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Gordon Institute of Business Science
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Customer engagement with brands in smart device mediated online environment and flow construct

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ABSTRACT

Today's customers can be characterised by having rich information at their fingertips, a short attention span and access to multiple channels. This makes it challenging for organisations to engage such customers, especially in online environments, which are characterised by rapid changes in technology. This research applied Hoffman and Novak's (1996) initial insights of the flow construct in smart devices mediated online environments to solve the modern battle for customer attention and engagement. This research aimed to establish antecedents of engagement and flow constructs and their interplay during online product/service consumption scenario.

By undertaking a quantitative descriptive study, 274 valid responses by means of an electronic survey were received from South African consumers of online mobile banking services. By enhancing brand engagement and flow scales used in previous studies, 41 statements measured the brand engagement and flow perceptions through 10 antecedents. Structural equation modelling (SEM) was used to analyse structural relationships between latent constructs of engagement, flow and loyalty.

The study established that although all seven antecedents were predictor of flow experience, four antecedents (skills, perceived usefulness, perceived ease of use and perceived control) were stronger predictor of the flow compared to the other three (Hedonic value, concentration and positive challenges) in smart devices mediated online service environment such as mobile banking App. Usage intensity was found to be a better predictor of user engagement compared to Brand self-concept (BSC), and brand interaction value (BIV). Also it was found that brand engagement was stronger predictor of flow experience and was a moderate predictor of brand loyalty in online service environment. As technology landscape is evolving on continuous basis and smart devices are becoming integral part of the consumer's life, brands need to ensure that above mentioned antecedents are present on their online service platform to engage users and to provide compelling flow experiences.

Key words: Antecedents, Brand, Loyalty, Customer engagement, Flow experience, Smart device mediated online environment, Technology evolution

DECLARATION

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

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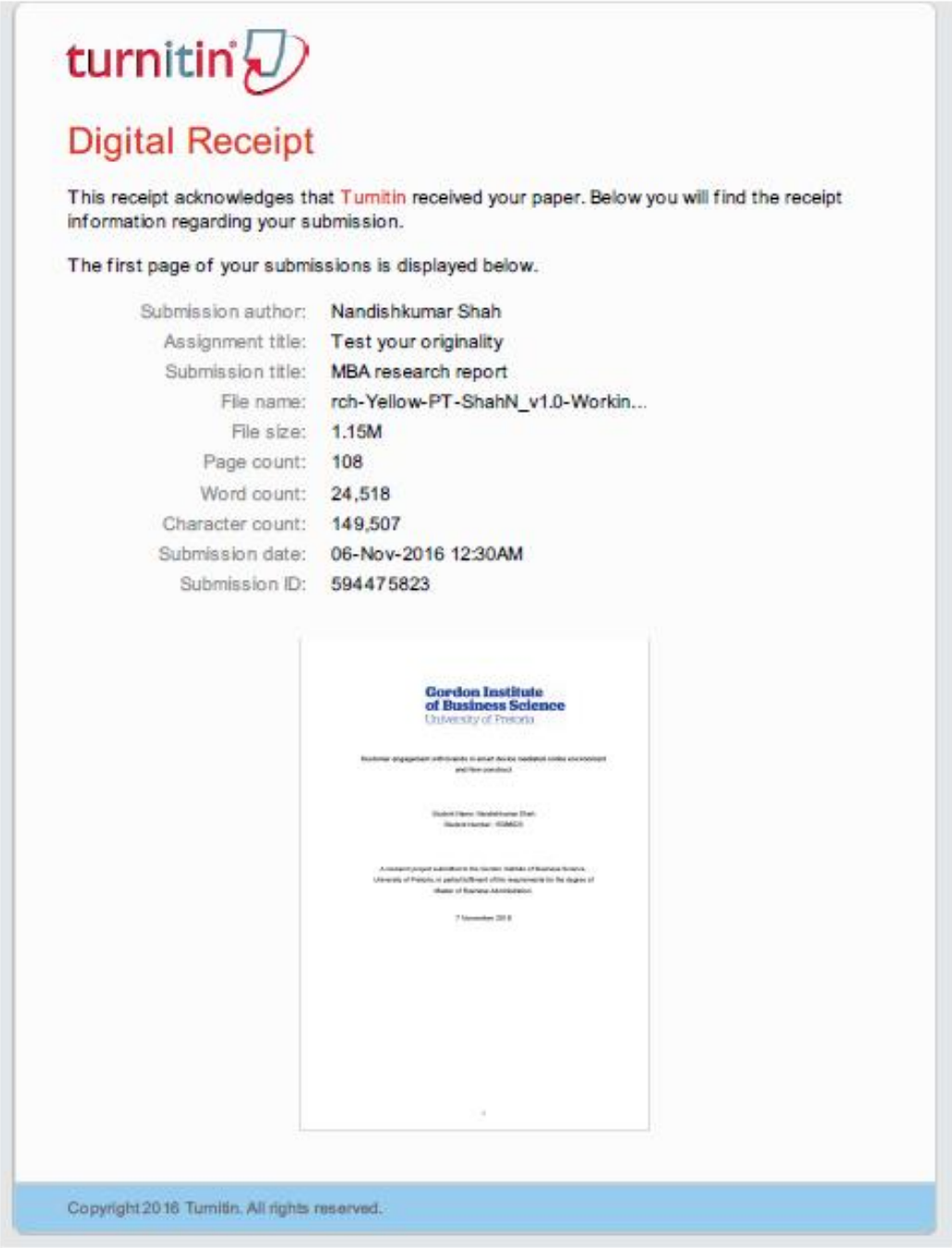

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CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

1.1 Introduction

We are living in an age of attention economy (Chang, 2015). Over the past decade, an intense drive for consumer attention and engagement has emerged as a subject of substantial interest to leaders, advisors and enterprises worldwide. In today's information-rich, attention seeking and multi-channel time, customers are increasingly distracted and are expressing higher expectations in terms of product quality and service standards (Davey, 2010). Weissman (2015) mentioned that for today's consumers' real-time connectedness, accessibility, convenience, ease of use and immediate gratification have become top priorities.

Customer engagement is gaining even more relevance in the online environment, as service providers are finding it extremely difficult to hold onto the consumers and convey the value of the business (Enginkaya & Esen, 2014). Right now, countless brands are shouting and madly waving their hands 24/7 for consumer attention which has turned into a noisy and relentless marketing war (Fab & Rending, 2016). Authors further mentioned that brands need to manage a subtle balance between attention and oversaturation as it might take ten right moves to win customers but only one wrong move to lose them. Weissman (2015) stated that businesses stand the risk of becoming obsolete if they do not evolve themselves in line with customers' demands and needs.

While online environments and advance technologies are becoming a challenge for businesses, they also provide great opportunities as a new form of customer engagement channel. Due to their ease of use and quicker turnaround time, amongst other reasons, customers may prefer to interact with technology in a self-service mode instead of interacting with business agents/employees (Hirt & Willmott, 2014).

Among new generation of technologies, smart phones are gaining the highest adoption among consumers. Smart phones extend the capability of mobile phones beyond merely placing calls and sending text messages. The smartphone's attractiveness and appeal beyond that of a personal computer is the fact that unlike a computer, where one has to be confined to a specific desk, the limitless functionalities can be utilised without constraint of time and place. After quickly learning how to use smartphone devices to access the

internet, consumers tend to use the smartphone as the mode of internet access even when an option to use a personal computer exists (Gafni & Geri, 2013).

Access to the internet through smartphones provides users with an unlimited capability as they can download and install third-party mobile applications (Apps). With the growth of the smartphone market, mobile Apps have surfaced as the key competitiveness of smartphones (Kim, Lee, & Son, 2011). Various App stores have crossed the million mark in terms of number of different application available for download. Weissman (2015) noted that mobile applications, driven by smart phones adoption, have progressed well beyond gaming and social media surfing to become powerful tools that can bring together brands and their clients in real-time. A study conducted on mobile user engagement found that user friendly and intuitive features of mobile apps drive user value and satisfaction (Kim, Kim, & Wachter, 2013).

Moreover using mobile applications, people and organisations are finding new ways to exploit and extend the smart phone capabilities. As technology landscape is evolving and smart devices (smart phones, smart bands, Internet of Things (IOT)) have become integral part of the consumer's life, it is important to assess how brands can engage with users through new technology medium. Smart devices are opening up new ways for businesses to provide customer services delivery and support consumption.

It is clear that in an age of information overload and unlimited choices, marketer must realize that brand engagement is driven by providing precisely relevant experiences that attract and hold the attention of each consumer (Roytman, 2012). The author further stated that consumer relevance need to be maintained continuously as consumers move seamlessly from one interaction point to the next and brands failing to do so will get lost in the war for consumer attention. Ultimately, our "spend" of attention and engagement needs to be measurable, with a consistent and transparent methodology across multiple platforms (Chang, 2015).

In an attempt to measure and deliver the compelling online consumption experiences, one cannot neglect the potential importance of flow. The Flow construct was presented by Csikszentimihalyi (1977) as an attempt to explain those times when individuals experience total absorption in a task. In their seminal work, Hoffman and Novak (1996) proved that the flow construct is applicable to computer mediated environments and proposed a model with some of the antecedents of flow experience. Hermida and Chipp (2005) extended the original work of Hoffman and Novak (1996) to demonstrate

that the flow construct is also present and valid with and for self-service technologies (SSTs). Now, technology has leapfrogged from the difficult to operate interface of SST and has become more intuitive and ubiquitous with the advancement of smartphones and wearable devices. With the rise of mobile and social technologies and their always-connected status, consumers have become more powerful in controlling their own service experience (Maguire, 2015). The author further states that this trend has forced marketers to rethink how they engage and connect with their customers.

It has become crucial for businesses to find antecedents of engagement and flow in new technology environment for creating pleasurable online experiences for their products/services.

1.2 Past research and motivation for further research

Brands and brand experience has been studied comprehensively in the academic literature (Khachatryan et al., 2015; Kotler & Keller, 2012; Rageh Ismail, Melewar, Lim, & Woodside, 2011).

Flow construct and its consequences in website context has been studied in past by various researchers (Hausman & Siekpe, 2009; Hoffman & Novak, 2009; O'Cass & Carlson, 2010; Webster, Trevino, & Ryan, 1993). Antecedents of flow such as Functional & hedonic value, perceived control, perceived usefulness, perceived ease of use, matching of skills & positive challenges and concentration, in online environment (especially website based) have been studied by (Burke, 1997; Cao, Zhang, & Seydel, 2005; Eroglu, Machleit, & Davis, 2003; Hoffman & Novak, 2009; Koufaris, 2002; Mollen & Wilson, 2010; Zhou, 2012) in various studies.

The construct of consumer engagement and its antecedents such as Brand engagement in self-concept, usage intensity and brand interaction value have been extensively studied for web based online environments in various past studies (De Vries & Carlson, 2014; Dholakia et al., 2010; Jahn & Kunz, 2012; Kressmann et al., 2006; Kumar et al., 2010; Malasch & Leiter, 1997; Novak, Hoffman, & Yiu-Fai, 2000; Richard & Chandra, 2005; Vivek, Beatty, & Morgan, 2012;Webster et al., 1993).

All past research on engagement and flow has focused on computer usage and brand websites. As far as the author could ascertain, there has been limited research on these constructs from new age technology perspective which is driven through intuitive and ubiquitous smart devices such as smartphones, smart-bands and IoT devices. As the technology landscape is evolving and smart devices have become an integral part of the consumer's life, it is important to assess how brands can engage with users through this new technology media and how they can create compelling online experiences. This research aims to establish important antecedents of engagement and flow constructs and their interplay during brand's online service consumption mediated by smart devices.

Following are the research questions:

1. Which antecedents are the strongest predictor of flow experience during brand's online service consumption mediated by smart devices?
2. Which antecedents are the strongest predictor of user engagement during brand's online service consumption mediated by smart devices?
3. Does customer engagement in the online environment lead to the experience of flow and loyalty?

