basis of motivating system customer engagement because customers according to Hong and Tam (2006) and Kim et al. (2007), make rational, considered valuations of the purposeful benefits and sacrifices of using a technological platform.

Hedonic motivation is primarily non-instrumental, practical, and emotional according to Kim and Han (2011).

Sociability is as a result of customers stemming from common connections in social platforms, where customers with comparable interests endorse and provide view on different services or products. The backing from others is one of the major social values that customers attain from their exchanges. Thus, social motivation makes customers believe that they are cared for, valued and helped by other customers in their social network, as stated by Kourouthanassis and Giaglis (2012).

3.3.1 Hypothesis 3A

H_0: rUtilitarian motivation - rCustomer engagement = 0
H_1: rUtilitarian motivation - rCustomer engagement > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.3.2 Hypothesis 3B

H_0: rHedonic motivation - rCustomer engagement = 0
H_1: rHedonic motivation - rCustomer engagement > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.
Accept the null hypothesis if $p < 0.05$ and $r > 0$

3.3.3 Hypothesis 3C

H_0: rSocial motivation - rCustomer engagement = 0

H_1: rSocial motivation - rCustomer engagement > 0

A Spearman correlation analysis will be used to answer the above research question and respond to the hypothesis.

Accept the null hypothesis if $p < 0.05$ and $r > 0$

4. Chapter 4 – Research Methodology

4.1 Introduction

The previous chapter set out the hypothesis that the researcher is testing.

This research identifies and aims to understand the following through hypothesis to test if a relationship exists between:

- Customer satisfaction and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations
- Perceived customer value and
    - Utilitarian motivations and
    - Hedonic motivations
    - Social motivations
- Customer engagement and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations and engagement

This chapter will detail the study design that was undertaken by the researcher to respond the stated research questions and outlines the research methodology, data collections instrument, the sampling plan as well as the data collection method and process.

The basis of this research was guided by the literature reviewed in Chapter 2, which shaped the research questions that were explained in Chapter 3. The research questions were best researched using a quantitative research design. Consequently this approach aided structure when analysing the data through the identification of patterns that emerged through the data analysis.

4.2 Research Design

This research design describes the process followed to test the hypotheses stated in the previous chapter.

Quantitative research proved to be most appropriate for the study as possible motivation drivers had been identified and the techniques could were then utilised to measure the validity and directionality of the drivers. In addition, the method would provide the diagnostic information to inform future causal research.

An internet-based self-administered survey was used as the data collection instrument with questions relating to each survey theme.
The questions were set out utilising a Lickert scale for the respondent assigned their responses based on the scale options.

4.2.1 Research design type

Following the findings from the literature review, a quantitative statistics method was utilised to investigate the existence of a relations between the main themes as highlighted in chapter 3.

A quantitative study was undertaken in collecting data for this study through a self-administered online survey. The Spearman's rho correlation was then utilised to test the ten hypotheses generated in the previous chapter.

4.2.2 Data Sources

The data was collected through an online self-administered survey that required each respondent to access the survey at their convenience within a provided timeframe and record their own responses. The research was conducted utilising nonprobability sampling, by electronically distributing the survey to 300 participants using email as a platform.

4.2.2.1 The Survey

The survey was constructed using the research themes of customer engagement motivations; customer perceived value and customer satisfaction in their use of mobile applications.

The survey method was utilised in a study by Y. H. Kim et al. (2013). The survey was deemed an appropriate method to collect the data for this type of study and as the most efficient means to collect the same type of data from a large number people.
Sections of the antecedents to customer engagement were also used in a survey to

40

measure customer engagement derived in a study by O'Brien and Toms (2010).

The survey was constructed with six sections whose responses ascertained if the customer engagement motivation; perceived value from the engagement as well as the satisfaction derived from using the mobile applications.

Descriptive statistics were used to determine the means and median of the variables.
To test the relationship between the variables, the Spearman correlation analysis is used. The use of Spearman rho analysis, as used by Brodie, Hollebeek, Juric and Ilic (2011).

Spearman analysis is used in measuring the correlation of the variables as utilised by Brodie, Hollebeek, Juric and Ilic (2011) in their study. Spearman's correlation was deemed suitable to explore the extent to which a customer engages with mobile applications is impacted by their motivation to engage. This engagement would create value for the customer who continues to be engaged. This creates continued use of the applications, driving customer value and satisfaction.

The literature review provided guidance on common themes that arose for further exploration and in the formation of the make-up of the survey.

The results of the survey sought to explain if the motivation to engage with mobile applications does have an impact in the perceived consumer value as well as the customer motivation.

4.2.2.2 Key considerations for online surveys

Although dated research, Vicente and Reis (2010), in their research on online web survey design, highlighted some factors in utilising an online survey.
They considered that in order to minimise the non-responses, and improving the survey completion rates, survey designers should consider:

- Structure and layout of the survey - logical flow of the survey
- Highlight of survey progress – progress the respondent has made against the total number of questions
- Visual presentation – visual appeal, including grammar and spelling errors
- Interactivity, format of responses and survey length

41

Vicente and Reis (2010), further note that the ease of reading of the survey would facilitation understanding and encourage the completing of the survey.

The design of the survey utilised in this research employed forced responses, through the survey software utilised. This was utilised to reduce the non-response rate.

Research surveys by their nature place a burden on the respondent to allocate time and effort in their responding to the survey. The less cumbersome and less complex the survey instruments is, the better the response completion rates that can be expected.

To this end, there seems to be no standard measure of the correct or acceptable length of a survey questionnaire, (Vicente & Reis, 2010). Considering the above guidelines as well as the impact on the respondents time and effort, the following were considered when the instrument was designed, the number of questions, number of pages, completion time as well as length of the individual questions.

4.3 Universe and Sampling

4.3.1 Population

The population for this research was defined as all customers of cell phones or users of technological tablets or devices. This population is across age, race and gender. The population did not differentiate between the number of mobile applications the customer engages with. Nor did the study differentiate between how frequently one engages and the duration of the engagement at a time.

To appropriately select a sample from the population certain criteria was applied.

Criteria One

From the population, the researcher looked to customers of smartphones or tablet devices as it is on such devices that consumers engage with the mobile applications.

The Oxford Dictionary defines a smartphone as, "A mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded applications", (Oxford Univeristy Press, 2016).

Criteria 2

42

Further criteria applied was that the customers of smartphones or tablet devices over the age of 18 years. The survey was sent only to customers are over the age of 18 years.

The selection of the respondents was not based on gender, race and age and geographic location. The selection did not consider the number of smartphones or tablet devices a single customer may own or utilise.

4.3.2 Sampling method and size

Due to the impracticality and capability of the researcher of having access to the entire population, a non-probability sampling technique was utilised. More specifically, purposive and possibly snowball sampling will be used in selecting the members of the sample.

Purposive sampling is a non-probability sampling techniques, resulting in the researcher relying on their judgment to select those participants who are more appropriate to gain the necessary information from the sample as documented in Saunders and Lewis (2012).

This method was applied by Brodie et al., (2011). Some identified disadvantages to non-probability sampling is the risk of bias that could be introduced in the statistical findings due to the lack of access to significant target population by the researcher. Measuring the sampling errors was also then not possible according to Wegner (2012).

Due to the electronic nature of the survey, there was an element of snowball sampling due to the large prevalence of smartphones in use within the population and the ease of the selected respondents in forwarding the survey further to other customers of smartphone or tablets.

The initial sample of the population selected was based on convenience sampling based on the access the researcher had secured to the respondents who met the above criteria.

4.4 Data Collection Process

The purpose of the study was to collect data using the same set of questions from a number of different respondents and the questions were in the same order for all the

respondents.

The data was collected through an online self-administered survey that required each respondent to access the survey at their convenience within a provided timeframe and record their own responses.

The survey items adapted from previous online survey that was utilised by, Y. H. Kim et al. (2013). The survey tool adaptation was based on the specific objectives of this particular study of exploring the relationship.

The survey utilised consisted of six sections with the aim of responding to the research questions.

- The first three sections explored the types of motivations for a customer to engage with the mobile applications. The constructs to the motivations were grouped in themes:
  - o Utilitarian motivations
  - o Hedonic motivations
  - o Social motivations

The subsequent sections looked at the three main themes related to three main constructs of the research:

- Customer perceived value
- Customer satisfaction and
- Customer engagement

In each of the sections of the survey, each statement response measured on a five-point Likert scale ranging responses from (1)'Not at all important' to (5) 'absolutely', which was adapted from Dovaliene, Masiulyte and Piligrimiene (2015). The Likert scale method was recommended and used in Dessart, Veloutsou and Morgan-Thomas (2016), as appropriate for this type of research.

4.4.1 Sample Size

Normal distributions are generated from a minimum of 30 responses according to the central limit theorem.

4.4.2 Data Distribution

An email containing the link to participate, to the survey was emailed to 300 people

44

requesting their participation. On accessing the online survey, consent from the participant was required for them to continue with the survey. The survey provided each participant with the option of opting out at any point during the survey with no penalties or punitive action incurred.

4.4.3 Data Collection

4.4.3.1 Data Collection Survey

The researcher adapted an existing questionnaire for the purposes of the study. The questionnaire was adapted to suit the research more appropriately. The link to the survey was distributed to potential respondents by electronic mail. The survey was constructed to respond to the research objectives of testing if a relationship exists between:

- Customer satisfaction and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations
- Perceived customer value and
    - Utilitarian motivations and
    - Hedonic motivations
    - Social motivations
- Customer engagement and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations and engagement

Lefever, Dal and Matthiasdottir (2007) in conducting research on online data surveys, found that the collecting of research data through traditional methods such as paper-and-pencil, proved to be costly and time consuming. In some cases it may require undertaking physical visits for data collection. They recommended online surveys for data collection. Online survey were deemed to efficiently and economically collect data within short time frames.

4.4.3.2 Section 1: Utilitarian Motivation [Question 1 – 5]

This section consists of five questions to ascertain the extent to which the respondent felt that the utilitarian motivation the sub-constructs stated were important to them

45

when engaging with mobile applications.

The statements required the respondent to rate their responses, based on a scale of one to five. The statements the respondents had to answer were describing the functional reasons for engaging with particular applications.
The objective of the statements was to ascertain the extent that the customer felt the use of mobile applications was practical and useful to them.

4.4.3.3 Section 2: Social Motivation [Question 6 – 8]

This section consists of three questions to ascertain the extent to which the respondent felt that the social motivation the sub-constructs stated. The statements required the respondent to rate their responses, based on a scale of one to five.

The statements the respondents had to answer were describing the need or requirement of the customers to interact with other customers or people for social.
The objective of the social motivation scale, adapted from Y. H. Kim et al. (2013), was to ascertain how important the constructs of social motivation were to them.

4.4.3.4 Section 3: Hedonic Motivation [Question 9 – 10]

This section consists of two questions to ascertain the extent to which the respondent agreed with the hedonic motivation the sub-constructs provided. The statements required the respondent to rate their responses, based on a scale of one to five.

The objective of the statements was to ascertain if the customer derives pleasure from their use of mobile applications. And if they do derive pleasure, to what extent.
The scale utilised for measuring hedonic motivation as a driver of customer engagement was adapted from Y. H. Kim et al. (2013) and consisted of two items.

4.4.3.5 Section 4: Perceived Value [Question 11 – 13]

This section consists of three questions to ascertain the extent to which the respondent agreed with the perceived value the sub-constructs provided. The statements required the respondent to rate their responses, based on a scale of one to five.
The statements the respondents had to answer were to ascertain the customer's perceived benefit from using the mobile applications.

4.4.3.6 Section 5: Customer Satisfaction [Question 14 – 16]

This section consists of three questions to ascertain the extent to which the respondent agreed with the customer satisfaction the sub-constructs provided. The statements required the respondent to rate their responses, based on a scale of one to five.

The statements the respondents had to answer were to ascertain to what extent the use of mobile applications meet or surpass the customer's expectation. The three statements utilised to ascertain customer engagement with the use of mobile applications was adapted from Y. H. Kim et al. (2013).

4.4.3.7 Section 6: Customer engagement [Question 17 – 19]

This section consists of three questions to ascertain the extent to which the respondent agreed with the customer engagement of the sub-constructs provided. The statements required the respondent to rate their responses, based on a scale of one to five.
The statements the respondents had to answer were to ascertain if the customer is realising value from the mobile application.

A scale utilised by Y. H. Kim et al. (2013) was adapted to measure customer engagement with mobile applications. Three items were utilised to ascertain customer engagement.

4.5 Data Analysis and Statistical Testing

All responses were checked for completeness.
The survey was distributed electronically to 300 respondents, 182 responses were received. And 134 questionnaires were completed within the required time frame. The 134 responses were then utilised to continue with the research analysis. Three responses were received after the cut off time and did not form part of the analysis.

The following tests were used in the research:

4.5.1 Reliability and validity of the response of the questionnaire

4.5.1.1 Cronbach's Alpha

Cronbach's Alpha is a coefficient that was used to test how well the various constructs within the main theme measure consistency or reliability. It tests the average correlation of the questions or statements in the survey.

Cronbach's alpha is calculated among the set of variables used in the factor analysis to determine the reliability of those questions for measuring a single construct, (Cronbach, 1951).

A result of 0.7 from the Cronbach alpha test has been stated as the benchmark level to be an acceptable outcome, (Mithas, Krishnan & Fornell, 2005). Although if the result is within the 0.60 -0.95 range, it is deemed to be within the acceptable limits and can be used for the hypothesis testing.

The main mechanisms factor analysis and confirmatory factor analysis (CFA) were performed to ensure the reliability and validity of the research survey. An output level is deemed acceptable when each of the construct items have a score output of above 0.5.