1.3 Conclusion to the Research Introduction

As discussed, this study aimed to affirm the application of the brand engagement and flow experience constructs to enhance a brand's online service from a new technology platform point of view, and offers a meaningful contribution to the literature and related principles to be incorporated into any modern organisation's online services operations, as a measure to turn the tide of declining consumer engagement. Furthermore, such findings could offer a contribution to brand engagement and flow experience literature in the South African context.

The subsequent sections of the research are structured as follows:

Chapter 1: Introduction to the research problem

This chapter introduces the rationale and the need for conducting the research, the past research in the area and the research problems.

Chapter 2: Literature review

This chapter provides a groundwork for all theories related in this study. The major areas to be assessed and studied are brands and their service experience, flow experience and its antecedents in an online environment mediated by smart devices, user engagement and its antecedents in an online environment mediated by smart devices and impact of engagement on flow and loyalty.

Chapter 3: Research propositions

A number of propositions are constructed to answer the research questions and goals.

Chapter 4: Research methodology

A description of the research methodology, sampling method and analysis procedures used in conducting this research is provided.

Chapter 5: Results

The comprehensive analytical results of the research are presented.

Chapter 6: Discussion of results

A discussion of research results and their effects for theory.

Chapter 7: Research conclusion

Final conclusions are drawn based on the research findings.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The following sections discusses the applicable literature pertaining to the problems identified in Chapter 1. The major areas to be assessed and studied are brands and their service experience, flow experience and its antecedents, user engagement and its antecedents and effect of engagement on flow and loyalty in smart device mediated online environment.

2.2 Brands and brand service experience

This section explores the brands, service construct, and how this relates to a brand experience environment. Brands could be conceptualised as the sum of all perceptions and feelings by customers that they associate with an organisation relating to a product or service, quality assessments, performance, confidence, as well as the sentiments and values the organisation represents (Batra, Ahuvia, & Bagozzi, 2012). Organisations infuse their products and services with brand identity, which promises to consumers that the organisation will deliver what is promised; and it involves the building of trust, and consistency to manage consumers' perceptions (Hamzah, Alwi, & Othman, 2014).

Services are described as "the application of one's resources for the benefit of another entity" (Vargo & Lusch, 2008, p. 28). Services are differentiated from tangible products by features such as non-standardisation, being produced and consumed at the same time and inability to be stored (Nysveen, Pedersen, & Skard, 2013). The service context of brands addressing the emotional and functional dimensions, is observed by the trust they build between the consumer and the intangible deliverables of the organisation (Kemp, Jillapalli, & Becerra, 2014).

Brand has brand experience as main input, and exhibits brand loyalty as a key output (Kotler & Keller, 2012). Rageh Ismail et al. (2011) highlighted characteristics of brand experiences as being memorable, distinctive and astonishing, engaging, customer-centric, personalised and emotionally stimulating. These experiences can be tailored as

being strong and deeply meaningful, or purposely basic and uncomplicated, depending on the need or values of the consumer (Machado, Cant, & Seaborne, 2014).

Brands strive to create experiences that encourage the consumer to develop meaningful and emotional attachment to the brands (Khachatryan et al., 2015). Therefore, it could be reasoned that the brand serves as an instrument for creating engagement and flow with the aim of establishing a long-term consumer-brand relationship.

2.3 Construct of flow and its linkage to smart devices mediated online environment

2.3.1 Defining flow

The concept of flow was published by Csikszentimihalyi (1977) as a state in positive psychology when trying to describe those times when individuals experience total immersion in a task. An individual in the flow state operates at full capacity, with energised focus, involvement, loss of self-awareness, obliviousness of time and enjoyment of the current activity (Nakamura & Csikszentmihalyi, 2014). The flow experience involves a merging of actions and awareness, with intense concentration which screened out the irrelevant thoughts and the consumer focuses entirely on the interaction (Hoffman & Novak, 1996). The flow experience has been reported by people in a wide variety of activities in daily life, including shopping, sports, dancing, playing computer games and even while performing complex tasks like patient surgery (Hoffman & Novak, 2009).

The study of flow has attracted emergent interest from scholars in psychology, information systems and marketing in their efforts to better understand emotions and hedonic desires, which are non-functional characteristics (Hausman & Siekpe, 2009). Hoffman and Novak (1996) extended the universal applicability of flow by demonstrating that the flow construct is relevant in hypermedia computer-mediated online environments (CME) as well. The computer-mediated environment of the internet has the potential to create immersive experience by facilitating various types of interactivity such as human-human, human-computer, and computer-computer (O'Cass & Carlson, 2010).

The technology advancement, increased processing capabilities of technology devices and wide-spread adoption of broadband services have resulted in consumers having

greater interactions with computers and mobile devices, which provides a valuable platform for improving flow experience and possibly better user experiences (O'Cass & Carlson, 2010; Hausman & Siekpe, 2009). To further highlight the importance of flow, Hoffman and Novak (1996) argued that facilitating a state of flow was vital for a commercial website and that an important objective for marketers must be to provide opportunities for its experience. Therefore, the flow experience is the desirable consequence of the exchanges between the user and an organisation's website through its e-service delivery point, which acts as the "glue" holding the consumer within the internet environment (O'Cass & Carlson, 2010).

Hoffman and Novak (1996) found that the consequences of flow is powerfully linked to increased learning, exploratory and participative behaviour and positive subjective experiences in a computer mediated online environment (CME). Consumers who experience the flow state and related playfulness are more likely to retain the learnings (Hoffman & Novak, 1996). Webster et al. (1993) also postulated that learning is a reasonable outcome of the flow state as exploratory behaviours help with customer's cognitive development. Studies have found that flow was antecedent to increased learning and it impacts user attitude and behaviour towards organization's online service (Hoffman & Novak, 2009).

There are some possibly negative consequences of flow, as too much flow (although a reward in its own right) may distract the consumer from business goals-related activities and may result in a longer time to task completion (Webster et al., 1993). Flow had also been linked to over-involvement (Csikszentimihalyi, 1977), which may lead to mental and physical fatigue.

Environment of the Web itself has changed drastically after the study by Hoffman and Novak (1996), which included more intuitive and ubiquitous technology dominated by smart mobile devices. Lately, researchers have begun to turn their focus to the effect of simulated shopping experiences using virtual reality and augmented reality on flow and its outcomes, which is radically different from the two-dimensional environment of the desktop computers (Hoffman & Novak, 2009). Zhang and Rau (2015) conducted experimental research on flow experience, while interacting with wearable devices, especially around the influence of display, motion and gender on the interaction.

2.3.2 Measuring flow construct

Flow has more contextual relevance and experience-based understanding; however, to translate it into a dependable operational definition had proven to be a challenging task so far (Hoffman & Novak, 2009). Authors further stated that these definition problems have led to the unfortunate consequence of deterring the systematic evolution on empirical research on flow. Since it is difficult to measure high level construct such as flow, there exist various schools of thought and research in this area. Some researchers viewed flow as a unidimensional construct with a set of auxiliary constructs that serve as antecedents and consequences of flow, while others viewed it as a derived construct that aggregated fundamental constructs related to flow into an overall measure (Hoffman & Novak, 2009).

Advantages of direct self-report measures of flow are ease of supervision and the ability to link self-reports of flow experience with a set of auxiliary constructs that serve as antecedents and consequences of flow. Disadvantages of the direct approach include the possibility that different subjects may infer flow in different ways, creating measurement error. This also requires the assumption that antecedents of flow, such as focus, control, hedonism and challenge, are separable from flow itself (Hoffman & Novak, 2009).

The derived approach has advantage of relative ease of management. By providing specific items for subjects to respond, the derived approach increases the likelihood that all subjects interpret instructions in the same way. A grave disadvantage of the derived approach is that it blurs the distinction between the antecedents and consequences of flow, creating a major definitional problem of which constructs and items should be included in the summed scale (Hoffman & Novak, 2009). This study used direct self-reported measure of the flow as ease of questionnaire administration is one of the important factors considered in this research.

2.3.3 Antecedents of flow experience

The Hoffman and Novak (1996) model had provided insight into antecedents of an online flow experience (such as resemblance of skill and challenge, interactivity, productivity and motivation); the nature of an absorbing flow experience (such as immersion, attention and telepresence); and outcomes of this experience (such as increased learning, perceived behavioural control, exploratory mind-set and a positive personal experience). Subsequent studies by (Burke, 1997; Cao et al., 2005; Eroglu et

al., 2003; Hoffman & Novak, 2009; Koufaris, 2002; Mollen & Wilson, 2010; Zhou, 2012) further added to knowledge by identifying additional antecedents of flow experience and their interplay. This research took a most common antecedents from these literatures based on recommendations and importance attached to them in the literature.

2.3.3.1 Hedonic value/enjoyment

An important measure and antecedent of flow is the level of intrinsic enjoyment of an activity, which is similar to the emotional response of pleasure studied in environmental psychology (Koufaris, 2002). A study conducted by Burke (1997) found that flow is related to work enjoyment and feelings of professional efficacy.

Eighmey (1997) studied differences between offline and online shopping environments and found that shopping enjoyment was equally important in both the environments and that enjoyment had a noteworthy impact on approach and intention towards online shopping. However, another study by Li, Kuo, and Rusell (1999) found opposite result that fun orientation was not different between non-online buyers, infrequent online buyers, and frequent online buyers.

Research has found that if the online service interface is not enjoyable, consumers will lose interest and will abort the service interaction (Cao et al., 2005). Hwang and Kim (2007) posits that website features that are fun, fascinating, stimulating and entertaining have a positive effect on a customer's evaluation of a company's website. Additionally, Ou and Sia (2010) discovered that consumers who enjoy their website experience tend to trust the company and its brand, which positively shapes the purchase intent and possibility of future flow experience encounters.

Also, past studies conducted on flow in an online environment found that inherent enjoyment positively impacts the use of online environments for e-mail use (Trevino & Webster, 1992) and web application/software use (Webster et al., 1993). The effects of using an online smart device (such as smartphone) mediated service is expected to be similar. In the context of online service environment, this research operationalised intrinsic enjoyment as online service enjoyment and measured it with a five-item scale.

Research Proposition: Hedonic value (HV)/Enjoyment positively influences the user's flow experience while interacting with the brand's online service.

2.3.3.2 Perceived control

Perceived control had been well researched in various academic frameworks by different names such as perceived locus of control (Rotter, 1966), perceived control in achievement incentive theory (Atkinson, 1964) and perceived behavioural control in the theory of planned behaviour (Ajzen, 1991).

In flow research, perceived control had been defined as the level of one's control over the situation and one's actions, which was similar to Ajzen's (1991) perceived behavioural control, which is situation specific (Koufaris, 2002). Drawing from earlier research findings, perceived control can be defined as the degree to which the users perceive that the interaction between the brand and themselves to be two-way, well-regulated, and responsive to their actions (Mollen & Wilson, 2010). User's feeling of control and interactivity in online environment facilitates two way communication similar to interpersonal communication that produces feedback (Kiousis, 2002).

Due to time constraints and availability of multiple options on the online environment of web, customers are exhibiting utilitarian behaviour and are asking more control, less efforts, and higher efficacy during the online servicee/product interaction (Koufaris, 2002). Since consumers demand control over their activities and the service environment, the research expects them to favour online services that provide them with a sense of perceived control. Thus, perceived control is assumed to be one of the important antecedent of flow experience.

Research Proposition: Perceived control positively influences the user's flow experience while interacting with the brand's online service.

2.3.3.3 Concentration/focus

Persistent focus on the current activity is one of the prerequisite to achieve a flow state, however online customers can have a short attention span because of their limited availability of resources of time and information processing along with increased levels of control (Hoffman & Novak, 2009). Compared to the physical world, where possibilities for multi-tasking are limited, the online world offers multi-tasking capabilities to users of smart devices. Online consumers, therefore, also can be distracted as they go back and forth between various services, which impacts their brand engagement and experience of flow (Koufaris, 2002).