Reliability

Engagement motivation

Each of the sub-constructs of the Utilitarian, Social and Utilitarian motivation were tested for reliability. The constructs for perceived value and customer satisfaction were also tested for reliability using Cronbach's Alpha.

Cronbach's alpha is expected to increase when the correlations between the items under each construct increase, according to Wang et al. (2015) and further studies by Dovalienė et al. (2016).

4.5.2   Spearman's Correlation Tests

The Spearman correlation analysis was followed to answer the research questions as followed by Dovalienė et al. (2016) in their research.

4.5.3   Correlation analysis

Saunders and Lewis (2012) list the following to analysing data quantitative:

1. Develop meaningful categories or codes to describe the data
2. Decide on an appropriate unit of data to which to attach relevant categories
3. Attach categories to the units of data

This method was then used in a multi-dimensional study by Dovalienė et al. (2016).

4.6 Limitations

The research includes the following limitations:

- The researcher is not a skilled statistician. To this end, has relied on guidance from study material as well as documented views as analysed from the literature review process.

- Due the researcher not having access to the entire population of all customers of mobile applications, the sample size was drawn from available contact details, the researcher had at their disposal. Therefore the sample data may not be fully representative of the overall population.

- In constructing the customer engagement constructs, a predefined, widely used survey instrument was not found for adaptation for this particular study.

- Although the survey was emailed to over 300 people, 198 unique attempts were recorded with 134 responses that were completed and could be then utilised for the study.

- The research looked at specific dimensions around motivation to engage with mobile applications. There could be other motivations for using particular applications that the study does not cover.

- The sampling will also not discriminate between the length of time that a customer has been engaging with mobile applications.

- The study does not differentiate between customers who frequently engage with mobile applications and customers who hardly engage with applications.

- The study also did not differentiate by gender, age, race or geography. So none of this information was collected.

4.7 Chapter Conclusion

The chapter outlined the method of research that was undertaken. The instrument for the data collection, the survey, was explained as well as the objective of each section of the survey. The types of tests that were undertaken were described including the reasons for undertaking the specific tests.

Chapter 5 will set out the results from the analysis undertaken.

5. Chapter 5 – Results

The chapter presents the results generated from the statistical analysis of the data. The reliability and validity tests were applied to variables in order to test each construct.

The null hypothesis was tested using correlation regression.

The results data is displayed and discussed alongside the corresponding research questions.

The previous chapter set out the methodology that was followed by the researcher to investigate the research questions proposed in Chapter 3. This results chapter presents the findings collected from 134 self-administered survey responses.

For each of the questions, the responses were checked for completeness and validity.

The purpose of this research was to explore if a relationship existed between:

- Customer satisfaction and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations
- Perceived customer value and
    - Utilitarian motivations and
    - Hedonic motivations
    - Social motivations
- Customer engagement and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations and engagement

Below are the frequency tables for each of the antecedents that were tested in the survey. For each antecedent responses the frequency of the responses was recorded and presented as a percentage of the section responses.

The objective of the descriptive stats is to condense the data collected to summarise key information collected through the survey.

5.1.1 Reliability Tests

The results of the Cronbach alpha reliability tests were used to evaluate internal consistency of the scale variables in the study were internally consistent and thus reliable for use in the subsequent hypothesis testing procedures.

50

For the variables to be deemed reliable, each group of variables was required to achieve a Cronbach alpha value of between 0.60 and 0.95. A result of 0.7 from the Cronbach alpha test has been stated as the benchmark level to be an acceptable outcome, (Mithas, Krishnan & Fornell, 2005).

The results of the Cronbach alpha that confirmed internal consistency of scales with the coefficients ranging from 0.637 to 0.794 as illustrated in Table 5-1 below. And one result scoring below 0.6 at 0.585.

5.2 Cronbach's Alpha reliability statistics

Table 5-1 : Reliability test outcome

Construct	Cronbach's Alpha	N of Items	Output	Methodology
Utilitarian Motivation	.740	5	The Cronbach Alpha is acceptable.	Factor 1 Utilitarian Motivation is calculated as the average of the 5 items
Social Motivation	.637	3	The Cronbach Alpha is deemed acceptable – slightly below 0.7	Factor 2 Social Motivation is calculated as the average of the three items
Hedonic Motivation	.585	2	The Cronbach Alpha is slightly less than 0.6 but deemed acceptable	Factor 3 Hedonic Motivation is calculated as the average of the two items
Perceived Value	.663	3	The Cronbach Alpha is deemed acceptable – slightly below 0.7	Factor 4 Perceived Value is calculated as the average of the three items
Customer Satisfaction	.742	3	The Cronbach Alpha is acceptable.	Factor 5 Consumer Satisfaction is calculated as the average of the 3 items
Customer Engagement	.794	3	The Cronbach Alpha is acceptable.	Factor 6 Consumer Engagement is calculated as the average of the 3 items

5.2.1.1 Reliability evaluation – Utilitarian motivation

A reliability test on the factors of utilitarian motivation assessing the five statements, which aimed to ascertain the level of importance in the functionality motivation of why the customer would engage mobile applications. The functional reasons of engagement were assessed through a scale rating.

The following statements were utilised tested to test the make-up of utilitarian motivation:

- To explore new and different applications
- To be up to date with new applications
- It increases my skills and knowledge
- Mobile applications keep me organised (reading emails and planning)
- Mobile applications save me time

The test result output from the group of statements was an alpha of 0.740, above the critical value. The elements were accepted as consistent and suitable for use in the subsequent hypothesis testing section.

5.2.1.2 Reliability evaluation – Social motivation

A reliability test on the factors of social motivation assessing the three statements which aimed to ascertain the social motivations driving a customer to engage mobile applications. The motivations for social engagement were assessed through a scale rating.
The test result output from the group of statements was an alpha of 0.637. This result was within the acceptable range. The elements were accepted as consistent and suitable for use in the subsequent hypothesis testing section.

The following statements were utilised tested to test the make-up of social motivation:

- To keep in touch/ share with friends and family
- To be connected and meet people with similar interests
- To share views on a new/ interesting applications

5.2.1.3 Reliability evaluation – Hedonic motivation

A reliability test on the factors of hedonic motivation assessing the two statements,

51

which aimed to ascertain the hedonic motivations driving a customer to engage mobile applications. The motivations for hedonic engagement were assessed through a scale rating.

The test result output from the group of statements was an alpha of 0.585. This was a relatively low reliability rating below the acceptable range, but the value was high enough to be acceptable to continue with it in the hypothesis testing.

The following statements were utilised tested to test the make-up of hedonic motivation:

- To get rest and relaxation
- To enjoy the variety of content that mobile applications offer

5.2.1.4 Reliability evaluation – Customer perceived value

A reliability test on the factors of perceived value assessing the three statements, which aimed to ascertain perceived value the customer, receives from mobile application engagement. The perceived value constructs were assessed through a scale rating.

The test result output from the group of statements was an alpha of 0.663, which is between the acceptable ranges. The constructs were accepted as consistent and suitable for use in the subsequent hypothesis testing section.

The following statements were utilised tested to test the make-up of customer perceived value:

- Using the various mobile apps is enjoyable
- The overall value of my experience using mobile application is outstanding
- Mobile application are good use of my time and money

5.2.1.5 Reliability Evaluation – Customer satisfaction

A reliability test on the constructs of customer satisfaction assessing the three statements, which aimed to ascertain the value the customer, receives from mobile application engagement. The customer satisfaction constructs were assessed through a scale rating.

The test result output from the group of statements was an alpha of 0.742, which is well within the acceptable range. The constructs were accepted as consistent and suitable for use in the subsequent hypothesis testing section.

52

The following statements were utilised tested to test the make-up of customer satisfaction:

- Based on how much you pay on your monthly data cell phone bill, how satisfied are you with your use of the apps you utilise
- Based on your total time spent, how satisfied are you with your use/ engagement of the applications you utilise
- How satisfied are you with using/engaging of the applications you utilise

5.2.1.6 Reliability Evaluation – Customer engagement

A reliability test on the constructs of customer engagement assessing the three statements, which aimed to ascertain if the customer achieved engagement from mobile application engagement. The customer engagement constructs were assessed through a scale rating.

The test result output from the group of statements was an alpha of 0.794, which is well within the acceptable range. The constructs were accepted as consistent and suitable for use in the subsequent hypothesis testing section.

The following statements were utilised tested to test the make-up of customer engagement:

- The ease of use of the applications on your phone increases your use of the applications
- Your experience with an application will determine your continued use of the application in the future
- Usefulness of an application will determine your continued use of the application

Frequency Tables

Utilitarian motivations

Table 5-2: To explore new and different applications

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	4	3.0	3.0
	Somewhat important	25	18.7	21.6
	Neutral	24	17.9	39.6
	Important	53	39.6	79.1
	Extremely important	28	20.9	100.0
	Total	**134**	**100.0**	

Table 5-3: To be up to date with new applications

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	6	4.5	4.5
	Somewhat important	37	27.6	32.1
	Neutral	26	19.4	51.5
	Important	48	35.8	87.3
	Extremely important	17	12.7	100.0
	Total	**134**	**100.0**	

Table 5-4: It increases my skills and knowledge

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	4	3.0	3.0
	Somewhat important	28	20.9	23.9
	Neutral	28	20.9	44.8
	Important	52	38.8	83.6
	Extremely important	22	16.4	100.0
	Total	**134**	**100.0**	

Table 5-5: Mobile applications keep me organised

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	3	2.2	2.2
	Somewhat important	14	10.4	12.7
	Neutral	21	15.7	28.4
	Important	54	40.3	68.7
	Extremely important	42	31.3	100.0
	Total	**134**	**100.0**	

Table 5-6: Mobile applications saves me time

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	3	2.2	2.2
	Somewhat important	7	5.2	7.5
	Neutral	17	12.7	20.1
	Important	62	46.3	66.4
	Extremely important	45	33.6	100.0
	Total	**134**	**100.0**	

Social motivation

Table 5-7: To keep in touch or share information with friends and family

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	4	3.0	3.0
	Not much	8	6.0	9.0
	It makes no difference	10	7.5	16.4
	Somewhat agree	56	41.8	58.2
	Absolutely	56	41.8	100.0
	Total	**134**	**100.0**	

55

Table 5-8: To be connected with people

To be connected and meet new people and meet people with similar interests

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	5	3.7	3.7
	Not much	26	19.4	23.1
	It makes no difference	23	17.2	40.3
	Somewhat agree	50	37.3	77.6
	Absolutely	30	22.4	100.0
	Total	**134**	**100.0**	

Table 5-9: To share views on a new or interesting applications

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	20	14.9	14.9
	Not much	41	30.6	45.5
	It makes no difference	26	19.4	64.9
	Somewhat agree	37	27.6	92.5
	Absolutely	10	7.5	100.0
	Total	**134**	**100.0**	

Hedonic motivation

Table 5-10: To get rest and relaxation

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	28	20.9	20.9
	Not much	29	21.6	42.5
	It makes no difference	29	21.6	64.2
	Somewhat agree	37	27.6	91.8
	Absolutely	11	8.2	100.0
	Total	**134**	**100.0**	

56

Table 5-4-2: To enjoy the variety of content that mobile applications offer

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	6	4.5	4.5
	Not much	17	12.7	17.2
	It makes no difference	22	16.4	33.6
	Somewhat agree	62	46.3	79.9
	Absolutely	27	20.1	100.0
	Total	**134**	**100.0**	

Table 5-11: Perceived value

Table 5-5-1: Using the various mobile applications is enjoyable

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	1	0.7	0.7
	Not much	14	10.4	11.2
	It makes no difference	27	20.1	31.3
	Somewhat agree	63	47.0	78.4
	Absolutely	29	21.6	100.0
	Total	**134**	**100.0**	

Table 5-12: Overall value

The overall value of my experience using mobile applications is outstanding

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	3	2.2	2.2
	Not much	13	9.7	11.9
	It makes no difference	29	21.6	33.6
	Somewhat agree	72	53.7	87.3
	Absolutely	17	12.7	100.0
	Total	**134**	**100.0**	

Table 5-13: Mobile applications are good use of my time and money

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	7	5.2	5.2
	Not much	19	14.2	19.4
	It makes no difference	36	26.9	46.3
	Somewhat agree	55	41.0	87.3
	Absolutely	17	12.7	100.0
	Total	**134**	**100.0**	

Customer satisfaction

Table 5-14: Monthly bill satisfaction

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	14	10.4	10.4
	Not much	23	17.2	27.6
	It makes no difference	25	18.7	46.3
	Somewhat agree	60	44.8	91.0
	Absolutely	12	9.0	100.0
	Total	**134**	**100.0**	

Table 5-15: Satisfaction on time spent on mobile applications

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	5	3.7	3.7
	Not much	14	10.4	14.2
	It makes no difference	22	16.4	30.6
	Somewhat agree	73	54.5	85.1
	Absolutely	20	14.9	100.0
	Total	**134**	**100.0**	

Table 5-16: Satisfaction with mobile applications

How satisfied are you with using or engaging of the applications you utilise?

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	1	0.7	0.7
	Not much	9	6.7	7.5
	It makes no difference	18	13.4	20.9
	Somewhat agree	86	64.2	85.1
	Absolutely	20	14.9	100.0
	Total	**134**	**100.0**	

Customer engagement

Table 5-17: Ease of use

The ease of use of the applications on your phone increases your use of the application

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	1	0.7	0.7
	Not much	3	2.2	3.0
	It makes no difference	9	6.7	9.7
	Somewhat agree	65	48.5	58.2
	Absolutely	56	41.8	100.0
	Total	**134**	**100.0**	

Table 5-18: **Experience with mobile application**

Your experience with an application will determine if you continue to use the application in the future

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	1	0.7	0.7
	Not much	4	3.0	3.7
	It makes no difference	2	1.5	5.2
	Somewhat agree	41	30.6	35.8
	Absolutely	86	64.2	100.0
	Total	**134**	**100.0**	

Table 5-19: Usefulness of the mobile application

The usefulness of an application will determine your continued use of the application

		Frequency	Percent %	Cumulative Percent %
Valid	Not at all important	2	1.5	1.5
	Not much	2	1.5	3.0
	It makes no difference	4	3.0	6.0
	Somewhat agree	34	25.4	31.3
	Absolutely	92	68.7	100.0
	Total	**134**	**100.0**	

5.2.2 Descriptive statistics results

The results of descriptive statistics are provided in Table 2 below, showing the means and standard deviations of the main research variables, which is motivations for customer engagement and customer perceived value and satisfaction.