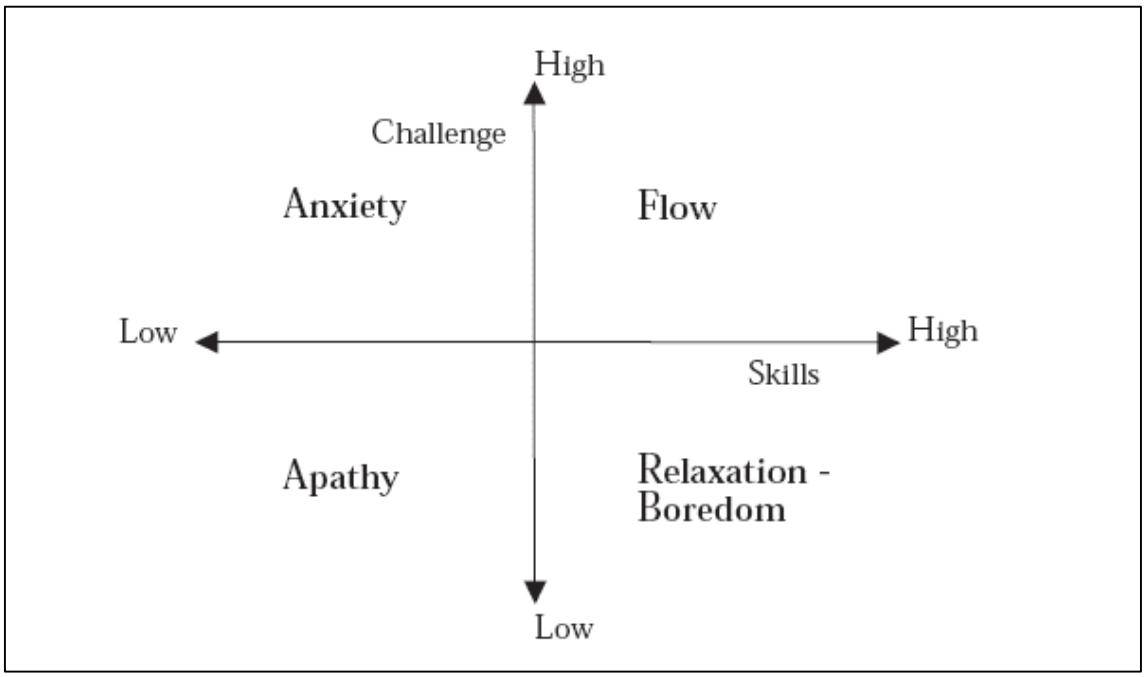
As per Hoffman and Novak (1996), situational and inherent self-relevance work in combination to increase involvement which affects attention and comprehension abilities and this leads to the focused attention which is one of the prerequisite for flow. O'Brien and Toms (2008) also claimed that cognitive tasks requires intense levels of focus and concentration in pursuing, interpreting and summarizing the information to a point where consumers may lose sense of time and space in the process and this state of consumer is flow experience.Past studies established that concentration positively influenced the overall experience of computer users (Novak et al., 2000) and their intention to use a system repeatedly (Webster et al., 1993). This research, therefore, expected that high concentration would have positive impact on experience of flow for the users of the online service.

Research Proposition: Concentration/focus positively influences the user's flow experience while interacting with the brand's online service.

2.3.3.4 Skills and positive challenges

As per Hoffman and Novak (1996), skills and challenges of the online service/task must be perceived as matching and above a critical threshold for flow experience. When skills are higher compared to the task challenges, users feel bored. In contrast, when challenges are higher compared to the user's skill level, the user feels nervous. When both skills and challenges are lower compared to the threshold value, users feel apathy (Zhou, 2012). Allison and Duncan (1988) found that women in white collar job experience powerful flow in work settings rather than home situations and reverse is the case for blue collar women. Authors further suggested that women working on blue collar job experience more flow in home situations as on the work front they encounter repetitiveness and lack of challenges.This argument was in line with argument by Nakamura and Csikszentmihalyi (2014) that an average actor's skill level should be above the challenge, although it would imply that the actor would feel bored.

Figure 1 : Challenge Skill Balance, from S. Jackson and Eklund (2002)



Many studies established that individual skills and the positive challenges offered by an activity or task were the most important predictors of optimal flow experience (Csikszentimihalyi, 1977; Trevino & Webster, 1992; Webster et al., 1993; Hoffman & Novak, 1996). Online service consumption skills are analogous to computer self-efficacy, which cannot be measured through observation or a standardised test, but are perceived by the user (Koufaris, 2002). A past study found that computer self-efficacy, through its effect on the emotional state of the user, reduces computer use anxiety and improves the flow experience (Marakas, Yi, & Johnson, 1998).

In contrast to positive challenges, negative challenges in an online environment like tough navigation, application/Web's slow response time or product/service unavailability can negatively affect the flow (Koufaris, 2002). The process of ascertaining new information and using special online features can invoke a certain level of challenge and excitement to the users (Koufaris, 2002). This is also supported by study of Eroglu et al. (2003) which explored online store environments and concluded that a challenging website experience impacts user's feelings and results in the flow state.

In the new age of technology driven by smart phones, technology operative skills and experience are crucial. Brands are continuously enhancing user interface of their online services which throws a positive challenge for the users to quickly learn and adapt. This

research, therefore, expected that a higher level of skills and positive challenge would have a positive impact on experience of flow for the users of the online service.

Research Propositions:

- Skills and Knowledge positively influences the user's flow experience while interacting with the brand's online service.
- Positive challenges positively influences the user's flow experience while interacting with the brand's online service.

2.3.3.5 Perceived ease of use and perceived usefulness/functional value

Davis (1989) presented The Technology Acceptance Model (TAM) theory to predict the adoption of information technology in the workplace context. The TAM introduced two factors; namely, perceived usefulness (PU) and perceived ease of use (PEOU), which regulate the user's acceptance or rejection of an information technology system (Davis, 1989). TAM, explaining behaviour of online consumers, defined PU as the degree to which a person perceives that adopting the system will improve the task performance, while it defined PEOU as the degree to which a person perceives that adopting the system would be effortless and easy to learn (Wentzel, Diatha, & Yadavalli, 2009).

Perceived usefulness is also referred as functional value (FV) (Koufaris, 2002). One of the main motives for accepting, and motivations of using, a new media type had been that of a functional or information fulfilment (De Vries & Carlson, 2014). Authors further stated that in the context of a brand's online services, a customer satiating a functional satisfaction meant to be able to have access to useful, functional, productive and effective service or content (Jahn & Kunz, 2012). Jahn and Kunz (2012) found a noteworthy, encouraging effect from functional value to usage intensity of the brand's Facebook page. Subsequently, Cvijikj and Michahelles (2014) found that behaviours such as liking, commenting on and sharing the brand's social media posts as well as the period of the collaboration were driven by the attractiveness and usefulness of the information content on a brand's social media pages.

Lee, Tsai, and Lanting (2011) examined factors for user's switch from offline to online banking and found that perceived usefulness, perceived ease of use, offline trust, offline loyalty and switch cost affects user attitude towards switching. Zhou (2012), who carried out study on mobile banking App, noted that due to the restrictions of mobile terminals such as small screens and difficult input, it may be problematic for users to operate

mobile banking if service providers cannot present a decent screen interface to users. Author further mentioned that easy-to-use mobile banking system will also reduce users' struggle spent on learning to use mobile banking and increase their feelings of perceived control. Prior TAM research has identified that perceived usefulness is a more significant predictor of anticipated system usage than perceived ease of use (Davis, 1989; Hsu & Lu, 2004). While Hsu and Lu (2004) and Koufaris (2002) specified flow as a consequence of ease of use, Agarwal and Karahanna (2000) model specified reverse relationship (ease of use as a consequence of flow).

This research believed that these two TAM variables can also be successfully applied in the context of online consumer flow in a new technology context like a smartphone App. Research expected that when customers believe that using the online service will enhance their productivity (perceived usefulness), they will be more likely to experience the flow experience (Koufaris, 2002). Research anticipated the same effect, when customers believe that the online service (mediated by smart device) is easy to use (perceived ease of use).

Research Propositions:

- Perceived ease of use (PEOU) positively influences the user's flow experience while interacting with the brand's online service.
- Perceived usefulness (PU)/Functional Value (FV) positively influences the user's flow experience while interacting with the brand's online service.

2.4 Customer engagement and its linkage to smart devices mediated online environment

In the recent past, customer engagement has emerged as a subject of substantial interest to leaders, advisors and enterprises worldwide (Sashi, 2012). From a psychological point of view, engagement comprises the energy, engrossment and efficiency felt by the individual involved in the experience (Malasch & Leiter, 1997).

Hoffman and Novak (1996) had identified extrinsic and intrinsic motivations as important mediating variables that affect the user engagement. The authors further explained that extrinsic motivation correlated with the goal of achieving valued outcome, whereas intrinsic motivation drove the activities "for no apparent reinforcement other than the process of performing the activity" (p. 17). Extrinsic motivation creates situational self-

relevance, whereas intrinsic motivation create core self-relevance (Hoffman & Novak, 1996). Jahn and Kunz (2012) also mentioned that engaged individuals perceive relevance of the product or service based on intrinsic desires, values, and interests.

2.4.1 Defining engagement

Scholars held different views on the definition and impact of customer engagement. One school of thought theorised customer engagement as a psychological state that was context dependent and characterised by a dynamic iterative processes (Brodie, Ilic, Juric, & Hollebeek, 2013), as well as behavioural indicators beyond mere participation in the transactions (Hollebeek, 2011). Another school of thought pointed out that value experiences may play an instrumental role in motivating subsequent action and this "motivation to act" is engagement (Fishbach, 2009). Jahn and Kunz (2012) pointed out that the motivation orientation of brand customers (such as task-orientation versus experiential-orientation) also impacts the propensity of engagement and flow formation. They mentioned that in the e-retailing environment, task-oriented consumers preferred a simple layout and merchandise presentation, whereas experientially-oriented customers (who want to explore different options) preferred a more exciting layout and presentation. Similarly online applications dealing with consumer finances would find more task-oriented customers requiring easy to understand and operate interface.

Some scholars equated engagement with arousal; however, this does not seem to be the case as arousal may actually decrease with sustained attention (Scholer & Higgins, 2009). They further argued that an individual's strength of engagement in goal pursuit played a critical role in how intensely an individual will value the target, and that value intensity can be influenced by a number of sources of engagement strength. Companies are increasingly looking for consumer engagement (CE) and involvement with their brands as CE is expected to generate improved organisational performance (Hollebeek, 2011) and it is one of the key driver of brand experience. Past studies have shown that online brand engagement platforms like brand fan pages/websites contribute towards the brand commitment and loyalty (Jahn & Kunz, 2012). Customers may display a positive influence on other customers through word of mouth (WOM), interaction, information sharing and assistance activities (Kumar et al., 2010). Customer engagement is now being recognised by many organisations as a strategic imperative that empowers them to develop business performance through the growth of sales, surges in profitability and an overall amplified competitive gain (Brodie et al., 2013). Recent research is focusing on gamification of traditional approaches to customer and

employee engagement to create more affluent and more appealing experiences that stimulate changes in the behaviour of the players involved (Robson, Plangger, Kietzmann, McCarthy, & Pitt, 2016). Authors further mentioned that the challenges for brands adopting gamification are to understand unpredictability of the individual players and their relationship with other stakeholders (spectators and observers) to achieve unique and engaging experiences.