The respondents agreed most frequently agreed with the ranked the elements of customer engagement with the median at 5.

60

Table 5-20: Descriptive statistics

	N	Minimum	Maximum	Median	Std. Deviation
Utilitarian Motivation	134	1.60	5.00	4.00	.74343
Social Motivation	134	1.00	5.00	4.00	.85229
Hedonic Motivation	134	1.00	5.00	4.00	.99362
Perceived Value	134	1.00	5.00	4.00	.74424
Customer Satisfaction	134	1.33	5.00	4.00	.79987
Customer Engagement	134	1.00	5.00	5.00	.66730
Valid N	134				

5.3 Correlation Analysis results

The objective of performing the correlation analysis was to ascertain if a relationship between customer engagement drivers and the engagement with mobile applications did exist. Spearman correlation coefficient was utilised to analyse the results as the data distribution was not normally distributed, Spearman correlation analysis was deemed appropriate. The response options are not scaled nor are the responses continuous data. The response data is categorical and ordinal, as defined by Saunders and Lewis (2012).

Results of correlation analysis are presented in the tables below corresponding to each of the research question tabled.

The purpose of this research was to explore if a relationship existed between:
- Customer satisfaction and
  - Utilitarian motivations
  - Hedonic motivations
  - Social motivations
- Perceived customer value and
  - Utilitarian motivations and
  - Hedonic motivations
  - Social motivations
- Customer engagement and
  - Utilitarian motivations
  - Hedonic motivations
  - Social motivations and engagement,

In the context of mobile applications.

Table 5-21: Summary of correlation results

			Utilitarian Motivation	Social Motivation	Hedonic Motivation	Perceived Value	Customer Satisfaction	Customer Engagement
Spearman's rho	Utilitarian Motivation	Correlation Coefficient	1.000	.560*	.339*	.560*	.363*	.209*
		Sig. (2-tailed)	.	.000	.000	.000	.000	.016
		N	134	134	134	134	134	134
	Social Motivation	Correlation Coefficient	.560*	1.000	.373*	.482*	.196*	.192*
		Sig. (2-tailed)	.000	.	.000	.000	.023	.026
		N	134	134	134	134	134	134
	Hedonic Motivation	Correlation Coefficient	.339*	.373*	1.000	.568*	.297*	.226*
		Sig. (2-tailed)	.000	.000	.	.000	.000	.009
		N	134	134	134	134	134	134
	Perceived Value	Correlation Coefficient	.560*	.482*	.568*	1.000	.463**	.320*
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000
		N	134	134	134	134	134	134
	Customer Satisfaction	Correlation Coefficient	.363*	.196*	.297*	.463*	1.000	.236*
		Sig. (2-tailed)	.000	.023	.000	.000	.	.006
		N	134	134	134	134	134	134
	Customer Engagement	Correlation Coefficient	.209*	.192*	.226**	.320*	.236*	1.000
		Sig. (2-tailed)	.016	.026	.009	.000	.006	.
		N	134	134	134	134	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

5.4 Hypothesis 1

Is there a relationship between the different motivations, (Utilitarian, hedonic and social) of customer engagement for using mobile applications and the perceived value the customer derives from using the application?

5.4.1 Hypothesis 1A

H_0: rUtilitarian motivation - rCustomer perceived value = 0
H_1: rUtilitarian motivation - rCustomer perceived value > 0

Table 5-22: Utilitarian motivation and Perceived value results

			Utilitarian motivation	Perceived value
Spearman's rho	**Utilitarian motivation**	Correlation Coefficient	1.000	.560*
		Sig. (2-tailed)	.	.000
		N	134	134
	Perceived value	Correlation Coefficient	.560*	1.000
		Sig. (2-tailed)	.000	.
		N	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

Utilitarian motivations and perceived customer value were positively correlated, Spearman's $r(134) = .560$, $p < .005$. The null hypothesis is therefore rejected. There is evidence that the relationship that does exist between utilitarian motivations and perceived customer value.

The correlation coefficient result is a positive value, confirming the presence of the relationship between utilitarian motivation and the customer's perceived value.
The value of 0.560 indicates a strong and positive relationship between the customer's perceived value and the utilitarian motivation. At an alpha value of 0.05 this is significant.

63

Figure 4 – Utilitarian motivation and Perceived value
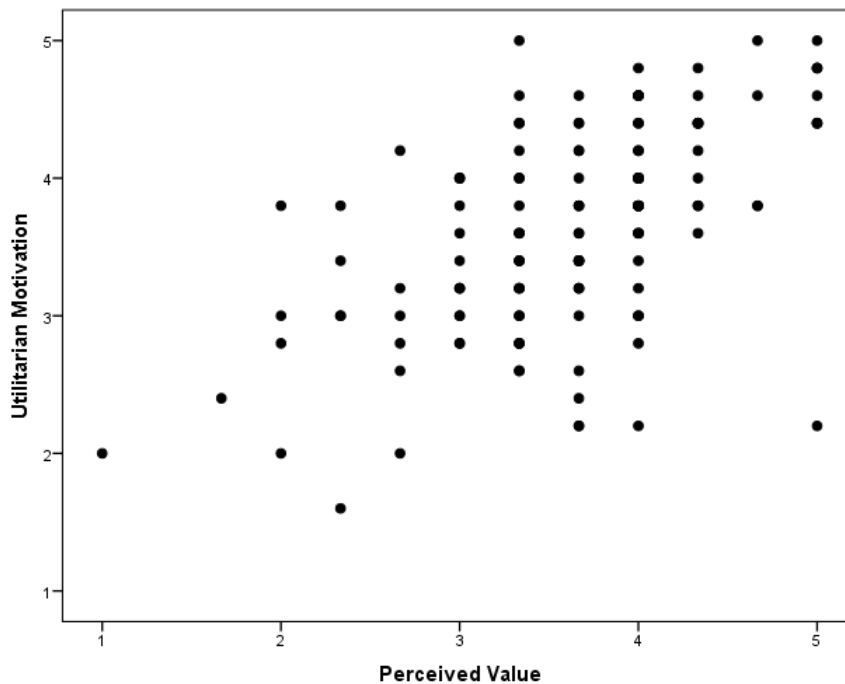
5.4.2   Hypothesis 1B

H0: rSocial Motivation - rCustomer perceived value = 0

H1: rSocial Motivation - rCustomer perceived value > 0

Table 5-23: Hedonic motivation and Perceived value results

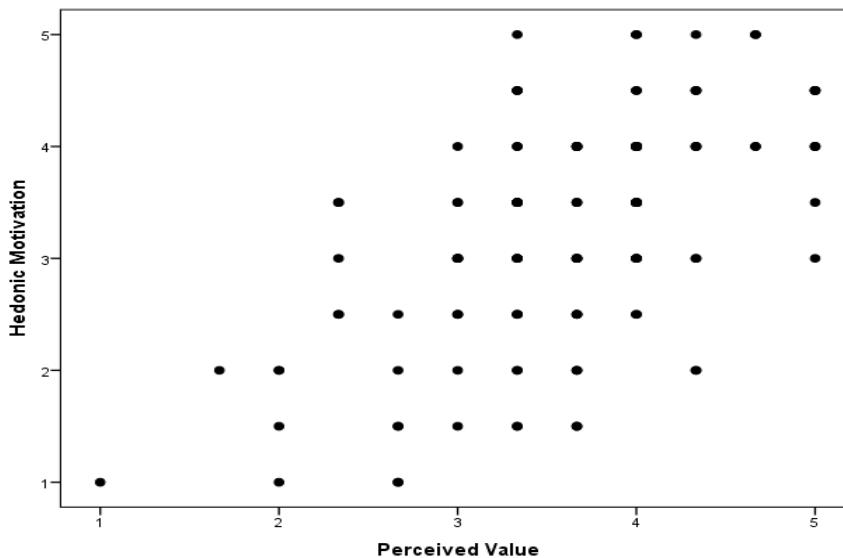|			Hedonic motivation	Perceived value
Spearman's rho	**Hedonic motivation**	Correlation Coefficient	1.000	.568*
		Sig. (2-tailed)	.	.000
		N	134	134
	Perceived value	Correlation Coefficient	.568*	1.000
		Sig. (2-tailed)	.000	.
		N	134	134

*Correlation is significant at the 0.05 level (2-tailed).

Hedonic motivations and perceived customer value were positively correlated, Pearson's $r(134) = .568$, $p < .000$. The null hypothesis is therefore rejected at the 5% confidence level. There is evidence that the relationship that does exist between hedonic motivations and perceived customer value.

The value of 0.568 indicates a strong and positive relationship between the customer's perceived value and the hedonic motivations.

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between hedonic motivation and the customer's perceived value. As the hedonic motivation increases, so does the customer's perceived value derived.

Figure 5 – Hedonic motivation and Perceived value

5.4.3   Hypothesis 1C

H_0: rSocial Motivation - rCustomer perceived value = 0

H_1: rSocial Motivation - rCustomer perceived value > 0

Table 5-24: Social motivation and Perceived value results

|			Social motivation	Perceived value
Spearman's rho	**Social motivation**	Correlation Coefficient	1.000	.482*
		Sig. (2-tailed)	.	.000
		N	134	134
	Perceived value	Correlation Coefficient	.482*	1.000
		Sig. (2-tailed)	.000	.
		N	134	134

*Correlation is significant at the 0.05 level (2-tailed).

66

Social motivations and perceived customer value were positively correlated, Pearson's $r(134) = .482$, $p < .000$. The null hypothesis is therefore rejected at the 5% level. There is evidence that the relationship that does exist between social motivations and perceived customer value.

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between social motivation and the customer's perceived value. As the social motivation increases, so does the customer's perceived value derived.
The value of 0.482 indicates a moderate and positive relationship between the customer's perceived value and the social motivation.

Figure 6 - Social motivation and Perceived value
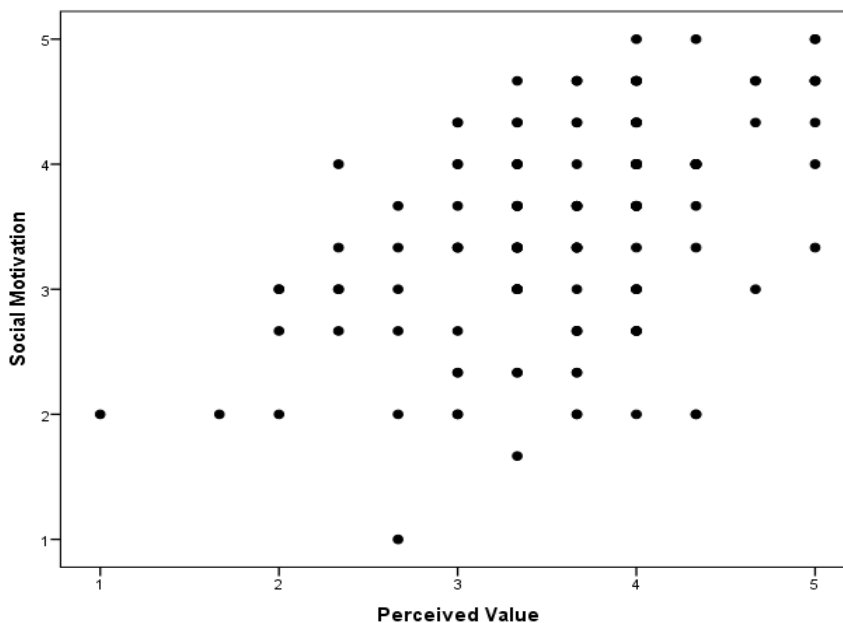
5.5 Hypothesis 2

Does the customer motivations for customer engagement influence the customer satisfaction?

5.5.1   Hypothesis 2A

H_0: rUtilitarian Motivation - rCustomer satisfaction = 0
H_1: rUtilitarian Motivation - rCustomer satisfaction > 0

Table 5-25: Utilitarian motivation and Customer satisfaction results

			Utilitarian motivation	Customer satisfaction
Spearman's rho	**Utilitarian Motivation**	Correlation Coefficient	1.000	.363[*]
		Sig. (2-tailed)	.	.000
		N	134	134
	Customer Satisfaction	Correlation Coefficient	.363[*]	1.000
		Sig. (2-tailed)	.000	.
		N	134	134

Utilitarian motivations and customer satisfaction were positively correlated, Spearman's $r(134) = .363$, $p < .000$. The null hypothesis is therefore rejected at the 5% level.

The null hypothesis is rejected at the 5% level of significance

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between utilitarian motivation and the customer's satisfaction. As the utilitarian motivation increases, so does the customer's satisfaction.

The value of 0.363 indicates a moderate and positive relationship between the customer's utilitarian motivation and the customer's satisfaction.

At an alpha value of 0.05 this is significant, the result of the sigma is less than 0.05 at 0.000, the null hypothesis is rejected.

Figure 7 - Utilitarian motivation and Customer satisfaction
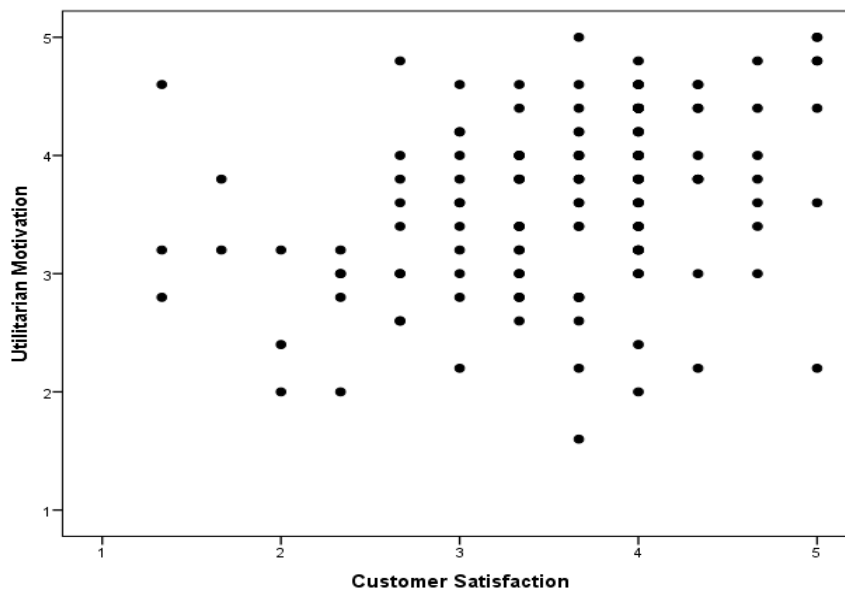
5.5.2 Hypothesis 2B

H_0: rHedonic Motivation – rCustomer's satisfaction = 0

H_1: rHedonic Motivation – rCustomer's satisfaction > 0

Table 5-26: Hedonic motivation and Customer satisfaction results

			Hedonic motivation	Customer satisfaction
Spearman's rho	**Hedonic Motivation**	Correlation Coefficient	1.000	.297*
		Sig. (2-tailed)		.000
		N	134	134
	Customer Satisfaction	Correlation Coefficient	.297*	1.000
		Sig. (2-tailed)		.000
		N	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

Hedonic motivations and customer satisfaction were positively correlated, Spearman's $r(134) = .297$, $p < .000$. The null hypothesis is therefore rejected at the 5% confidence level. There is evidence that the relationship that does exist between hedonic motivations and perceived customer value.

69

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between hedonic motivation and the customer's satisfaction. As the hedonic motivation increases, so does the customer's satisfaction.

The value of 0.297 indicates a moderate and positive relationship between the customer's hedonic motivation and the customer's satisfaction.

At an alpha value of 0.05 this is significant, the result of the sigma is less than 0.05 at 0.000, the null hypothesis is rejected.

Figure 8 - Hedonic motivation and Customer satisfaction
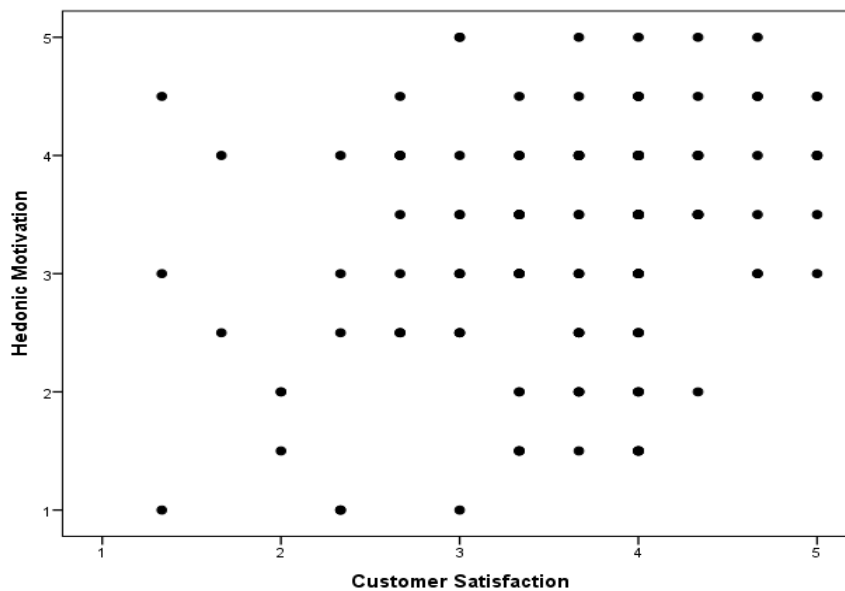
5.5.3   Hypothesis 2C

H_0: rSocial Motivation - rCustomer satisfaction = 0

H_1: rSocial Motivation - rCustomer satisfaction > 0

Table 5-27: Social motivations and Customer satisfaction results

|			Social motivation	Customer's satisfaction
Spearman's rho	**Social motivation**	Correlation Coefficient	1.000	.196*
		Sig. (2-tailed)	.	.000
		N	134	134
	Customer satisfaction	Correlation Coefficient	.196*	1.000
		Sig. (2-tailed)	.000	.
		N	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

Social motivations and perceived customer value were positively correlated, Spearman's $r(134)$ = .196, $p < .000$. The null hypothesis is therefore rejected at the 5% confidence level. There is evidence that the relationship that does exist between social motivations and customer satisfaction.

The value of 0.196 indicates a moderate and positive relationship between the customer's social motivation and the customer's satisfaction.

At an alpha value of 0.05 this is significant, the result of the sigma is less than 0.05 at 0.23, the null hypothesis is rejected.

71

Figure 9 - Social motivation and Customer satisfaction
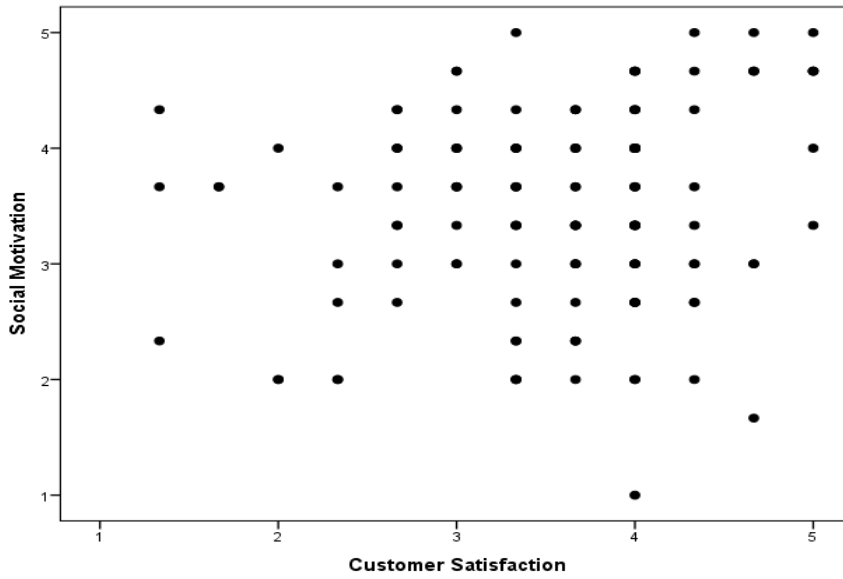
5.6 Hypothesis 3

Does the customer motivation to engage with a mobile application influence the customers' engagement?

5.6.1 Hypothesis 3A

H_0: rUtilitarian motivation - rCustomer engagement = 0

H_1: rUtilitarian motivation - rCustomer engagement > 0

Table 5-28: Utilitarian motivation and Customer engagement

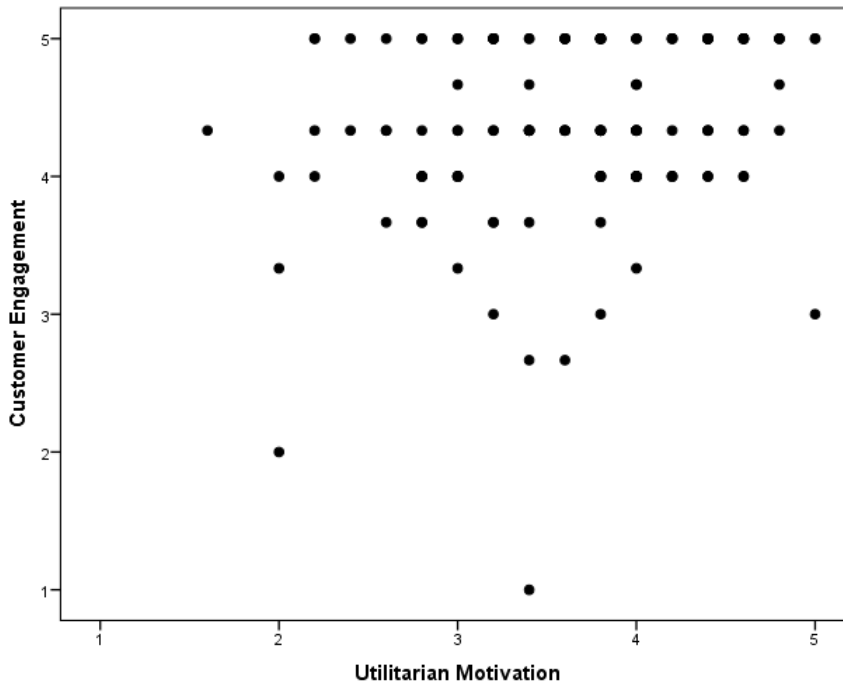|			Utilitarian motivation	Customer's engagement
Spearman's rho	Utilitarian motivation	Correlation Coefficient	1.000	.215*
		Sig. (2-tailed)	.	.013
		N	134	134
	Customer engagement	Correlation Coefficient	.215*	1.000
		Sig. (2-tailed)	.013	.
		N	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

Utilitarian motivations and customer satisfaction were positively correlated, Spearman's r(134) = .215, p < .013. The null hypothesis is therefore rejected at the 5% confidence level. There is evidence that the relationship that does exist between utilitarian motivations and customer satisfaction.

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between utilitarian motivation and the customer's engagement. As the social motivation increases, so does the customer's perceived value derived.
The value of 0.215 indicates a weak but positive relationship between the customer's engagement and the utilitarian motivation.

At an alpha value of 0.05 this is significant, the result of the sigma is less than 0.05 at 0.013, the null hypothesis is rejected.

Figure 10 - Utilitarian motivation and Customer engagement

5.6.2   Hypothesis 3B

H_0: rHedonic motivation - μCustomer engagement = 0

H_1: rHedonic motivation - μCustomer engagement > 0

Table 5-29: Hedonic motivation and Customer engagement

			Hedonic motivation	Customer's engagement
Spearman's rho	**Hedonic motivation**	Correlation Coefficient	1.000	.210*
		Sig. (2-tailed)	.	.015
		N	134	134
	Customer engagement	Correlation Coefficient	.210*	1.000
		Sig. (2-tailed)	.015	.
		N	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

Hedonic motivations and customer satisfaction were positively correlated, Spearman's r(134) = .210, p < .0150. The null hypothesis is therefore rejected at the 5% level.

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between hedonic motivation and the customer's engagement. As

74

the hedonic motivation increases, so does the customer's engagement.

The value of $r(134) = .215$ indicates a weak but positive relationship between the customer's engagement and the hedonic motivation.

At an alpha value of 0.05 this is significant, the result of the sigma is less than 0.05 at 0.015, the null hypothesis is rejected.

Figure 11 - Utilitarian motivation and Customer engagement
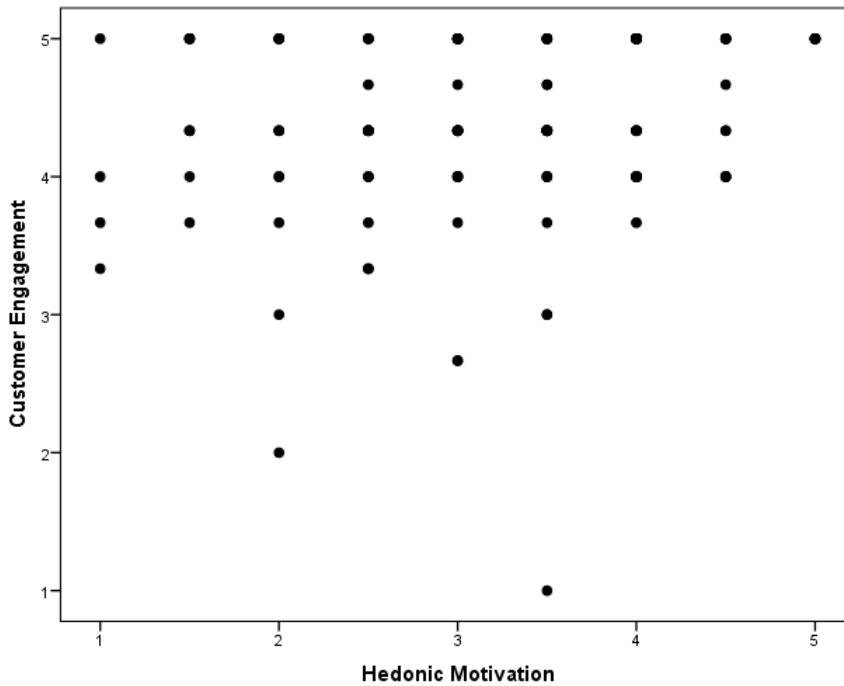
5.6.3   Hypothesis 3C

H_0: rSocial motivation - rCustomer engagement = 0
H_1: rSocial motivation - rCustomer engagement > 0

Table 5-30: Social motivation and Customer satisfaction results

|			Social motivation	Customer's engagement
Spearman's rho	**Social motivation**	Correlation Coefficient	1.000	.235*
		Sig. (2-tailed)	.	.006
		N	134	134
	Customer engagement	Correlation Coefficient	.235*	1.000
		Sig. (2-tailed)	.006	.
		N	134	134

*. Correlation is significant at the 0.05 level (2-tailed).