Djelassi and Decoopman (2013) suggested that the role of the consumer has transformed from the product buyer to the company's partner and co-creator of the products/services. The authors further suggested that companies need to open up their processes and business models to the crowd (customers) to gain access to their information and innovation. Nitzan and Libai (2011) however cautioned against using highly engaged customers as a means to co-create the value as they tended to make up a very small minority and their suggestions may not be representative of the entire customer base. Kumar et al. (2010) also argued that loyal and highly engaged customers might turn out to be more costly to serve in comparison to less loyal customers due to their constant engagement and demands with and of the firm.

2.4.2 Customer engagement in online multi-channel environment

In the online environment, consumer engagement was described as an overarching construct, which captures non-transactional behaviour and measures the extent to which consumers provide or share information in the decision-making process during value co-creation (Claffey & Brady, 2014). However there exists differing views and measurements of customer engagement as either being a psychological assessment by the customer, or as actual behaviours displayed (in terms of liking/sharing/commenting, providing feedback and writing social media reviews) on the brand's online content (De Vries, Carlson, & Moscato, 2014).

The online environment allows customers to engage with brands/companies seamlessly and share their knowledge/opinions, which is crucial for new products/services development and quality improvement (Kumar et al., 2010). Customer engagement is gaining more relevance in online environments, as service providers are finding it extremely difficult to hold onto their customers (Enginkaya & Esen, 2014).

Today's businesses are offering multiple offline and online channels for their customers' interaction and engagement purposes. Channel features and elements are central to explaining customer channel choices and usage. The various channels differ in several

factors, including whether they are physical or virtual, their degree of accessibility/convenience and their logistic and switching costs (Dholakia et al., 2010).

Conventionally, most multichannel companies had silo structures, where each channel division operated independently. However, managing channels in silos frequently led to customer confusion (for example, prices, promotions, collections can differ in various channels) and frustration, diluting the value offered to the customer (Sese & Verhoef, 2016). Firms can improve the customer experience in an omni-channel environment by coordinating and integrating their marketing channels.

Customer channel experience has also been considered as a central driver of channel choice and on most occasions, past customer behaviour is a good predictor of future behaviour (Dholakia et al., 2010). Experience leads to learning and habit, which increases the probability of continuing to use the same channels used in the past (Sese & Verhoef, 2016). Authors further stated that past studies have shown that online shopping experiences affect the way customers use and compare channels within and across different chains and that greater internet expertise was positively associated with online channel use. Smart phones, being more personal and intuitive channel, have greater potential to provide engaging online experiences.

2.4.3 Antecedents of customer engagement

Since it is challenging to measure high level construct such as engagement, there exist various schools of thought and research in this area. Past studies have identified brand engagement in self-concept (BSC), usage intensity and brand interaction value to be important antecedents of brand engagement (De Vries & Carlson, 2014; Dholakia et al., 2010; Jahn & Kunz, 2012; Kressmann et al., 2006; Kumar et al., 2010; Malasch & Leiter, 1997; Novak et al., 2000; Richard & Chandra, 2005; Vivek et al., 2012;Webster et al., 1993).

Brand engagement also shares some of the antecedents with flow such as skills, functional value, hedonic value, PEOU; however past literature have identified these antecedents to be strongly related to flow compared to engagement (Cvijikj & Michahelles, 2014; Vivek et al., 2012; Jahn & Kunz, 2012). This research took the most common antecedents from these literatures based on recommendations and importance attached to them in the literature.

2.4.3.1 Brand interaction value and brand self-concept

Loureiro, Ruediger, and Demetris (2012), and Vivek et al. (2012) established that a consumer's strength of association with the brand was an important variable that impacted affection and engagement towards the brand. Perceived brand strength can be explained through the theories of involvement and brand self-concept (De Vries & Carlson, 2014). Within consumer behaviour literature, involvement had been found to be the predictor variable of consumers' behaviour and was largely based on the collaboration of consumers with the commercial websites (Carlson & O'Cass, 2012).

In the internet environment, involved consumers are found to be driven to gain and process more information about the brand; possessing higher experimental behaviour, spending more time in information exploration and conducting online purchases (Balabanis & Reynolds, 2001; Richard & Chandra, 2005). Building on this view, this researcher anticipated the same effect to be applicable to a brand's online services, where higher brand involvement will result in higher perceived brand strength in the customer's mind, which eventually will result in higher consumer engagement intention and behaviour.

Some of the conceptual research in the field argued that through the engagement, customers were able to create a better experience for themselves in collaboration with the brand and could create more value (De Vries et al., 2014). When the brand becomes an integral part of the consumer's life, a relationship or bond grows between the consumers and their brand. This results in the brand self-concept (BSC), which describes the consumer tendency to include important brands as part of one's self-concept (Flynn, Goldsmith, & Korzenny, 2011).

Regarding a consumer's psychological image of a brand, the congruence between self-image and brand image had been widely studied in the literature (Sirgy, Grewal, & Mangleburg, 2000; De Vries & Carlson, 2014). Brand self-concept refers to the match between a consumers' self-concept and the 'personality' of a brand perceived by the customer. When the match is high, it will lead to increased brand preference and fidelity as well as precedence for engagement such as attitude, preference and intention (Kressmann et al., 2006). Building on this reasoning that self-image congruence between an individual and the brand is an important factor in understanding brand preference; this study anticipated the same effect with a brand's online services, where it acts as a driver, which influences the tendency for usage intensity and engagement with the brand.

Businesses who want to sell goods and services, while creating brand loyalty, brand self-concept (BSC) is certainly an important concept (Flynn et al., 2011). Sprott, Czellar, and Spangenberg (2009) tested this concept in five studies and found that consumers scoring high on BSC had more accessible memories of their favorite brands, felt stronger relations between themselves and those brands, were able to recall more on currently owned brands and were more brand loyal than are low scorers.

Research Propositions:

- Brand interaction value (BIV) positively influences user's engagement with the brand's online service.
- Brand Self-concept (BSC) value positively influences user's engagement with the brand's online service.

2.4.3.2 Usage intensity

It was expected to find an association between online service usage intensity and consumer engagement as a logical consequence of a customer using a brand's online services more frequently (Jahn & Kunz, 2012; De Vries & Carlson, 2014). However, some studies found that it was likely for a consumer to be a persistent user of a particular online service without becoming an integrated and participating member (Jahn & Kunz, 2012).

Furthermore, it had been empirically found that users who were in regular touch with the brand and consequently had the high levels of usage intensity, would enhance their brand relationship and therefore they were more likely to engage in word-of-mouth, repurchase or other loyalty and brand-related behaviours (De Vries & Carlson, 2014). Vivek et al. (2012) also postulated that consumer engagement is related to the intensity of an individual's involvement with an organisation's offerings and activities initiated by either the customer or the firm. In this study, we theorised that higher usage intensity leads to consumer engagement with the brand's online services.

Research Proposition:

- Usage intensity value (UI) positively influences user's engagement with the brand's online service.

2.5 Brand engagement and loyalty

As per Kotler and Keller (2012), the main purpose of brand creation, by organizations, is to generate the customer loyalty. Koufaris (2002) mentioned that customer's loyalty on the web is low overall as online customer is more dominant, demanding and utilitarian in shopping journeys. Past studies have shown that online brand engagement platforms like brand fan pages/websites contribute towards the brand commitment and loyalty (Jahn & Kunz, 2012).

Empirical studies examining brand engagement, trust and loyalty intentions in e-commerce indicated that e-service organizations that build greater engagement and trust with their customers should have higher probability of increased customer spending, intention to purchase and return visits which all are precursor to brand loyalty (Arnott, Wilson, Mukherjee, & Nath, 2007). Dholakia et al. (2010) however cautioned that customer's brand experience on all channels need to be consistent otherwise customer loyalty can be affected. In this study, we theorised that higher brand engagement leads to consumer loyalty with the brand's online services.

Research Proposition:

- Brand Engagement value positively influences Brand Loyalty.

2.6 Brand engagement and flow experience

While the construct of flow had been defined as activity specific and the construct of engagement was defined at a more generalised level, both had been identified as quite similar concepts in the few of the literatures (Schaufeli & Salanova, 2007).

Kahn (1990) postulated that engagement was the underlying factor for mindfulness, flow and intrinsic motivation in an individual. Bakker, Demerouti, and Schaufeli (2005) supported the view by suggesting that flow was a peak experience of engagement. On the other hand, Shernoff, Csikszentmihalyi, Shneider, and Shernoff (2003) found in their study with school students that engagement occurred when students experienced flow in their study assignments. Due to the similarities between the two constructs and the way in which they had been defined, there were differing viewpoints in the literature as to whether flow causes engagement or engagement causes the flow; however, there was no empirical evidence as to their redundancy.

Balance between skills and challenges is one of the important antecedent of flow experience (Nakamura & Csikszentmihalyi, 2014). Engagement studies have shown that engaged employees seek challenges in their jobs and when they no longer experience any challenge, they start searching for another job (Schaufeli & Salanova, 2007). This showed that challenge and skill balance was also an important characteristic of peak user engagement.

Immersion in or concentration on work can be seen in both flow and engagement. Schaufeli and Salanova (2007) posited immersion as the degree to which people were fully concentrated on and favourably engrossed in one's work and one has difficulty detaching oneself from work. Meyer, Becker, and Vandenberghe (2004) found that engaged workers experienced better emotional and physical well-being and they displayed better organisational citizenship behaviours. Eisenberger, Jones, Stinglhamber, Shanock, and Randall (2005) found similar results for flow experience.

Apart from similarities, there are some differences between engagement and flow. Flow is short term and more acute than engagement and therefore a more intense state of captivation, whereas engagement contains absorption, which is more persistent rather than a peak experience of flow (Christian & Slaughter, 2007).

Flow also causes people to experience a sense of control over what they are doing, which was not detailed in the engagement literature. The reason for this is that flow is focused upon a specific activity, while engagement is not constrained to one single task and rather represents a general involvement in work (Schaufeli & Salanova, 2007). Thus, it was hypothesised that flow and engagement are highly correlated constructs and engagement is an antecedent to flow experience.

Involvement and attention are common qualities of flow experience, peak experience and peak performance, but involvement is not identical to the flow construct (Hoffman & Novak, 1996). From the customer perspective, individual consumer characteristics such as a consumer's positive perception and involvement with the brand may be a precursor to the formation of flow. Previous studies have shown that highly involved consumers positively influence consumer decision-making, including devoting more time on information processing and online engagement behaviour (Jahn & Kunz, 2012).On this basis, highly involved consumers are more likely to be engrossed in the online brand engagement, leading to opportunities to experience flow.

Research Proposition:

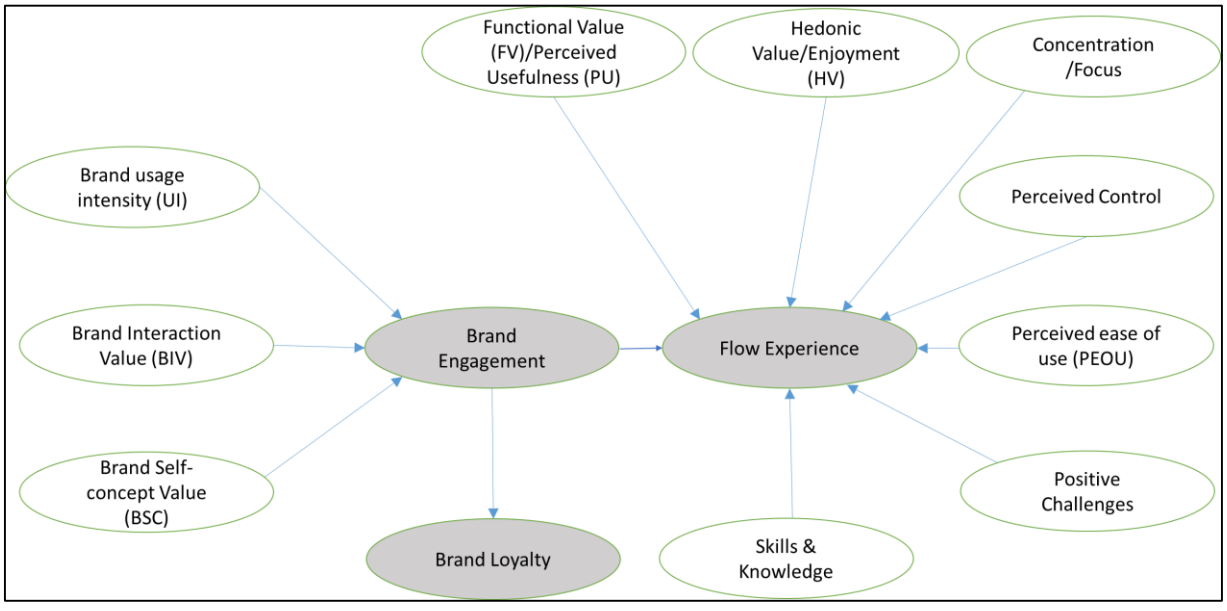
- Brand Engagement value positively influences the user's flow experience while interacting with the brand's online service.