The null hypothesis is rejected at the 5% level of significance.

The correlation coefficient result is a positive value, confirming the presence of the positive relationship between social motivation and the customer's engagement. As the social motivation increases, so does the customer's engagement.

The value of 0.235 indicates a weak but positive relationship between the customer's engagement and the hedonic motivation. At an alpha value of 0.05 this is significant, the result of the sigma is more than 0.05 at 0.006, the null hypothesis is rejected.

Figure 12 - Utilitarian motivation and Customer engagement

77
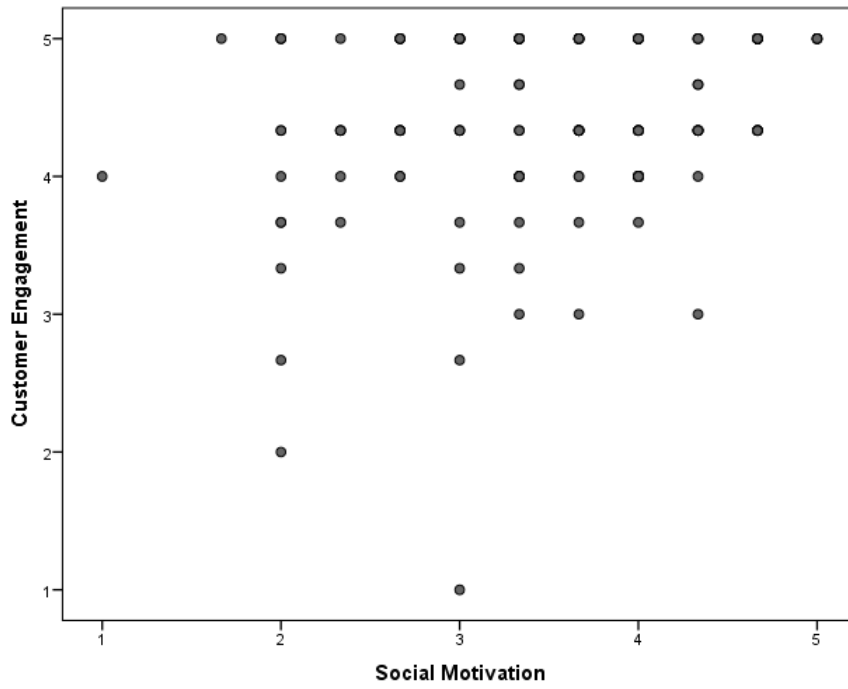
6. Analysis of results

The objective of the study was to ascertain the existence of relationships between the three identified motivations to engage with the value the customer perceives from the engagement. The stud also set out to establish if there was a relationship between the three motivations with customer satisfaction.

The preceding chapter presented the results from the quantitative study undertaken. The results presented were from 134 respondents who completed the self-administered online survey distributed. To qualify to form part of the study, respondents were required to own or have regular access to a smartphone or a tablet device and have used mobile applications.

The survey consisted of 19 questions, grouped into constructs making up each theme. For each of the constructs, sub-constructs were created to build up to the main construct. The states building the constructs:

1. **Utilitarian motivation;**
   a. To explore new and different applications
   b. To be up to date with new applications
   c. It increases my skills and knowledge
   d. Mobile applications keep me organised (reading emails and planning)
   e. Mobile applications save me time

2. **Social motivation;**
   i. To keep in touch or share with friends and family
   ii. To be connected and meet people with similar interests
   iii. To share views on a new or interesting applications

3. **Hedonic motivation;**
   i. To get rest and relaxation
   ii. To enjoy the variety of content that mobile applications offer

4. **Perceived value;**
   a. Using the various mobile apps is enjoyable
   b. The overall value of my experience using mobile applications is outstanding
   c. Mobile applications are good use of my time and money

5. **Customer satisfaction;**
   a. Based on how much you pay on your monthly data cell phone bill, how satisfied are you with your use of the applications you utilise
   b. Based on your total time spent, how satisfied are you with your use or engagement of the applications you utilise?
   c. How satisfied are you with using or engaging of the applications you utilise?

6. **Customer engagement**
   a. The ease of use of the applications on your phone increases your use of the applications
   b. Your experience with an application will determine your continued use of the application in the future
   c. Usefulness of an application will determine your continued use of the application

This chapter presents the analysis of the findings with regards to:
- Customer satisfaction and
  - Utilitarian motivations
  - Hedonic motivations
  - Social motivations
- Perceived customer value and
  - Utilitarian motivations and
  - Hedonic motivations
  - Social motivations
- Customer engagement and
  - Utilitarian motivations
  - Hedonic motivations
  - Social motivations and engagement,

The findings in Chapter 5 were analysed in this chapter in line with the research questions as set out in Chapter 3. Chapter sets out the findings in tabular format as well as graphical representation of the findings.

The analysis of the results were analysed in context of the literature that was reviewed in Chapter 2 of this paper.

79

6.1 Research Question 1

Does the customer motivation to engage mobile applications influence the perceived value the customer derives from the engagement?

6.1.1 Hypothesis 1A

Utilitarian motivation influences the customer's perceived value.

The findings confirm the existence of a relationship between utilitarian motivation an customer perceived value. The results are graphically represented in Figure 4 confirm the positive relationship.

The result findings corroborate the findings of Y. H. Kim et al. (2013), who concluded in their research that utilitarian motivation has a strong positive relationship with the value the customer perceived to be receiving from the engagement.

The results indicate that customer perceived a high level of value when they engage with applications that fulfil a useful purpose such as scheduling tasks and activities. Or making them more efficient in executing their tasks. This supports the alternative hypothesis.

The respondents indicated that their motivation to engage with mobile applications was driven by the application's ability to save the user time. This finding was confirmed in literature by Verhagen et al. (2012). In addition, Y. H. Kim et al. (2013) further noted in their study that users generally found that the knowledge that smartphones are ubiquitously available does increase their usability and saves the user's time. The customer perceives this as value due to their time investment in engaging with the application.

Customers are using various mobile applications to execute different tasks that enable them to be more efficient such as searching for information where ever they may be, paying their purchases as well as navigating maps for directions when driving.

Xu et al. (2015) in their research that revealed that the customers perceived this value when they engaged with utilitarian applications that conveyed information in a timely fashion.

80

6.1.2 Hypothesis 1B

Hedonic motivation does influence the customer's perceived value.

The results of the survey confirm the existence of a relationship the hedonic motivators and the value the customer perceives when the motives have been fulfilled.

The results are graphically represented in Figure 5 confirm the positive relationship. The null hypothesis is then rejected.

Customers who have their hedonic motivations met through using applications that deliver hedonic benefits do perceive customer value, based on the output of the survey.

The results indicated there is a strong relationship between the customer's perceived value and the two elements used to define hedonic motivation.

More of the respondents were motivated by the enjoyment the variety of content that mobile applications offered. More of the respondents did not believe that attainment of rest and relaxation motivated them to engage with mobile applications.

They then confirmed that enjoyment is a critical element in the assessment of the customer perceived value.

The study carried out by Moldovan et al. (2015) supported the findings. The study by the researchers, proposed that there were four types of motivations to drive customers to engage with mobile applications. In the engagement of these applications, the customers seek applications they can derive pleasure and entertainment.

Customers perceived value for what they would pay for, based on how much the application engagement provided rest, relaxation and enjoyment. These elements were met, then the cost of the mobile application in terms of financial or sacrifice is deemed to have been a worthwhile exchange for the cost sacrifice.

In some instances a customer would equate the perceived value received against other forms of cost and not only the financial cost of the application.

The customer would factor in the time sacrificed to learn to use the application or the time sacrificed from other activities.

81

6.1.3 Hypothesis 1C

Social motivation influences the customer's perceived value.

The output from the survey indicate that there exists a relationship between social motivation factors and the customer's perceived value. The results are graphically represented in Figure 6 confirm the positive relationship. Based on the result of the correlation coefficient analysis, the relationship although positive is not a strong relationship.

Almost all the respondents felt that their motive to maintain relations with existing friends, develop contacts with new friends that have similar interests with them as well as to keep contact with family. These motivations were driven by the desire to share to share information with the friends and family.

Dessart et al. (2016a), concluded that engagement by its nature social and interactive. They support this with evidence that customers have a desire to interact with others through their use of mobile technology applications, community interaction or to use the platform as a communication medium.

And based on how best the engagement fulfilled their need to engage with friends and family, then they could equate value to the engagement.

6.1.4 Conclusion to research question 1

The output from the study indicate that the perceived value the customer derives from engaging with the mobile application is influenced by their motivation. Based on the correlation coefficient results, utilitarian motivation had the strongest relationship with perceived value from the customer.

The findings of the positive customer motivation influencing the customer's engagement confirms the alternative hypothesis. The strong positive relationship confirms that the motivation of a customer does influence their engagement with the mobile applications. This confirms the findings of Y. H. Kim et al. (2013). It can be concluded that the customer who is motivated by utilitarian elements does find perceived value in engaging with mobile applications.

These findings Y. H. Kim et al. (2013) highlight that by understanding a customer's motivation to engage in mobile applications, this will lead companies to understand

82

their customer behaviours. The customer's motivation to use mobile applications is driven by motivations namely functional, hedonic and social.

The results indicate that the customer motivation to engage with mobile applications is influenced by various motivations. More significantly, the customer's hedonic motivation based on the results of the survey. There are various other motivations that impact on customer engagement, but in literature reviewed, functional (aligned to the features of utilitarian motivations) motivations; entertainment (aligned to hedonic motivations) motivations and communication (aligned to social motivations) motivations seems to be analysed more than the other motivations. The literature reviewed supports the analysed results.

The value the customer perceives is influenced by a number of factors, and not only the financial sacrifice made to obtain the application.
In understanding consumer behaviour, a consumer may be willing to pay for a service or product that responds to their motives.

It would be a challenge to equate a unit of perceived value against a rand value – how much value can one receive for a specific rand value. And yet a customer would be willing to pay.

Application developers who are looking to the revenue from the application download or application usage would be at an advantage if they understood the value drivers for the customers. By incorporating those insights into their application, they are then able to respond to the customer motives. And this response would be in the form of money paid for the application.

6.2 Research question 2

Does the customer motivations for customer engagement influence the customer satisfaction?

6.2.1 Hypothesis 2A

Utilitarian motivation influences customers' satisfaction.

The result findings of the survey confirm that the existence of the relationship between

83

the motivations meeting the utilitarian needs o f a customer and the satisfaction derived thereafter. The results are graphically represented in Figure 7 confirm the positive relationship.

The ability of the application to satisfy the need for the customer to keep organised, and allowing the customer to explore new and different applications will impact on the customer satisfaction. In additions to these, the ability of the application to increase the customer's knowledge will impact the customer satisfaction.

The survey results showed that more respondents agreed that exploring new and different applications was important or extremely important to them. This was followed by the ability of the application to increase their skills and knowledge. The utilitarian motives are related to increasing the customer's effectiveness as well as efficiencies as confirmed in findings by Viswanath Venkatesh et al. (2012).

Although this particular research did not delve into the type of mobile applications that would fulfil the utilitarian motive, but in the research by Viswanath Venkatesh et al. (2012), discussed the importance of mobile applications delivering content that the customer finds relevant and useful. They deemed it important that the customer realises what they expect from a mobile application. This realisation impacts the satisfaction derived from the engagement.

6.2.2 Hypothesis 2B

Hedonic motivation influences customers' satisfaction.

The survey confirm the existence of a positive relationship between hedonic motivation and the customer's satisfaction. The results output state that although there is a positive relationship between the two elements, it is a weak relationship. The results are graphically represented in Figure 8 confirm the positive relationship.

The survey result imply that the fulfilment of the hedonic motivation does not greatly influence the customer satisfaction. This does not fully support the findings of Chang and Chen (2015) who in their research discovered and confirmed that hedonic motivations strongly influences customer satisfaction.

In contradiction to this view and supporting the results of the survey, hedonic

84

motivation has been defined as the fun or pleasure a customer derives from engaging with a mobile application according to Hsiao et al. (2016).

The fun and pleasure derived they further state, plays a significant role in customer satisfaction. Yang *et al.* (2016) further agree with this view and support the alternative hypothesis findings in stating that the fulfilment of the hedonic motivation creates enjoyment which leads to user satisfaction.

6.2.3   Hypothesis 2C
Social motivation influences customers' satisfaction.

The findings of the survey confirm the existence of a relationship between and social motivation and the satisfaction the customer derives from having their social motives met. This relationship based on the survey results is a weak relationship. The results are graphically represented in Figure 9 confirm the positive relationship.

Customer satisfaction values are impacted to a lesser degree by the engagement with mobile applications.

6.2.4   Conclusion to research question 2
Customer satisfaction with mobile application engagements provides value to customers which progressively leads to improved customer engagement with the mobile application. This continued use of mobile applications, continued engagement decreases the possibility of the customer deflecting, (Thakur et al., 2011).

The result of the customer experiences their use of the mobile application enhances their perceived value. The results of the survey are confirmed by the research carried out by Tojib and Tsarenko (2012). By understanding the value drivers for the engagement, such as the motivations, the customer value can be increased based on the mobile application experience meeting their need.

Customers base their engagement decision on the basis of their motivational beliefs and needs, that using a particular mobile application will provide certain benefits during and after the engagement experience, (Tojib & Tsarenko, 2012).

Utilitarian motivation and hedonic motivation have an impact on the customer's

85

resultant satisfaction.

The fulfilment of the customer's utilitarian and hedonic motivations, impacts the customer's satisfaction. This result has been confirmed in studies undertaken by Xu et al. (2015). In their literature they confirmed that these motivations actually have a positive effect on the satisfaction gained by the customer. They further found that the more the utilitarian and hedonic motivations are satisfied, the greater the customer satisfaction is.