2.7 Conclusion to Literature Review

This chapter started with discussing brands and their service experience. Then it moved on to discuss the concept of flow experience. It considered definitions of flow, flow measurement methods and antecedents of flow experience (hedonic value, perceived control, focus, skills, positive challenges, perceived usefulness and perceived ease of use). On the consumer engagement construct, it discussed contemporary definitions, measurement of the engagement, and engagement in online multi-channel environment and concluded with antecedents of engagement (usage intensity, brand interaction value and brand self-concept). Finally, customer engagement's linkage with brand loyalty and flow experience was discussed.

Error! Reference source not found. below shows the finalized theoretical model proposed based on the literature review:

Figure 2 : Brand Engagement and Flow Theoretical Model



The following chapter will draw research propositions from the discussion that occurred in this chapter.

CHAPTER 3: RESEARCH PROPOSITIONS

Based on the research problems identified in chapter 1 and based on related literature review in chapter 2, the following research propositions are derived:

Following research propositions will help to answer research problem 1: Which antecedents are the strongest predictor of flow experience during brand's online service consumption mediated by smart devices?

Table 1 : Research Propositions for Flow Antecedents

No.	Research Proposition	Related Constructs from Literature Review
P1	Hedonic value (HV)/enjoyment positively influences the user's flow experience while interacting with the brand's online service.	Hedonic value (HV)/enjoyment, flow experience
P2	Perceived control positively influences the user's flow experience, while interacting with the brand's online service.	Perceived control, flow experience
P3	Concentration/focus positively influences the user's flow experience while interacting with the brand's online service.	Concentration/focus, flow experience
P4	Skills and knowledge positively influences the user's flow experience while interacting with the brand's online service.	Skills and knowledge, flow experience
P5	Positive challenges positively influences the user's flow experience	Positive challenges, flow experience

	while interacting with the brand's online service.	
P6	Perceived ease of use (PEOU) positively influences the user's flow experience, while interacting with the brand's online service.	Perceived ease of use (PEOU), flow experience
P7	Perceived usefulness (PU)/functional value (FV) positively influences the user's flow experience, while interacting with the brand's online service.	Perceived usefulness (PU)/functional value (FV), flow experience

Following research propositions will help to answer research problem 2: Which antecedents are the strongest predictor of user engagement during brand's online service consumption mediated by smart devices?

Table 2 : Research Propositions for Engagement Antecedents

No.	Research Proposition	Related Constructs from Literature Review
P8	Brand interaction value (BIV) positively influences the user's engagement with the brand's online service.	Brand interaction value (BIV), brand engagement
P9	Brand Self-concept (BSC) value positively influences the user's engagement with the brand's online service.	Brand self-concept value (BSC), brand engagement

P10	Usage intensity value (UI) positively influences user's engagement with the brand's online service.	Brand usage intensity (UI), brand engagement

Following research propositions will help to answer research problem 3: Does customer engagement in the online environment lead to the experience of flow and loyalty?

Table 3 : Research Propositions for Engagement's Effect

No.	Research Proposition	Related Constructs from Literature Review
P11	Brand Engagement value positively influences brand loyalty.	Brand engagement ,brand loyalty
P12	Brand engagement value positively influences the user's flow experience while interacting with the brand's online service.	Brand engagement, flow experience

The following chapter discusses the research methodology adopted in this study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the methodology implemented for conducting this study, and includes the research methodology, research design, population and sampling, research assumptions, data collection process, data analysis as well as research limitations.

4.2 Research design

Research design is the intended procedures of inquiry and is used as a guide for inspecting the research problem and to answer the research questions (Creswell, 2013).

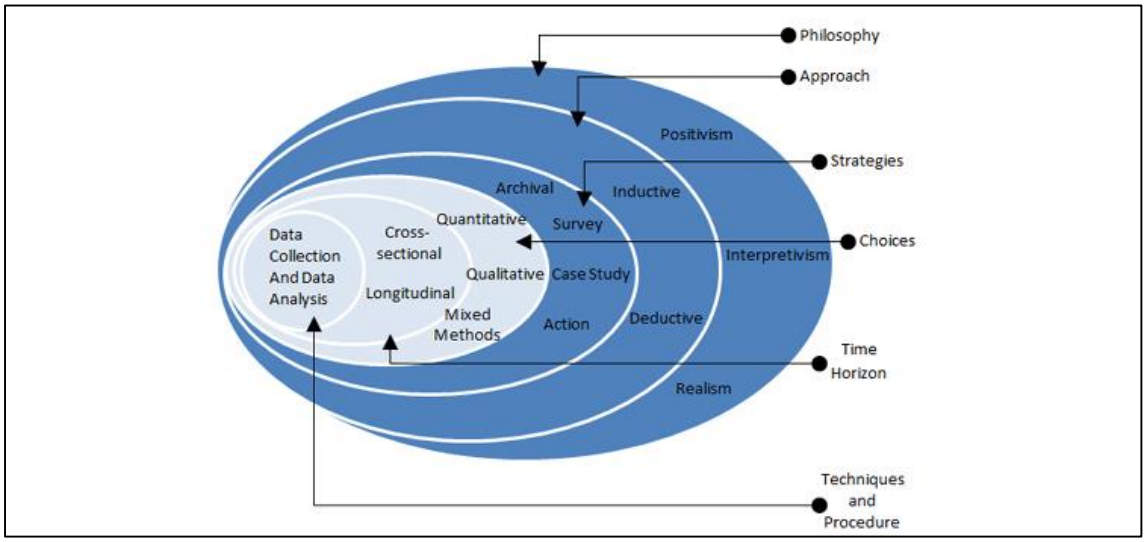
Qualitative and quantitative research approaches diverge in that a qualitative approach sets out to explore and understand the meaning that participants attribute to a problem, whereas a quantitative approach investigates objective theories by examining the association among variables (Creswell, 2013). Furthermore, the use of a questionnaire as a data collection instrument lends itself to a quantitative research design (Saunders & Lewis, 2012). Based on the nature of the research propositions, this study took on the quantitative design to identify, analyse and describe the correlation between customer engagement, flow experience and their antecedent factors.

This study took the form of descriptive research, which provided truthful account of characteristics of a particular individual, event or group in real-life situations (Saunders & Lewis, 2012). A descriptive design may be used for the purpose of developing theory, identifying problems with current practice, vindicating current practice, making judgements, or determining what others in similar situations are doing (Saunders & Lewis, 2012). Malhotra (2008) argued that the selection of the research methodology is dependent on the accuracy of the problem defined and the conviction of the researcher's belief about the problem and that all studies do not need to start with exploratory research. The problem of this study was well defined, so descriptive research methodology was used.

The research onion diagram depicted in Figure 3 served as a route map to guide the research process. The outer most layer of research onion talks about research

philosophy. The adopted research philosophy contains important assumptions about the way researcher views the world and these assumptions inform the research strategy and the data collection methods (Saunders & Lewis, 2012). This research used positivism as a research philosophy as its purpose was to study observable and measurable variables (Brand engagement and flow constructs) in controllable conditions.

Figure 3 : The Research Onion Diagram - Saunders and Lewis (2012)



The second layer of the onion talks about the research approach. A deductive research approach was deemed most appropriate for this research as it involves testing of the theoretical proposition by using a research strategy specifically designed for its testing and to generalise and operationalise the research findings (Saunders & Lewis, 2012).

The third layer of the onion focuses on the research strategy. According to Zikmund (2003), a primary data collection method should be employed for marketing related data as it helps to uncover the current consumer trends. In addition, a deductive research approach often results in the use of surveys (Saunders & Lewis, 2012). Due to above reasons, this study used a survey research strategy. A structured questionnaire in English was used to collect the primary data (Saunders & Lewis, 2012) for purposes of testing the propositions defined in Chapter 3.

The fourth layer of the onion talks about the methodology choice. Quantitative research methodology produces findings that are independent of the researcher and the provided data is precise and numerical (Johnson & Onwuegbuzie, 2012). One of the major strengths of using the quantitative method is that the testing hypotheses/propositions are built before data collection, which can result in generalisation of research findings;

in cases where the data is based on sufficient size random samples (Johnson & Onwuegbuzie, 2012). Due to quantified nature of the data, the quantitative research methodology was adopted and designed to study the research problems.

The fifth layer of the research onion talks about the time horizon of the research. Any cross-sectional research studies a particular phenomenon (or phenomena) at a particular time, while a longitudinal study is an observational research method in which data is gathered for the same subjects repeatedly over a period of time (Saunders & Lewis, 2012). This study took on a cross-sectional sampling approach which resulted in the samples being measured at a specific point in time only (during the month of September 2016). The cross-sectional study was suitable because of the time constraints. The core of the research onion comprises data collection and data analysis which are discussed in the sections below.

4.2.1 Target population

Zikmund (2003) defined a population or universe as a complete group of entities sharing some common set of characteristics. This research aimed to establish antecedents of engagement and flow constructs and their interplay during online product/service consumption scenario. The population for this study was all South African consumers (18 years or older) who consumed online product/service mediated by smart devices.

Zikmund (2003) further defined the target population as the complete group of specific population elements relevant to the research problem. This study focused on mobile App as online service mediating environment. According to Iab South Africa (2014), banking/investments mobile Apps were one of the most frequently used Apps by South African users and about 20% of smartphone users did their banking and finance related purchases using their smartphone's convenience. To this effect, the target population was identified as all individuals (18 years or older) who used mobile banking App of any South African bank on their smartphone.

4.2.2 Unit of analysis

Zikmund (2003) described the unit of analysis as the major entity that is being analysed in a study. The unit of analysis was the individual who used a mobile banking App on their smartphone.

4.2.3 Sampling method

A sample refers to “a subgroup of the whole population” (Saunders & Lewis, 2012, p. 132). Zikmund (2003) defined a sample as a small number of items or a percentage of a population to arrive at a conclusion regarding the whole population. The method used to select an appropriate sample is dependent on whether or not the total population is known and whether a complete list of all its members, namely the sample frame, is available to the author (Saunders & Lewis, 2012).

Due to the nature of the population specified for this study, a sampling frame did not exist at the time of the study. As a result, a non-probability sampling technique was used to obtain the sample for this study.

4.2.4 Sampling technique

The sampling technique for this study was purposive or judgemental sampling. Purposive sampling allows the researcher to use the judgement to select cases that will help to answer the research question(s) and to meet research objectives (Saunders & Lewis, 2012).

This research approached young working population primarily under the age of 35 with the assumption that they will have more affinity towards using latest technology such as smart phones and they will be more inclined to use mobile banking App. The disadvantage of using purposive sampling was that the sample cannot be considered to be statistically representative of the total population (Zikmund, 2003).

4.2.5 Sample size

Due to the fact that the data analysis was performed by employing structural equation modelling (SEM), a large sample was required in order to simultaneously examine the relationships between the multiple variables and to produce reliable results. (Hair, Black, Babin, & Anderson, 2009) highlighted the importance of thorough consideration of the elements of research design that are critical for a successful SEM analysis, the salient consideration being the sample size. According to these authors, a larger sample size contributes to less variability and cross-cultural stability in the results.

Jackson (2003) had postulated a rule of thumb, applicable to the relation between sample size and model complexity, namely the ‘n:q rule’, from which the minimum

sample size should be determined in terms of the ratio of respondents to the number of independent variables. While an ideal sample size-to-independent variables ratio would be 20:1, an n:q ratio of 10:1 would be sufficient (Jackson, 2003). Based on the number of variables used in this study, namely 41, and applying the n: q ratio of 10:1, as referred to above, the intended sample size was 410. However due to time constraints of this study, the intended sample size was not feasible to achieve.

Kline (2011) had stated that a typical sample size in studies where SEM is applied should be approximately 200, which corresponds to the median sample size for surveys referred to in 165 previously published articles in personality/social psychology journals and management science journals in which SEM results were reported. Final sample size was 274, however after removing ineligible cases final sample of 202 was used for SEM analysis.

4.2.6 Sample study method

A structured, self-completed questionnaire was created, using the online survey software and questionnaire tool, Google forms, which focused on the drivers/antecedents of user engagement and flow experience when using a mobile banking App. The questionnaire template is included in Appendix A.

The survey strategy allowed the exploration of the relationships between the variables (antecedents of engagement and flow experience) and enabled the testing of the propositions defined in Chapter 3 (Zikmund, 2003). The questionnaire included a cover note that contained a brief description of the study and confidentiality declaration, and comprised twelve sections. The advantages of making use of a self-administered survey include the simplicity to administer, code, analyse and interpret the results; the reliability of the data because of the limited alternative answers as compared to the other methods (Malhotra, 2008). According to the author, a disadvantage of using surveys is that opinions and feelings are difficult to articulate by means of a structured and fixed alternative response; and, the effective way of wording questions are challenging.

The first section of the questionnaire focused on demographic information and included, among others, filter questions relating to smartphone ownership and access to mobile banking App to determine respondent eligibility. Respondents who were not accessing any mobile banking App on their smartphone were deemed ineligible for the study and these cases were consequently removed.

The remaining sections aimed to test the propositions related to user engagement perceptions (Brand engagement in self-concept, usage intensity and brand interaction value), brand loyalty perceptions and flow experience (Functional value/perceived usefulness, hedonic value, perceived control, perceived ease of use, skills & knowledge, positive challenges and concentration) by posing 41 closed-ended questions to be answered using a five-point Likert scale, as discussed below.

The measurement items for each of the 11 constructs, all of which were adapted from established measurement scales for the current research context, are set out below.

4.2.7 Skill and knowledge perceptions

Measurement items relating to skill and knowledge perceptions were derived from a scale developed by Koufaris (2002) and Zhou (2012). The respective items are shown in Table 4 below.

Table 4 : Skill and Knowledge Measurement Items

No.	Scale Item	Construct	Source
1	I have the skills to use the mobile banking App.	Skill and knowledge perception	Koufaris (2002), Zhou (2012)
2	I feel knowledgeable about using the mobile banking App.		
3	Compared to most other people, I know more about using the mobile banking App.		

4.2.8 Functional value/ perceived usefulness

Measurement items relating to functional value/usefulness were derived from a scale developed by Koufaris (2002) and Wentzel et al. (2009). The respective items are shown in Table 5 below.

Table 5 : Functional Value Measurement Items

No.	Scale Item	Construct	Source
1	I frequently use the mobile banking App.	Functional value/perceived usefulness	Koufaris (2002), Wentzel et al. (2009)
2	The content on the mobile App is useful for me.		
3	Using the mobile App can improve my banking productivity.		
4	The features on the mobile App are practical for me.		
5	Information on the mobile App is effective.		
6	The mobile App adequately meets my information needs to make informed decisions.		

4.2.9 Hedonic value/enjoyment

Measurement items relating to hedonic value/enjoyment were derived from a scale developed by Koufaris (2002) and Cao et al. (2005). The respective items are shown in Table 6 below.

Table 6 : Hedonic Value Measurement Items

No.	Scale Item	Construct	Source
1	The content on the mobile App is fun.	Hedonic value/enjoyment	Koufaris (2002), Cao et al. (2005)
2	The content on the mobile App is interesting.		
3	The content on the mobile App is enjoyable.		

4.2.10 Brand interaction value:

Measurement items relating to brand interaction value were derived from a scale developed by De Vries and Carlson (2014), and Jahn and Kunz (2012). The respective items are shown in Table 7 below.

Table 7 : Brand Interaction Value Measurement Items

No.	Scale Item	Construct	Source
1	I can interact with the bank using the mobile App.	Brand interaction value	De Vries and Carlson (2014) ; Jahn and Kunz (2012)
2	I can interact with the bank using the mobile App.		
3	The mobile App ensures that I have easy access to the bank at any time.		
4	The mobile App ensures rapid response standards to effectively deal with any enquiry I may have.		
5	The mobile App delivers add-in values (e.g. special offers, member programs) to keep me loyal to the bank.		

4.2.11 Concentration/focus perception

Measurement items relating to concentration/focus perception were derived from a scale developed by Koufaris (2002) and O'Brien and Toms (2008). The respective items are shown in Table 8 below.

Table 8 : Concentration Measurement Items

No.	Scale Item	Construct	Source
1	While interacting with the mobile App, my attention is focused on what I am doing on the App.	Concentration/focus perception	Koufaris (2002), O'Brien and Toms (2008)
2	While interacting with the mobile App, I concentrate fully on the activity.		
3	While interacting with the mobile App, I am deeply engrossed in the activity.		

4.2.12 Perceived control perception

Measurement items relating to perceived control perception were derived from a scale developed by Koufaris (2002) and Mollen and Wilson (2010). The respective items are shown in Table 9 below.

Table 9 : Perceived Control Measurement Items

No.	Scale Item	Construct	Source
1	While interacting with the mobile App, I feel in control.	Perceived control	Koufaris (2002), Mollen and Wilson (2010)
2	While interacting with the mobile App, I feel calm and in command.		

4.2.13 Positive challenges perception

Measurement items relating to positive challenges perception were derived from a scale developed by Koufaris (2002) and Zhou (2012). The respective items are shown in Table 10 below.

Table 10 : Positive Challenges Measurement Items

No.	Scale Item	Construct	Source
1	Using the mobile App challenged me to perform to the best of my ability.	Positive challenges perception	Koufaris (2002), Zhou (2012)
2	Using the mobile App provided a good test of my skills.		
3	Using the mobile App stretched my capabilities to the limits.		

4.2.14 Perceived ease of use

Measurement items relating to perceived ease of use were derived from a scale developed by Koufaris (2002) and Wentzel et al. (2009). The respective items are shown in Table 11 below.

Table 11 : Perceived Ease of Use Measurement Items

No.	Scale Item	Construct	Source
1	Learning to use the mobile App would be easy for me.	Perceived ease of use	Koufaris (2002), Wentzel et al. (2009)
2	My interaction with the mobile App is clear and understandable.		
3	It would be easy for me to become skilful at using the mobile App.		
4	I find the mobile App easy to use.		

4.2.15 Perceived Usage Intensity

Measurement items relating to perceived usage intensity were derived from a scale developed by De Vries and Carlson (2014), and Jahn and Kunz (2012). The respective items are shown in Table 12 below.

Table 12 : Usage Intensity Measurement Items

No.	Scale Item	Construct	Source
1	I am an engaged user of the mobile App.	Perceived usage intensity	De Vries and Carlson (2014), and Jahn and Kunz (2012)
2	I am an active user of the mobile App.		
3	I am an interacting user of the mobile App.		

4.2.16 Brand Self-concept Value

Measurement items relating to perceived brand self-concept value were derived from a scale developed by De Vries and Carlson (2014), and Claffey and Brady (2014). The respective items are shown in Table 13 below.

Table 13 : Brand Self-concept Measurement Items

No.	Scale Item	Construct	Source
1	The bank brand is significant to me.	Brand self-concept value	De Vries and Carlson (2014), Claffey and Brady (2014)
2	I consider this bank brand to be a relevant part of my life.		
3	This brand is a lot like me.		
4	I am involved in/with this bank brand.		
5	This brand reflects what I am.		
6	The bank brand image corresponds to my self-image in many respects.		

4.2.17 Brand Loyalty Perception

Measurement items relating to perceived brand loyalty perception were derived from a scale developed by De Vries and Carlson (2014) and, Jahn and Kunz (2012). The respective items are shown in Table 14 below.

Table 14 : Brand Loyalty Measurement Items

No.	Scale Item	Construct	Source
1	I recommend this brand (bank) to other people.	Brand loyalty perception	De Vries and Carlson (2014), and Jahn and Kunz (2012)
2	This brand (bank) is my first port of call for financial services.		
3	I intend to remain loyal to this brand (bank) in the future.		

4.2.18 Rating scale

All the established scales of the variables were sourced and tested on a five-point Likert scale with 1 being “strongly disagree” and 5 being “strongly agree” as anchors. Kline (2011) suggested that respondents are able to reasonably distinguish between scale values, which minimises respondent errors when 5 to 10 points on a scale are used. Data obtained through a Likert scale can be treated as interval data, offering the benefits of characteristics of description, order and distance. This study met the above criteria.

A Likert scale further holds the advantage of familiarity. However, since each question needed to be understood before selecting the answer, it takes longer to complete (Kline, 2011). The scale used for this current study was balanced (equal number of negative and positive categories) and also included a neutral category, and therefore, an odd number of categories was adopted. The scale scores were subsequently calculated and analysed for interpretation.

4.2.19 Pilot test

Prior to distributing the questionnaire, a pilot test was conducted (n = 20) in order to establish the reliability and validity of the measurement scales (Zikmund, 2003). The other purpose was to identify any questions the respondents had found to be ambiguous or difficult to understand, and to remove any duplicate items. The pilot test was conducted by circulating a web link of the questionnaire to a sample similar to the target population through e-mail and implemented adjustments as and when responses were received.

Following receipt of the pilot respondents' feedback, the following amendments were made to the questionnaire:

- Heavy academic words were removed from the cover note and survey title;
- A couple of double-barrelled questions were simplified to concentrate on only one issue at a time;
- The language of some questions was simplified to increase readability and comprehension

Furthermore, mindful of the observations of Iglesias, Singh, and Batista-Foguet (2011), it was decided to not make use of reverse coding or negative statements as it affected the reliability of the results. The internal consistency reliability was measured using Cronbach's alpha coefficient for all 11 constructs, which exhibited high levels of internal consistency for the scale (> 0.80). The pilot test was cost effective to improve and easy to control. By conducting a pilot study, the author had the opportunity to evaluate the suitability of the research methodology and to make any necessary amendments ahead of launching the detailed study (Saunders & Lewis, 2012).

4.3 Data Collection, Analysis and Management

4.3.1 Data Collection

Subsequent to the pilot test, primary data was collected using the self-completed, web-based survey questionnaire, the initial set of which was distributed to friends, fellow students and work colleagues over a four-week period commencing in the month of September 2016, after which the survey was closed and no further responses were collected.

To maintain an ethical nature of the survey, a cover letter of the survey informed the respondents of the purpose of the survey, its duration, their voluntary participation and the confidential nature of the study. Only participants older than 18 years of age could participate in the study. The data collection process only commenced once formal approval to conduct this study had been obtained from the Research Ethics Committee of the Gordon Institute of Business Science.

This method allowed the gathering of a large amount of data from a large population in a highly cost-effective, practical and time efficient manner (Saunders & Lewis, 2012).

The use of the online data collection tool, Google Forms, enabled the capturing of responses in real time. The use of a self-completed web-based questionnaire, which respondents completed anonymously, eliminated interviewer bias, acquiescence bias, and social desirability bias. In addition, in order to reduce the item non-response rate, all the questions in the survey were marked as mandatory (except income question).