Customer's motivation influences the satisfaction derived from engaging with mobile applications. The survey results support the view that if the customer is motivated to engage with mobile applications, this would impact their satisfaction. The consumer behaviour literature has documented that both utilitarian and hedonic motivations have an influence on a customer's continued use, which implies customer satisfaction.

6.3 Research Question 3
Does the customer motivation to engage with a mobile application influence the customers' engagement?

6.3.1   Hypothesis 3A
Utilitarian motivation influences customers' engagement.

The outcomes of the study find that there exists a relationship with the functional motivations and the customer engagement. The null hypothesis is rejected. The results are graphically represented in Figure 10 confirm the positive relationship. The objective of the research was to ascertain the existence of the relationship. With the correlation coefficient output if .215, the relationship is deemed weak.

Siamagka, Christodoulides, Michaelidou and Valvi (2015) in the research concluded that application functionality of the application is concerned with the level of trust the customer invests in the application supporting and improving the task the customer has to execute. When reviewing the ease of use of the application, the customer considered the effort required to use the application, such as any additional skills the customer will need to acquire to be able to effectively engage with the application. While perceived ease of use refers to the degree to which one believes that using the

86

technology will be free of effort.

The usefulness and ease of use of a mobile application drives engagement based on the findings of (Siamagka et al., 2015). The usefulness refers to the how practical the application is in executing the customer's requirement. If the customer is engaging an application to search for road directions, there are levels of expected output from the application such as the directions in a simple and understanding manner to meet the objective of the engagement, (Kim et al., 2016).

Further to this, a customer considering if they should engage with a mobile application, it is plausible that they assess whether it is useful for doing what he or she wants to do such as scheduling a meeting.

Therefore, an application's perceived practicality will directly impact the customer's motivation to interact with the application, (Prebensen et al., 2013). Chang et al. (2011), examined adoption elements and highlighted that customers adopted mobile applications that fulfilled utilitarian motivations, namely, "learn about unknown things, and search for information and source useful information". Which aligns with the survey findings.

6.3.2 Hypothesis 3B
Hedonic motivation influences customers' engagement.

The results from the study indicate that hedonic motivation and customers' engagement do have a relationship. The study confirms a relationship albeit a weak relationship between hedonic motivators with customer engagement. The results are graphically represented in Figure 11 confirm the positive relationship.

The objective of the research was to ascertain the existence of the relationship. With the correlation coefficient output of $r(134) = .215$ the relationship is deemed weak. The null hypothesis is then rejected.
Hedonically motivated activities result from entertaining, stimulating and pleasant, and satisfying essential needs.

The research findings are in agreement with the literature, (Kim et al., 2016), that the hedonic motivation has been observed as a key determinant of how customers make

87

their engagement decisions.

Although in findings by Venkatesh et al. (2012), in studying the customer information system engagement, utilitarian features such as business applications as well as hedonic features such mobile games and entertainment applications did drive engagement and respond to the customer motivation to engage in these types of applications.

A customer intending to engage with a mobile application may assess whether the application is fun to use and able to generate pleasure for them such as a game application. It confirms that the hedonic motivation is associated with enjoyment which can result in increased engagement with the application, (Yang et al., 2016).

In contrast the research findings from Dovalienė et al. (2016) illustrated that hedonism experienced when using mobile applications did not have a significant impact on customer engagement in mobile applications. They also concluded that in as much as customers felt hedonism in engaging with mobile applications, hedonic motivation was not a key driver for engagement.

Although engaging with a particular mobile application may result in a pleasant experience, fulfilling a hedonic motivation, Yang et al. (2016) do caution that this hedonic fulfilment, a customer may engage further and likely to have repeated usage habits. They provide evidence pointing that this repeated usage or high repeated engagement may result in a version of addiction. It is evident that not all hedonic motivations are positively inclined.

The research undertaken in this study, did not interrogate the respondents on the amount of time the respondents did spend engaging with mobile application nor did the research interrogate the frequency of the engagements.

6.3.3   Hypothesis 3C
Social motivation influences customers' engagement.

The output from the survey indicate that there exists a relationship between the social motives of the customer and their engagement. The results are graphically represented in Figure 12 confirm the positive relationship. Based on the result of the correlation

88

coefficient analysis, the relationship although positive is not a strong relationship.

The output of the research confirm that there is a relationship between social motivation and customer engagement. The objective of the research was to ascertain the existence of the relationship. With the correlation coefficient output of $r(134) = .235$, the relationship is deemed weak. The null hypothesis is then rejected. This is somewhat not fully aligned to the literature reviewed which emphasise the increasing prominence of application that would satisfy the social motivation, such as Facebook and Twitter.

The literature findings actually point to social motivations exhibiting a stronger relationship with engagement based on claims made by Yang et al.(2016) regarding the popularity of Facebook as a tool to connect with friends and family. This is further confirmed by (Park et al., 2016) who noted the need for users to engage socially through the varied communication applications, increased satisfaction.

The survey results confirmed that people used applications to connect and meet people with similar interests. The responses agreed in the majority on this view. Maintaining contact and meeting people with similar interests are the core objectives of social applications such as Facebook.

The consolidated by Park et al., (2016) noted that discovered that utilising the texting application, played a critical psychological part in sustaining communal interactions amongst teenagers who agonised and felt awkward when faced with forms of social contact with others. They also found that people who suffered from various anxiety challenges preferred to use these forms of communication tools rather than traditional voice calling when communicating with people that are more expressive. The more reserved people preferred using texting applications to meet their need for social interaction.

The survey results confirmed the importance of utilising the communication applications to keep in touch or share information with friends and family with the respondents in the majority stating they strongly agreed and somewhat agreed with the statement.

A user is able to communication, maintain connections with friends and family, and

89

create new friendship connections through with greater ease whilst using mobile communication applications. This ability fulfils the social motivation the customer may have had prior to the engagement.

The results confirm the study conducted by Lien and Cao (2014), that the motivation to keep in touch with friends and family as well as to make new friends, does indeed drive the customer to engage with particular websites that would enable this engagement such as social media applications. These findings are aligned with the constructs (Chang and Zhu (2011) developed, to define elements for motivation to adopt mobile application usage.

In most instances, social media applications such as Whatsapp and Blackberry Messenger (BBM), where designed with the objective of social connectivity. The application allow users to communication with friends and family as well as share information with friends and family across these applications.

The social media applications, aptly referred to as 'chat apps' have seen rapid growth recently. A case in point is of the Whatsapp application, where over one billion users are reportedly using the application on a monthly basis. And these numbers continue to rise.

6.3.4   Conclusion to research question 3

Xu et al. (2015) found that user experiences that the customer derived usefulness and enjoyment are determinants of customer perceived value, which in turn impact the customer's engagement with the application. The utilitarian motivation and hedonic motivation may be the key factors that influence customer's engagement reason.

The three motivations of engagement that the writer has studied and analysed are supported by the findings of Thakur (2016) stating that customer are motivated to engage with the various mobile applications due to a number of reasons such as communicating with others and keeping social contact with family and friends which is in line with   social motivation. Accessing music supports hedonic motivation and searching for information, executing transactions such as banking or shopping and managing diaries forms part of utilitarian motivations.

The study conducted by Thakur (2016), highlighted a differing motivation for customer

90

to engage with mobile applications. The literature identified time-filler or engaging for fun and enjoyment, as the major motivation for engagement. In effect their findings state that a customer would browse through their mobile applications in the course of their time of leisure and entertainment and not necessarily for a specific purpose.

The finding above differs from the results of the survey conducted for this papers, as survey findings highlighted social motivation as having a stronger relationship with customer engagement than hedonic or utilitarian motivations.

The diverse nature of the mobile applications that satisfy the three motivations analysed, that is the applications fulfilling the utilitarian motivation, searching for information or hedonic, listening to music as well as social, keeping in touch with friends and family, suggests that customers may use a multiple number of applications to fulfil the various motivations simultaneously.

Therefore, it is then a combination of the extrinsic and intrinsic motivations draws the customer to engage with mobile applications.
The study did not enquire to what extent is the combination of the various motivations a driver for mobile application engagement.

With the observed trends of other forms of communication applications namely Whatsapp texting and Viber Calling, utilised maintain connections and relations with friends and family, there seems to be increasing opportunity for application developers to introduce more communication applications. Recently we have seen the introduction of Whatsapp calling, imo and Telegram all of which are applications that appeal to users who are express social motivations.

6.4 Conclusion

Xu et al. (2015) determined that engagement motivations, specifically hedonic motivation and satisfaction with the application, influence the customer's engagement with the application as well as future engagement with the application.

Thakur (2016), further confirmed this in their study that customer look to applications that offer convenience in executing their tasks. Convenience they further analysed as the saving of the cost of time for the customer or user.

91

According to Y. H. Kim et al. (2013), by understanding a customer's motivation to engage in mobile applications, this will lead companies to understand their customer behaviours. The customer's motivation to use mobile applications is driven by motivations namely functional, hedonic and social.

Therefore from the research results, it can be concluded that the customer's engagement will be influenced by their motivation to engage with the application.

The ability to of the application to keep the user organised was also deemed important. The result output in **Table 5-5**, indicate the majority of the respondents, 96 out of the 134 respondents, (72%), rated this measure as Important and Extremely important.

The ability to keep up to date with the new applications coming into the market was not deemed as important as the other reasons for users to engage with mobile applications as reported in Table **5-3**. Of the 134 respondents, (49%), 65 deemed this measure to be Important and Extremely important.

An analyst house, Informa, stated that in 2012, smartphone users exchanged an average of 37 billion messages daily. Less than half of these messages were routed through the traditional carrier-based SMS services. Informa states that 19 billion messages were sent each day from mobile chat apps, some of the more popular ones being, BlackBerry Messenger, ChatOn, iMessage, Facebook Messenger, Google Talk/Voice, Kik, Skype, Viber and WhatsApp.

It is important to state that based on the literature, the success of the application can be assessed in various manners and not only by the amount of direct revenue has it generated for the developer or company from the direct sales of the application.

Some of the applications available are not 'for sale' application, but have a different objective for the company. Some of the applications that do not require actual money to be paid for them, but are an extension of the company strategy.

Banking services applications are generally not paid for directly, but their success is based on the usage it drives or the purpose it serves in enabling an additional more efficient channel for the bank customer to access the bank services.

7. Conclusion and Recommendations

In Chapter 1, the objectives of undertaking this research study were highlighted and discussed.

The objective of the study was to establish if a relationship existed between:

- Customer satisfaction and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations
- Perceived customer value and
    - Utilitarian motivations and
    - Hedonic motivations
    - Social motivations
- Customer engagement and
    - Utilitarian motivations
    - Hedonic motivations
    - Social motivations and engagement

In the context of mobile applications.

Chapter 2 reviewed the various themes through literature studies undertaken in this topic previously, namely:

- Customer engagement
- Smartphone applications
- Utilitarian motivations
- Hedonic motivations
- Customer satisfaction
- Customer perceived value

These research objectives as well as the research questions categorised into various hypothesis in Chapter 3. The key research questions to the study set out in Chapter 3 were:

1. Does the user motivation for engaging mobile applications influence the perceived value the customer derives?
2. Does the customer motivations for customer engagement influence the customer satisfaction?
3. Does the customer motivation to engage with a mobile application influence the customers' engagement?

94

Chapter 4 set out how the methodology of the study to be followed. A quantitative study was undertaken utilising data collected through an online self-administered survey distributed to over 300 people who owned smartphones or tablets and had used or were currently using a mobile application before.

The research design was set out detailing the instrument design and the data source. The population and thereafter the sampling and sampling method and size were qualified. The types of tests to be utilised were described, in short, the Cronbach's alpha was used to test for consistency of the constructs. The Spearman's rho correlation test was used to test for correlation between the factors. The chapter was conclude with the researcher highlighting the limitation observed in this particular study.

The findings to the research questions were then presented in Chapter 5. The result of the questionnaire constructs testing using Cronbach's alpha for internal consistency in the questionnaire were within the acceptable alpha range. With the consistency acceptance, the statements were then deemed acceptable to continue with in the hypothesis testing.

The Spearman's rho results of the hypothesis testing found a relation between the themes did exist. Of the 300 survey's distributed, 134 were deemed to be complete and could be further used for the analysis. An addition three responses were received after the cut-off period, and these results were excluded from the analysis

Chapter 6 analysed the results in relation to the research questions tabled and the hypothesis as well as referencing the literature supporting the findings were considered.

This concluding section of the research paper presents a summary of the document and includes final assessments emerging from the study undertaken. This section concluded with areas of potential future related studies that surfaced during the research study, and could be explored in future studies beyond this.

7.1 Principal findings

This research study sought to investigate the existence of a relationship between what motivates a customer to engage with mobile applications and the satisfaction they

95

derive and as well as the value, they perceive to receive from the engagement.

The audience expected to identify with this body of work was academics that seek to increase their understanding and knowledge of the various engagement motivations and if they have an impact on the customer's satisfaction and perceived value in the context of mobile applications.

The second audience type are the business practitioners in particular those looking to respond appropriately to customer needs through insights in their design and delivery of mobile applications. By understanding some of the motivators of engagement, this could also create awareness on the type of mobile applications customers would most likely use.

The engagement of the customer has been found to have an influence on the company's profitability based on findings by Kumar et al. (2010). Companies are appreciative of the prevalence of mobile application as an additional route to reach the customer in order to facilitate additional communication or an additional channel to execute sales or a service or attract new customers, (Wang et al., 2015).

Marketers who have better insight into what motivates a customer to engage in their application should use these insights in better design marketing strategies that are targeted and more appropriate. This would see an increase in company profits.

The key objective of the literature review that was subsequently undertaken was to gain understanding of the body of work that exists in the field. The secondary analysis of the survey outcome confirmed the existence of a relationship between utilitarian, hedonic and social motivations and the customer satisfaction as well as the perceived value.

The findings of the survey confirmed the findings of earlier research, (Alnawas et al., 2015; Y. H. Kim et al., 2013), in relation to the existence of these relationships. Although there is differing views as to what extent each motivation has on customer, satisfaction and perceived value the customer derives from each of the motivations.

The concept of customer engagement was investigated in literature. This concept highlighted that the connections between a customer and a company or brand involved

96

emotional, cognitive and behavioural elements, (Brodie et al., 2011; Y. H. Kim et al., 2013; Thakur et al., 2011).

The three identified motivations were analysed based on literature. Utilitarian features referred to functional factors such as management of diaries and appointments, scheduling and management of tasks, (Venkatesh, 2012). The applications that respond to the utilitarian motives are calendar or the Calculator applications. In the context of the mobile applications this referred to the extent the mobile application facilitated the execution of these tasks.

Hedonic features are the factors that refer to the fun, enjoyment and pleasure aspects. In the context of the mobile application, these would be the application that result in the customer deriving joy, fun and pleasure from using the application. The customer would not be looking to fulfil a functional need through this type of engagement, (Xu et al., 2015). Examples of applications that would fulfil the hedonic motives of the customer include Photoeditor that creates a variety of photograph variations and Musictube for music.

Social features were reviewed and highlighted drivers such as desire to connect with other, to be in social unity with others. The mobile applications that would respond to the customer's social motives would include Skype and Whatsapp.

These motivations were then analysed in relation to customer satisfaction as well customer perceived value. The dimensions that the perceived customer value was evaluated against social, functional epistemic and emotional. These dimensions are said to form part of what the customer would evaluate to ascertain perceived value in an engagement and in this context of the study a mobile application engagement.

The customer satisfaction features referenced features of an experience-based assessment based on the fulfilment of the customer's own expectations and functionality that the engagement brings. The satisfaction of the customer will then increase or decrease based on the level of the satisfaction levels in relation to the expectations are met, (Dovaliene et al., 2015).

As part of the research study, the factors were then framed into three research questions and further broken down into nine hypothesis to be then tested, being:

97

1. Does the user motivation for engaging mobile applications influence the perceived value the customer derives?
2. Does the customer motivations for customer engagement influence the customer satisfaction?
3. Does the customer motivation to engage with a mobile application influence the customers' engagement?

A quantitative analysis was used to test hypothesis. In addition, a Spearman's correlation was applied to confirm if there exists relationship between the motivation factors and customer satisfaction, motivation engagements and perceived value and customer satisfaction had perceived value. Chang and Zhu (2011) and Hsiao et al. (2016), tested the relationship between motivations and technology utilising the spearman correlation.

An internet-based survey was utilised to collect the primary data that was electronically distributed to 300 potential respondents. Due to the practicality of time and financial resources, the researcher had access to a portion of the total population that could be reached for the study. The survey was attempted by 198 respondents and fully completed by 134 respondents who had access to a mobile device in the form of either a smartphone or a tablet. This equated to a 43% response rate.

Each of the nine hypotheses were tested by correlating each of them against customer perceived value and customer satisfaction. A relationship between perceived value and customer satisfaction was also tested.

In testing for significance, utilitarian, social and hedonic motivations were each found to be statistically significant against customer perceived value and customer satisfaction. The significance results permitted the writer to continue with the variables, and confidence that these reflected the overall smartphone application user population.

Based on the results set out in Chapter 5, on testing for the existence of a relationship between utilitarian motivation and perceived value, customer satisfaction as well as customer engagement. In all three instances, a relationship was confirmed. Customers found perceived value when the applications they used demonstrated the functionality they were expecting. This expectation being met set off the cost outlay incurred in using the application. The cost is both financial and non-financial, considering the cost

of the time to learn and use the application. Customers, who derive satisfaction from applications that facilitate the execution of their daily tasks such as setting up meetings and accessing tools such as calculators, will derive satisfaction when these motives are met.

A statistical test was run to ascertain if there was a relationship that existed between hedonic motivation and perceived value, customer satisfaction as well as customer engagement. In all three instances, a relationship was confirmed.

Customers perceive value when the application they are using responds to motives of enjoyment and pleasure. Even with the utility being the motive for engaging, elements of enjoyment and fun are required in the applications to ensure the customer uses the application.

Although the results noted that in building up the hedonic construct, less customers were driven to use applications for rest and relaxation. For developers and companies to leverage the hedonic motivation, elements of hedonism should be included in other segments of applications.

A further statistical test to ascertain if there was a relationship that existed between social motivation and perceived value, customer satisfaction as well as customer engagement. In all three instances, a relationship was confirmed. The output yielded a positive output, confirming the existence of a relationship.

The yearning to connect to other people who have common interests motives customer to engage in applications where this motive will be met. The applicants recording the highest number of users being segmented under the social banner have demonstrated this. Applications such as Facebook, Whatsapp and WeChat are increasing their users and usage rapidly.

7.2 Implications for management

Understanding how the customers and users engage with mobile applications is important for academic researchers, marketers and application developers to gain greater insight into the reasons customers engage with mobile applications.

To understand what the elements are driving this engagement and how best they

leverage this insight to design, develop and create applications that continue to be utilised therefore generating revenue for the developers and companies.

The principal findings from the body of work was critical in highlighting the competitive advantage most application developers would gain in designing applications that responded to the customer's motivations.

The research also pointed to how companies could extend their revenue streams by incorporating mobile applications as part of their marketing strategies. These increased revenue streams can be earned from:

- Existing customers

- Engaging new customers, (Kumar et al., 2010).

It is evident based on the various literature reviewed that the use of mobile applications has increased and continues to increase rapidly. The use of the mobile applications in our daily lives has prompted even greater innovation in this application marketplace, (Kim et al., 2016).

Therefore there is greater opportunity to increase company revenue streams through companies better leveraging the insights gleaned from understanding what drives customers to engage with their applications.

For the new applications recently introduced and the plethora in the pipeline from application developers, an understanding of the insights that motivate customers, would be of value to them in order to develop applications that respond to their intrinsic as well as extrinsic motivations

7.3 Limitations of the research

Chapter 4 highlighted, some of the limitations encountered in executing this study. As is common with most studies, time and resource limitations have had an impact on the execution of this study. With this in mind, the study scope was designed and executed within the constraints. This sections will discuss some of the limitations.

It is also important to bear in mind that the researcher is not a skilled statistician. To this end, has relied on guidance from study material, documented views as analysed from the literature review process and guidance from the faculty staff and supervisor.

With the increasing penetration of smartphones, globally and the increasing usage of mobile applications, access to the population was not practical nor possible. Due to the researcher not having access to the entire population of all customers of mobile applications, the sample size was drawn from available contact details, the researcher had at their disposal. Therefore the sample data may not be fully representative of the overall population. The sample was not segmented according to age or gender. Economic status of the respondents was also not considered in the study.

In constructing the customer engagement constructs, for the survey instrument, a predefined, widely used survey instrument was not found for adaptation for this particular study. The writer relied on the literature review to construct customer engagement measures.

Although the survey was emailed to over 300 people, 134 (43%) responses were received and deemed complete to further use in the study.

The research looked at specific dimensions around motivation to engage with mobile applications. There could be other motivations for using particular applications that the study does not cover. The study investigated the existence of a relationship between the themes.

The study did not measure the magnitude of the impact of the relationship between the different engagement motivations on customer satisfaction and customer perceived value. The research also did not explore the dependence of the elements on each other and the interaction between various variables.

The study did not did not discriminate between the amount of time that a customer has been engaging with mobile applications. Or the amount of applications the customer would regularly engaging. The study also did not differentiate between customers who frequently engage with mobile applications and customers who rarely engage with applications.

The sample selection did not differentiate by gender, age, race or geography. So none of this information was collected nor required for the scope of this study. The current study objective were to test the existence of the relationships between:
- Customer satisfaction and
    o Utilitarian motivations

- ○ Hedonic motivations
- ○ Social motivations
- Perceived customer value and
  - ○ Utilitarian motivations and
  - ○ Hedonic motivations
  - ○ Social motivations
- Customer engagement and
  - ○ Utilitarian motivations
  - ○ Hedonic motivations
  - ○ Social motivations and engagement

The study results confirmed the existence of the relationship between the motivations as well as customer satisfaction and customer perceived value. Further to this, the test of the possible differing outputs based on age and gender is opportunity for future study.

7.4 Suggestions for future research

In light of the research limitations discussed above, there were a number of areas where future research can be conducted.

The themes of the future research are discussed below.

7.4.1 Methodologies to investigate application usage

The methodology that was utilised in this study in collecting the data was based on an online self-administered which is self-reporting. In reviewing the literature in chapter 2 and defining the measurement instrument, a large amount of the research relies on this type of self- reporting in arriving at their conclusion.

The method of measuring the correlation between the variables and the strength of the correlation between the variables as well as which of the variable influences can be augmented with a supporting view of more detailed feedback. Developers form Apple have begun to dive deeper into the usage statistics of their applications. A more wide spread use of the tools in the research arena should be considered.

More detailed tools to could result in more enhanced outcomes. A combination of the existing methodologies combined with more modern enquiry methods such as

102

contextual inquiry, different forms of ethnography, panel studies and leveraging big data, (Verdegem & De Marez, 2011). Traditional inquiry methods are no longer sufficient and need absolutely to be combined with observational and related techniques.

In the context of mobile applications, traditional methods of observing or self-reporting fall short of reflecting actual engagement and as well as the types of mobile applications customers engage. A view of the combinations of applications used could further assist developers as well as companies in deciding how to package applications that are most commonly utilised together by a certain segment.

Or customised package offerings based on the individual's combination of applications they typically use. With the application bundling, this would enable the customer to access their desired applications more efficiently. And in time introduce applications that mirror their usage. This would increase usage and drive engagement.

Accenture (2016), recently published their key finding on their Innovation Index 2016 recently published their key finding on their Innovation Index 2016 wherein they explored how companies should be embracing digital platforms to enhance their product or services. They noted that companies will need to invest in tools and methods to gather customer feedback and insights to inform their product designs.

The use of a combination of tools to gather customer feedback and general insights, that include as examples, big data, more electronic tools to read actual usage of mobile applications and social media channels would assist researchers and companies with a number of elements to advance their performance.

Some insights that could be gathered include, insights on market perceptions of their product and services, competitor activities, idea generation. This would assist their response time in designing more targeted products and services and market delivery quicker than the competition.

7.4.2   Insights based on gender and age

As the current study looked at the overall engagement motivation across users of applications, it did not differentiate across gender or age. Further study could look at including a section demographics for gender and age classification. The results

103

gleaned based on gender and or age.

The current study set out to establish if there existed a relationship in what motivates customers to engage as well as the resultant customer satisfaction and perceived customer value. Based on the existing research as well as the research undertaken, the writer is of the view that age and gender may exhibit some differences in what motivates customers to engage with motivations.

The writer further believes the insights gleaned by age and gender would further enrich the campaigns companies roll out. By understanding how each of the segmented groups is motivated, this could lead to them crafting more focused and targeted campaign, which ideally should yield greater revenue and increased profits.

7.4.3 Mobile applications and company performance

In the study by Accenture (2016), they look to the competitive environment and for companies to excel in innovation and improve their performance, they would need to look at a wider range of input to their innovative ideas. The example of a sports nutrition company which leveraged off input gathered from social mobile application sourcing feedback from their customers on a product.

The real-time feedback received through the application was then utilised to redesign the product. They further recorded that the 85% of the test customers selected the improved product.

A more accurate method of recording company performance based on a company's use of traditional marketing tools against the new wave of more innovative marketing tools such as the tools (mobile applications) utilised by the sports nutrition company.

With the emphasis digital innovation makes on the customer, according to the Accenture study, this customer focus creates a competitive advantage. This focus can also improve the company's cost-serve-to-serve through the efficiencies across the value chain.

The study findings support the literature review analysis that appropriately infuses the various digital platforms such as mobile applications in their strategies, will yield number of benefits. Some of the documented benefits based on the results of the

104

Accenture study are reduced time to respond to customer needs; improvement of their product or serve delivery such as reporting electricity outage in an area through an application; product and service promotion as well improvement of route-to-market process.

There is an opportunity to study how companies employing mobile applications are performing against the companies who are not integrating digital interventions in their company strategies.

7.4.4   Applications achieving their intended purpose

Some applications are offered to customers at no direct cost to the customer by some companies such as fashion houses (Chanel) or banks. The objectives of these vary across industries and across companies.

Measuring the success of these applications would require a measure beyond the revenue the application generates as the application is available for download at no cost to the customer.

An opportunity for future study is to surface if the objectives of the 'free-to-customer' applications do meet their intended objectives. In literature, (Thakur et al., 2011) state that once a customer engages, using different methods of engagements, the research shows that this customer will purchase more and in time be more profitable for the company.

The research would focus on the profile of the customers that access these applications against the profiles of the customers who do not engage the company provided applications. The research question to be investigated would be if the customer who engage the company application is indeed more profitable or generates more revenue than the customer who does not this channel.

This insight would guide marketers on how their marketing budgets could be utilised in such a manner to bring higher return on their spend. It would also guide the marketers on the different interventions they could deploy for different outcomes on their marketing.

The marketing could be targeted at the application users to drive more and or higher

105

spend. The objective for the non-users of the application could either to drive them to adopt the application by enthusing on the benefits of the application, such as its utilitarian functions.

7.5 Concluding remarks

It is evident that there is increasing attention and awareness in the rapidly growing world of mobile applications. Companies would better position themselves by incorporating more rigorous digital strategies to harness this channel to further engage their customers as well as a means to attract new customers.