Furthermore, the use of an online survey was deemed suitable, as it enabled the author to economically reach a wide demographic range, obtain a large sample over a short period of time, exercise strong procedural control, and limit contact with respondents (Evans & Mathur, 2005). A disadvantage of online surveys is that they tend to generate low response rates. In order to mitigate this risk, potential respondents received regular reminders along with the assurance that their participation was voluntary. By end of September 2016, a total of 274 responses were received.

4.3.2 Data Analysis

The collected data was analysed using a statistical software programmes, namely the IBM Statistical Package for the Social Sciences (SPSS) version 24, and AMOS graphics version 24, which allowed the author to perform descriptive and inferential statistics for the purposes of testing the research propositions (Creswell, 2013). The data analysis involved using Structural Equation Modelling (SEM) as a statistical tool. SEM refers to a group of statistical models that were used as a means to simultaneously analyse hypothesised relationships among multiple variables (Hair et al., 2009). In this study, the variables included antecedents (a total of 10 latent variables) of user engagement, flow experience and loyalty. Multivariate analysis enabled the assessment of the suggested relationship between constructs or latent variables (Hair et al., 2009) as well as to assess and adapt theorised model.

Step 1: Preparation of data

Malhotra (2008) highlighted that the data-preparation process is an important step in the research process, which entails editing or cleaning as well as coding. The data was first transferred from Google Forms into Microsoft Excel format, from where it was finally imported into SPSS.

A codebook, which refers to the variables in the dataset, was developed and is set out in Appendix B: The Code book. The responses were inspected to confirm compliance to

the sample criteria and to identify any missing data. The occurrence of missing data was limited by the use of the forced ranking feature. No reverse-coded or negative statements were included in the questionnaire, which would have required additional editing to align with the rest of the instrument. However, this did allow for the bias in responses like consistently marking one end of the scale, either acquiescence bias or central (in this case, positive) tendency bias.

Step 2: Demographic statistics

The demographic distribution of the sample (274 in total) was then compiled to provide a description of the sample, including age, gender, monthly income, and multi-banking as presented in Chapter 4. On further investigation, 61 cases were found ineligible for further analysis (user either did not own a smartphone or did not access any banking App on the smartphone), so they were removed from SEM analysis. Out of remaining 213 cases, 11 cases had marked only one value on Likert scale (either 3, 4 or 5) for all 41 constructs measures. These cases were removed from the final analysis, as they were not considered as well well-thought-out responses. The final SEM analysis was carried out on 202 responses.

Step 3: Assessment of measurement model

As a first step in assessing the proposed measurement model, confirmatory factor analysis (CFA) was employed, using the AMOS statistical software in terms of which statistical tests were performed to evaluate the extent to which the variables represent each of the respective latent constructs. Factor analysis is a useful tool for investigating variable relationships for complex concepts such as customer engagement and the flow construct. Factor analysis was used as it allowed the researcher to investigate concepts that are not easily measured directly by summarizing a large number of variables into a few underlying factors (Kline, 2011).

Descriptive statistics, including the computing of skewness and kurtosis, were employed to evaluate data normality. The measurement model was assessed to confirm model fit as well as reliability and validity, which were fundamental to the assessment of the measurement instrument (Tavakol & Dennick, 2011).

Reliability in the context of this research referred to the degree in which data collection methods and investigation produced reliable findings (Saunders & Lewis, 2012). As demonstrated, construct measures in this study had been derived from the previous studies. This ensured validity and reliability of the measurement instrument. This

research used the Cronbach's alpha analysis technique to test the reliability of the instrument.

Zikmund (2003) reiterated the importance of relevancy, accuracy and clarity in the questions posed to respondents, as any haziness or misunderstanding can endanger the reliability of the research. An effort to prevent some of these drawbacks was undertaken by means of a pre-test of the questionnaire, where not only responses to the questions, but feedback around the understanding, descriptions, timing or purposes were assessed.

To evaluate the correctness of the proposed model contained in this study in explaining the user engagement and its impact on flow experience for consumers in South Africa, it was appropriate to establish a suitable goodness-of-fit measure for the proposed model to the empirical data. Of the various goodness-of-fit measures to assess the fit of a theoretical model to the observed data, RMSEA and CFI are the more commonly used fit indices (Kenny, Kaniskan, & McCoach, 2014). However, Kenny et al., (2014) also suggested using multiple fit indices to concurrently evaluate overall model fit in order to avoid the possibility of improper solutions, as some indices work better under certain conditions. When analysing the goodness-of-fit of the suggested model, the measurement model was compared to the recommended cut-off values, as discussed in Chapter 5.

Step 4: Assessment of structural model

Structural Equation Modelling (SEM) was used to estimate dependence relationships amongst a set of constructs represented by multiple measurement variables, and incorporated such into a model (Malhotra, 2008). Also recognised as covariance structure analysis, SEM was preferred to multiple regression analysis because the latter can only predict one construct at a time and not simultaneously, and joint correlations between predictor or observable constructs are not taken into account (Hooper, Coughlan, & Mullen, 2008).

The final step in the data analysis process was to assess the proposed structural model by evaluating the correlations between the variables that comprised the proposed measurement model and the extent to which each variable could be regarded as a predictor of the engagement and flow experience and relationship between these two second order constructs. To test these propositions against the data gathered from the measurement instrument, namely the online questionnaire, structural equation modelling was employed as the primary data analysis method.

4.3.3 Assumptions

The researcher remained mindful of the following assumptions pertaining to the study:

- Respondents were truthful in their responses and offered accurate reflections of agreement or disagreement with the statements indicated in the questionnaire;
- Respondents were not biased in their responses, offering a more positive evaluation than their actual perceptions;
- Respondents were not influenced by their perception around a business school evaluating the experience of their bank brand and their engagement level.

4.4 Potential Research Limitations

One of the limitation to this study was the selected research design. The study measured flow experience and user engagement with a mobile banking app. This study took place in South Africa and was limited to the users of a bank, who had technology affinity and who were open to using technology such as the mobile banking app. The study employed a nonprobability sampling technique (snowball sampling). It can be argued that snowball sampling technique has potential issue of selection bias, which could result in a homogenous sample due to the fact that respondents were likely to identify others who are similar to themselves (Saunders & Lewis, 2012). As such, carefulness is essential in trying to generalise these findings. Further research could explore and compare the key constructs of this research with consumer evaluations across a variety of industry sectors that deliver e-services through a mobile App (for example telecom, insurance, retail, government) to further understand the underlying nature of flow, user engagement and its effects.

This study was also dependent on the quality of the mobile banking App provided by leading banks in South Africa. Different mobile apps have different features and a poorly designed App might impact user engagement and flow experience. Since the survey participants did not have the same frame of reference, the survey results were heavily dependent on the mobile App's sophistication of the individual's bank.

An additional limitation to the research was the time horizon used in the study. This study took on a cross-sectional sampling approach, which resulted in the samples being measured at a specific point in time only (during September 2016). However, due to the evolving nature of mobile technology and its continued advancement, longitudinal

research should be considered to further understand changes in consumer experience, which would help account for changes in the technology (Hausman & Siekpe, 2009). Also as no variables were manipulated or controlled in the research design, causal relationship among the variables could not be inferred (Zikmund, 2003).

4.5 Conclusion to Research Methodology

This chapter described the research methodology employed in order to achieve the research objectives set out in Chapter 3. The research methodology decisions applied are set out in summarised format in Table 15 below.

Table 15 : Summary of research methodology and design elements

Design element of the Research	Research Methodology Decision
Research Design	Deductive, Descriptive research
Scope	Greater Johannesburg
Population	All individuals (18 years or older) who uses mobile banking App of any bank on their smartphone.
Sampling Frame	Unavailable
Unit of Analysis	Individuals who uses a mobile banking App on their smartphone.
Sampling Method	Purposive judgment sampling (non-probability sampling)
Sample Size	374 responses (302 final responses for SEM analysis)
Research Strategy	Self-administered survey: electronic/online
Time Frame	cross-sectional study during the month of Sep 2016
Statistical Tools	IBM SPSS and AMOS Version 24
Statistical Method	Structural equation modelling (SEM)

The next chapter presents the research results based on the responses to the survey used to collect quantitative primary data for purposes of testing the propositions defined in Chapter 3.

CHAPTER 5: RESULTS

5.1 Introduction

Chapter 4 set out the research methodology engaged for this study, including a detailed discussion regarding the research design and justification for the use thereof in this study. This chapter presents the research results based on the responses to the survey used to collect quantitative primary data for purposes of testing the propositions defined in Chapter 3.

The demographic composition of the sample is analysed, followed by evaluation of the reliability and validity of the proposed model, and an analysis of the descriptive statistics of each variable. The chapter then turns to the testing of each proposition defined in Chapter 3 using SEM and concludes with the outcome of the propositions testing.

5.2 Research Findings

5.2.1 Sample demographic composition

The demographic composition of the sample, including age, gender, monthly income, smartphone ownership and multi-banking, is presented in tables below.

Table 16: Sample Distribution by Gender

Gender	Frequency	Valid Percentage
Male	191	69.7%
Female	83	30.3%
Total	274	100%

There was a somewhat larger representation of male respondents, who accounted for 191 of the responses (69.7%).

Table 17: Sample Distribution by Age

Age Grouping	Frequency	Valid Percentage
18-25	49	17.9%
26-35	148	54%
36-45	63	23%
46+	14	5.1%
Total	274	100%

The vast majority of respondents were in the age bracket of 26 and 35 (54%), which is the age group of young working professionals. This may be due to the snowballing effect and higher mobile App affinity displayed by young professionals.

Table 18 : Sample Distribution by monthly Income (Optional Information)

Monthly Income	Frequency	Valid Percentage
< 10K Rands	25	10.7%
10K to 20K Rands	29	12.4%
20K to 40K Rands	62	26.6%
40K to 60K Rands	44	18.9%
60K +	73	31.4%
Total	**233**	**100%**

Despite the fact that monthly income was an optional information, 233 participants shared the information. The majority of the respondents (76.9%) had a monthly income of more than R20 000. This means that majority of respondents were affluent and were highly likely to own a smart phone.

Table 19 : Sample Distribution by Smartphone Ownership

Own Smartphone	Frequency	Valid Percentage
Yes	269	98.2%
No	5	1.8%
Total	274	100%

The vast majority of respondents owned a smartphone (98.2%), which resonates well with the current trend of massive smartphone adoption. This was also a requirement for this study as mobile banking App is accessed through smart phone medium only.

Table 20 : Sample Distribution by Multi-Bank

Multi-Bank	Frequency	Valid Percentage
Yes	167	61%
No	107	39%
Total	274	100%

167 (61%) of the respondents were banking with multiple banks and were holding multiple bank accounts. This again shows that majority of the respondents were from

affluent background and these respondents would be more inclined to use comfort of mobile banking App due to need of transacting with multiple banks.

Table 21 : Sample Distribution by Access to Banking App

Access Banking App	Frequency	Valid Percentage
Yes	213	77.7%
No	61	22.3%
Total	274	100%

Access to a banking App was a filter question and respondents who responded with No as an answer (61 in total) were not asked further questions on engagement and flow experience. Further statistical tests were carried out on the respondents who answered this question in affirmative (213 in total, 77.7% of sample). 11 respondents had marked only one value on Likert scale (either 3, 4 or 5) for all 41 constructs measures. These cases were removed from the final analysis, as they were not considered as well well-thought-out responses. The final descriptive and SEM analysis was carried out on 202 responses. The results above proved that this study could access the targeted samples (from the entire population) successfully.

5.2.2 Descriptive statistics

The normality of the data was measured by computing the standard deviation, skewness and kurtosis of the distribution. Skewness measures the asymmetry of the distribution of a real-valued random variable about its mean, where the skew value of a normal distribution is equal to zero (Field, 2009). The author further suggested that a substantial departure from normality would be indicated by an absolute value of > 2. Kurtosis measures the "tailedness" of the distribution of a variable, where the value of zero indicates a perfectly normal distribution. West, Finch, and Curran (1995) proposed that a substantial departure from normality would be indicated by an absolute value of > 7.1.