Companies who utilise mobile applications as part of their strategies as well as application developers, developing applications for the purposes of revenue, would be better positioned in their interventions by better understanding what customer perceive as valuable in their engagement. If customers perceive value, based on the cost of purchase of the application or the cost of time in learning how to use the application, this would drive engagement resulting in greater rewards for the company or the mobile application developer.

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9.   Appendix

Appendix 1 - Copy of consent document

Consent Letter

I am conducting academic research to further understand the motivation for using mobile applications. This will help ups better understand how the reasons for using the applications determine the value and satisfaction you may derive from using those mobile apps. It would be appreciated if you could complete this short survey, which should take no more than 10 minutes of your time.

All data from the survey will be kept confidential. You will not be asked to disclose your name.

By completing the survey, you indicate that you voluntarily participate in this research. You may withdraw at any time without penalty.

If you have any concerns or questions or require further clarification, please contact me or my supervisor using our contact details below.

To access the survey you will need to click on the link below.

https://mandisa.typeform.com/to/XjQSi8

Thanking you in advance.

Kind Regards,

Mandisa

Researcher contact details:

Mandisa Mavuya

083 200 7536

Mandisa.mavuya@gmail.com

Research supervisor contact details:

Dr Dunja Kartte

082 067 2853

dunja.kartte@gmail.com

NB: Please feel free to forward this email to your private or professional network who you think may be willing to participate in this study.

Your feedback is required by midnight 31 August 2016

Appendix 2 - Online Survey

Utilitarian Motivation

Please rate the importance of the following reasons when using mobile apps					
	5	4	3	2	1
1. To explore new and different applications					
2. To be up to date with new applications					
3. It increases my skills and knowledge					
4. Mobile applications keep me organised (reading emails and planning)					
5. Mobile applications save me time					

1 = Not at all important; 2 = Somewhat Important; 3 = Neutral; 4 = Important; 5 = Extremely important

Social Motivation

	5	4	3	2	1
6. To keep in touch or share with friends and family					
7. To be connected and meet people with similar interests					
8. To share views on a new or interesting applications					

1 = Not at all important; 2 = Somewhat Important; 3 = Neutral; 4 = Important; 5 = Extremely important

Hedonic Motivation

	5	4	3	2	1
9. To get rest and relaxation					
10. To enjoy the variety of content that mobile applications offer					

1 = Not at all; 2 = Not much; 3 = It makes no difference; 4 = Somewhat Agree; 5 = Absolutely

Customer perceived value

	5	4	3	2	1
11. Using the various mobile apps is enjoyable					
12. The overall value of my experience using mobile applications is outstanding					
13. Mobile applications are good use of my time and money					

1 = Not at all; 2 = Not much; 3 = It makes no difference; 4 = Somewhat Agree; 5 = Absolutely

Customer satisfaction

	5	4	3	2	1
14. Based on how much you pay on your monthly data cell phone bill, how satisfied are you with your use of the applications you utilise					
15. Based on your total time spent, how satisfied are you with your use or engagement of the applications you utilise?					
16. How satisfied are you with using or engaging of the					

115

	5	4	3	2	1
applications you utilise?					

1 = Not at all; 2 = Not much; 3 = It makes no difference; 4 = Somewhat Agree; 5 = Absolutely

Customer Engagement

	5	4	3	2	1
1. The ease of use of the applications on your phone increases your use of the applications					
2. Your experience with an application will determine your continued use of the application in the future					
3. Usefulness of an application will determine your continued use of the application					

1 = Not at all; 2 = Not much; 3 = It makes no difference; 4 = Somewhat Agree; 5 = Absolutely

Appendix 3 – GIBS Ethical Clearance Letter

Dear Ms Mandisa Mavuya

Protocol Number: **Temp2016-01697**

Title: **The relationship between consumer engagement motivation, consumer perceived value and satisfaction in the context of mobile applications**

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,

Adele Bekker

Appendix 4 – Frequency statistical results

118

119

Customer Satisfaction

Customer Engagement
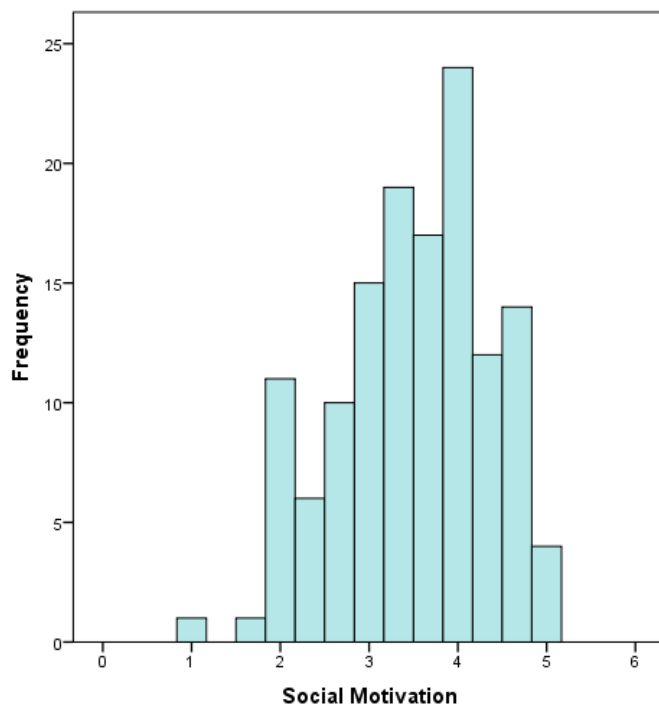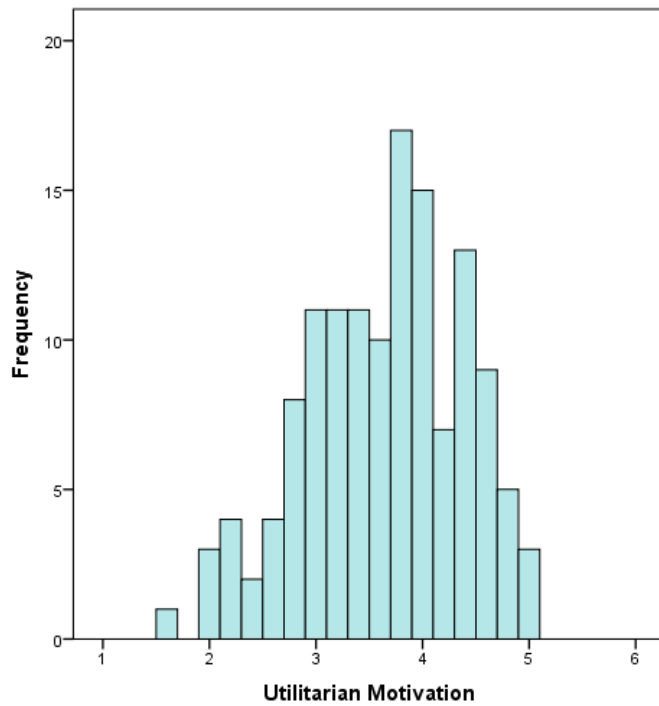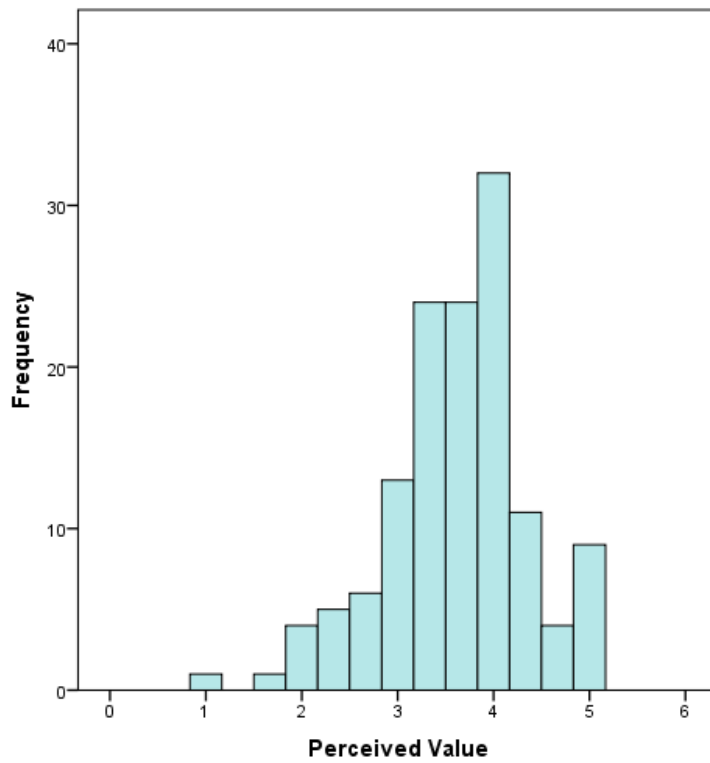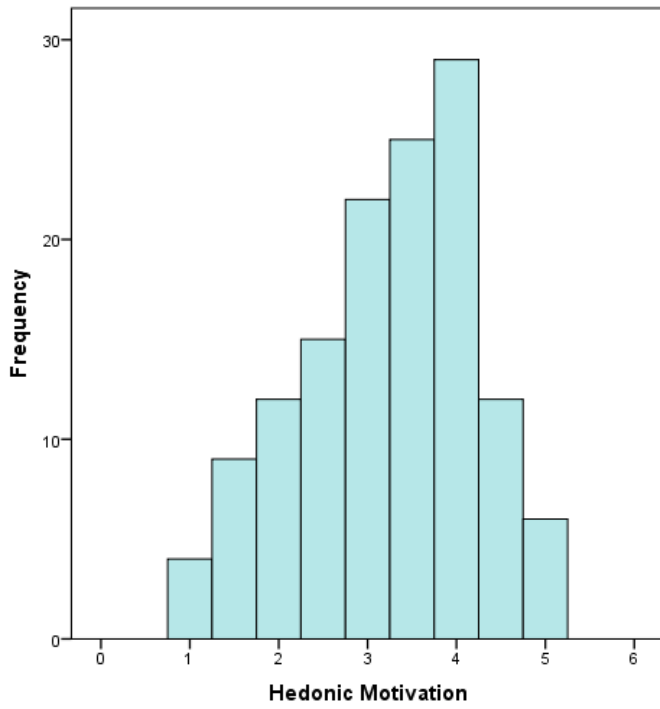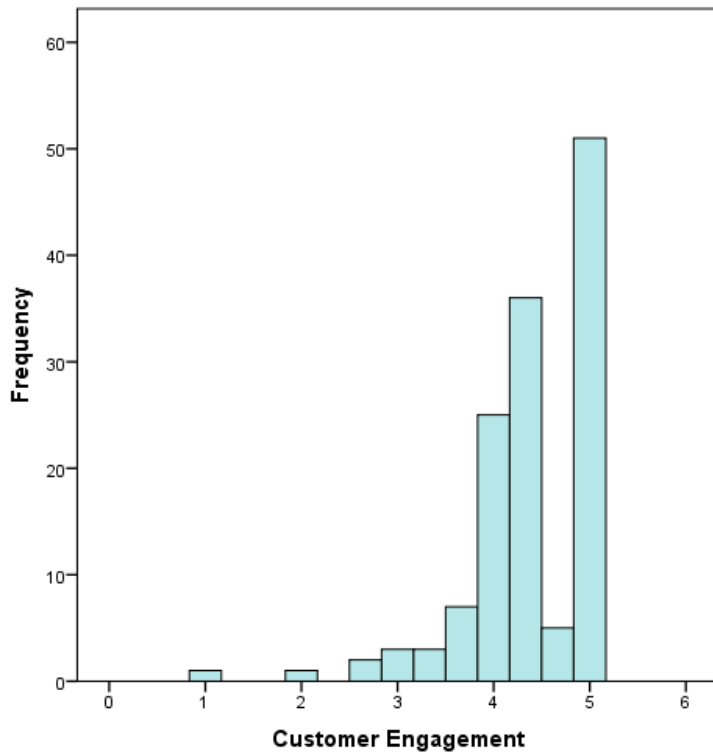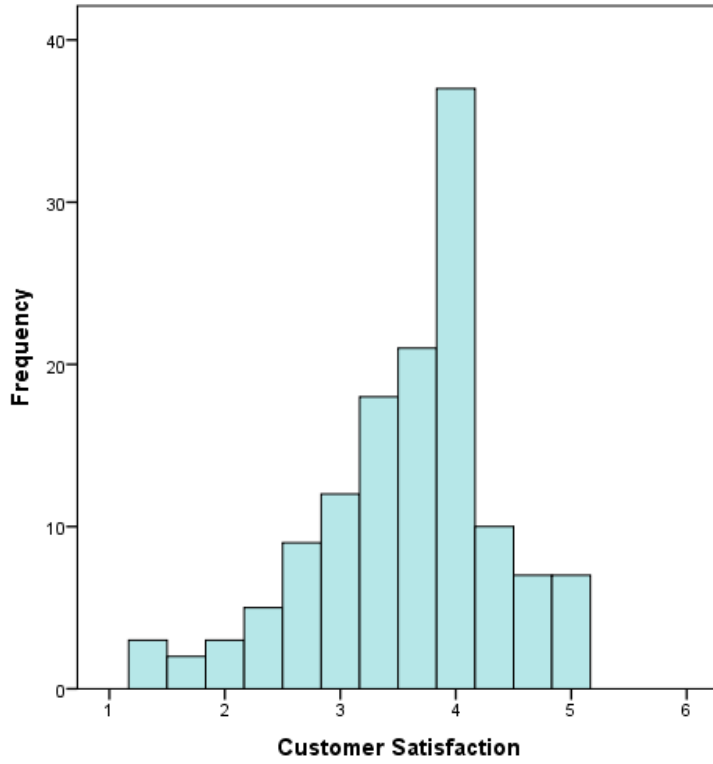
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