The means, standard deviations, skewness and kurtosis for each variable are outlined in Figure 4 below. As illustrated, skewness values ranged from -2.787 to 1.802, and kurtosis values ranged from -1.405 to 4.910. Accordingly, based on the guidelines proposed by West et al. (1995), the data for most of the variables displayed normal distributions. The few variables with higher skewness and kurtosis values were not removed from initial analysis; however, they were kept under observation for their effect on the statistical results and some variables were removed during the measurement model assessment. All the constructs rendered relatively small standard deviations from

the respective mean scores, which indicates that no significant outliers existed in terms of how respondents answered the questionnaire.

Figure 4 : Descriptive Statistics for Variables

Descriptive Statistics

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Skill_1	202	4.70	0.616	-0.229	0.171	-0.514	0.341
Skill_2	202	4.54	0.662	-1.236	0.171	0.740	0.341
Skill_3	202	3.97	0.810	-2.171	0.171	4.388	0.341
FV_1	202	4.31	0.801	-0.729	0.171	-0.694	0.341
FV_2	202	4.39	0.705	-0.794	0.171	-0.272	0.341
FV_3	202	4.47	0.692	-1.120	0.171	0.667	0.341
FV_4	202	4.38	0.704	-0.866	0.171	0.157	0.341
FV_5	202	4.25	0.647	-0.296	0.171	-0.700	0.341
FV_6	202	4.13	0.710	-1.198	0.171	-0.998	0.341
HV_1	202	4.07	0.263	1.272	0.171	3.793	0.341
HV_2	202	4.12	0.330	1.302	0.171	2.333	0.341
HV_3	202	4.09	0.293	1.802	0.171	4.910	0.341
BIV_1	202	3.84	0.756	0.272	0.171	-1.205	0.341
BIV_2	202	3.58	0.716	0.809	0.171	-0.641	0.341
BIV_3	202	4.05	1.103	-2.143	0.171	1.516	0.341
BIV_4	202	3.69	0.724	0.552	0.171	-0.925	0.341
BIV_5	202	3.48	0.921	-2.289	0.171	2.354	0.341
FOCUS_1	202	4.27	0.668	-0.366	0.171	-0.780	0.341
FOCUS_2	202	4.28	0.707	-0.453	0.171	-0.916	0.341
FOCUS_3	202	4.01	0.776	-0.026	0.171	-1.333	0.341
CTRL_1	202	4.19	0.689	-0.272	0.171	-0.885	0.341
CTRL_2	202	4.11	0.721	-0.174	0.171	-1.054	0.341
CHLG_1	202	4.10	0.306	1.615	0.171	2.885	0.341
CHLG_2	202	4.10	0.299	1.705	0.171	4.371	0.341
CHLG_3	202	4.09	0.286	0.906	0.171	3.510	0.341
PEOU_1	202	4.32	0.914	-2.787	0.171	3.467	0.341
PEOU_2	202	4.43	0.621	-0.615	0.171	-0.556	0.341
PEOU_3	202	4.44	0.653	-0.734	0.171	-0.505	0.341
PEOU_4	202	4.51	0.600	-0.824	0.171	-0.298	0.341
PENG_1	202	4.19	0.689	-0.272	0.171	-0.885	0.341
PENG_2	202	4.31	0.709	-0.520	0.171	-0.885	0.341
PENG_3	202	4.07	0.795	-0.125	0.171	-1.405	0.341
BSC_1	202	4.06	0.941	-0.924	0.171	0.700	0.341
BSC_2	202	3.77	1.016	-2.651	0.171	0.153	0.341
BSC_3	202	3.56	0.705	0.864	0.171	-0.524	0.341
BSC_4	202	3.63	0.743	0.709	0.171	-0.860	0.341
BSC_5	202	3.48	0.707	1.138	0.171	-0.094	0.341
BSC_6	202	3.49	0.700	1.090	0.171	-0.152	0.341
BLTY_1	202	4.24	0.567	-0.517	0.171	2.280	0.341
BLTY_2	202	4.19	0.626	-0.774	0.171	2.200	0.341
BLTY_3	202	4.08	0.704	-0.897	0.171	1.670	0.341
Valid N (listwise)	202						

5.2.3 Structural equation Modelling (SEM)

To empirically validate the theoretical model, Structural Equation Modelling (SEM) was used and propositions were tested through the Structural Equation Modelling using AMOS 24. The following sections present the psychometric checks done, using the measurement model of SEM and the analysis results of the propositions testing done using the structural model.

Structural Equation Modelling (SEM) is a multivariate technique, which estimates a series of inter-related dependence relationships simultaneously (Kline, 2011). The hypothesised model can be tested statistically in a concurrent analysis of the entire system of variables to determine the extent to which it is consistent with the data. If the goodness-of-fit is adequate, the model argues for the plausibility of postulated relations among the variables (Hooper et al., 2008).

SEM was used to undertake a second order confirmatory factor analysis. Factor analysis is the statistical procedure for investigating the relationship between sets of observed and latent variables. Confirmatory Factor Analysis (CFA) is used to test the relations between the observed measures and the underlying factors ‘a priori’, based on the theory, experimental research (Kline, 2011). In this study, the model was developed ‘a priori’, hence only the CFA was used. A second order factor analysis was needed as most of the factors (Hedonic value, perceived control, perceived usefulness/functional value, perceived ease of use, matching of skills & positive challenges, concentration, Brand engagement in self-concept, usage intensity and brand interaction value) were related and were measuring second order constructs (Flow and engagement).

The measurement model represents the Confirmatory Factor Analysis (CFA), in that it specifies the pattern by which each measure loads on a particular factor (Hooper et al., 2008). Author further mentioned that the measurement model concentrates on validating the entire theoretical model and it represents how the measured variables come together to represent constructs and is used for validation and reliability checks. On the other hand, the structural model defines relations among the unobserved variables by specifying the manner in which particular latent variables directly or indirectly influence or cause changes in the values of certain other latent variables in the model (Kline, 2011).

In this study, data was analysed using a two-step approach, whereby the estimation of the confirmatory measurement model precedes the estimation of the structural model

(Kline, 2011). Before evaluating the model fit, it is necessary to present the analysis of the psychometric properties of the instrument using the measurement model. Following the two-step approach, the measurement model was examined to test reliability and validity. Then the structural model was examined to test research propositions and model fitness.

5.2.4 Convergent validity of the measurement model

Convergent validity is shown when each measurement item correlates strongly with its assumed theoretical construct. In other words, the items that are the indicators of a construct should converge or share a high proportion of variance in common (Kline, 2011). The value ranges between zero and one (0 – 1). The validity of the proposed model was assessed by calculating the AVE value. According to Fornell and Larcker (1981), an acceptable AVE value is 0.50 or greater.

Convergent validity was verified through the t-statistic for each factor loading. Few of the measures (FV_1, FV_6, PEOU_1, CTRL_3, Skill_3, BLTY_3, BSC_1, BSC_2, BIV_3 and BIV_5), which had factor loading (standardized regression weight) less than 0.60, were removed from the model to improve all the constructs' AVE value. As seen from Table 22 below, all AVE values and factor loadings are greater than 0.5 after removing above mentioned measures. For all the constructs, all items have high loadings, with majority above 0.70; therefore, demonstrating convergent validity.

Table 22 : Standardised item loadings, AVE, CR and Alpha

Latent Variable	Indicator Coding	standardised regression weight	AVE (Average Variance Extracted)	ALPHA	Composite Reliability (CR)
Perceived Usefulness (PU)/Functional Value (FV)	FV_2	0.693	0.502	0.772	0.801
	FV_3	0.699			
	FV_4	0.731			
	FV_5	0.710			
Perceived ease of Use (PEOU)	PEOU_2	0.860	0.641	0.835	0.842
	PEOU_3	0.693			
	PEOU_4	0.839			
Positive Challenges (CHLG)	CHLG_1	0.663	0.506	0.745	0.754
	CHLG_2	0.761			
	CHLG_3	0.706			
Perceived Control (CTRL)	CTRL_1	0.917	0.808	0.893	0.894
	CTRL_2	0.880			
Focus/Concentration	FOCUS_1	0.902	0.728	0.883	0.889
	FOCUS_2	0.888			
	FOCUS_3	0.762			
Hedonic Value (HV)/Enjoyment	HV_1	0.765	0.698	0.868	0.873
	HV_2	0.843			
	HV_3	0.893			
Skill and Knowledge	Skill_1	0.729	0.542	0.659	0.703
	Skill_2	0.744			
Brand Loyalty (BLTY)	BLTY_1	0.756	0.549	0.672	0.709
	BLTY_2	0.726			
Brand Engagement self-concept (BSC)	BSC_3	0.751	0.670	0.882	0.889
	BSC_4	0.664			
	BSC_5	0.913			
	BSC_6	0.917			
Perceived Usage Intensity (UI)	PENG_1	0.799	0.714	0.881	0.882
	PENG_2	0.893			
	PENG_3	0.840			
Brand Interaction Value (BIV)	BIV_1	0.768	0.518	0.710	0.763
	BIV_2	0.715			
	BIV_4	0.673			

5.2.5 Discriminant validity of the measurement model

Discriminant validity is the degree to which a construct is truly different from other constructs meaning that a latent variable would well explain the variance of its own indicators than the variance of other latent variables (Carmines & Zeller, 1979). In

statistical sense, the loading of an indicator on its allocated latent variable must be higher than its loadings on all other latent variables.

To examine discriminant validity, the shared variances between factors were compared with the Average Variance Extracted (AVE) of the individual factors (Fornell & Larcker, 1981). The rule of thumb for assessing discriminant validity requires that the square root of AVE be larger than the squared correlations between constructs (Hair et al., 2009). The diagonal items in the Table 23 below represent the square root of AVEs, which is a measure of variance between construct and its indicators, and the off diagonal items represent squared correlation between constructs. As seen from the results, the square root of AVE value for each construct exceeded the squared correlation between the constructs (Flow, Engagement and Loyalty) and other related constructs. This analysis showed that the shared variance between factors were lower than the AVEs of the individual factors, which confirmed discriminant validity.

Table 23 : Factor Matrix Showing Discriminant Validity

	Flow	Engagement	Loyalty
Flow	**0.795**		
Engagement	0.712	**0.796**	
Loyalty	0.420	0.429	**0.741**

5.2.6 Reliability of the measurement model

Reliability is defined in general as the extent to which a measure, procedure or instrument yields the same result on repeated trials and are free from error (Carmines & Zeller, 1979). It can be used to assess the degree of consistence among multiple measurements of variables (Hair et al., 2009).

Cronbach's alpha coefficient measures internal consistency of a test or scale by assessing the extent to which the variables in a test measure the same construct and which would, consequently, be regarded as inter-related (Hair et al., 2009). Cronbach's alpha, which is affected by the number of variables, the inter-relatedness and dimensionality of the variables, is expressed as a number between 0 and 1 (Tavakol & Dennick, 2011).

If variables in a test are correlated with each other, the value of alpha is increased, while the value of alpha will decrease if lower levels of correlation are present. According to

Pallant (2013) and Tavakol and Dennick (2011), the recommended value of Cronbach's alpha is 0.70 or greater. As shown in Table 22 above , alpha values for 9 constructs (out of 11) met the recommended value except two constructs: Skill and Knowledge, and Brand Loyalty.

Notwithstanding the wide use of Cronbach's alpha as an estimator of reliability, this coefficient has been criticised for being a lower-bound test for reliability, and, therefore, potentially underestimating true reliability (Hair et al., 2009). In order to moderate potentially inaccurate estimations of internal consistency of each construct, the composite reliability (CR) (in other words, the reliability of each composite) was also determined.

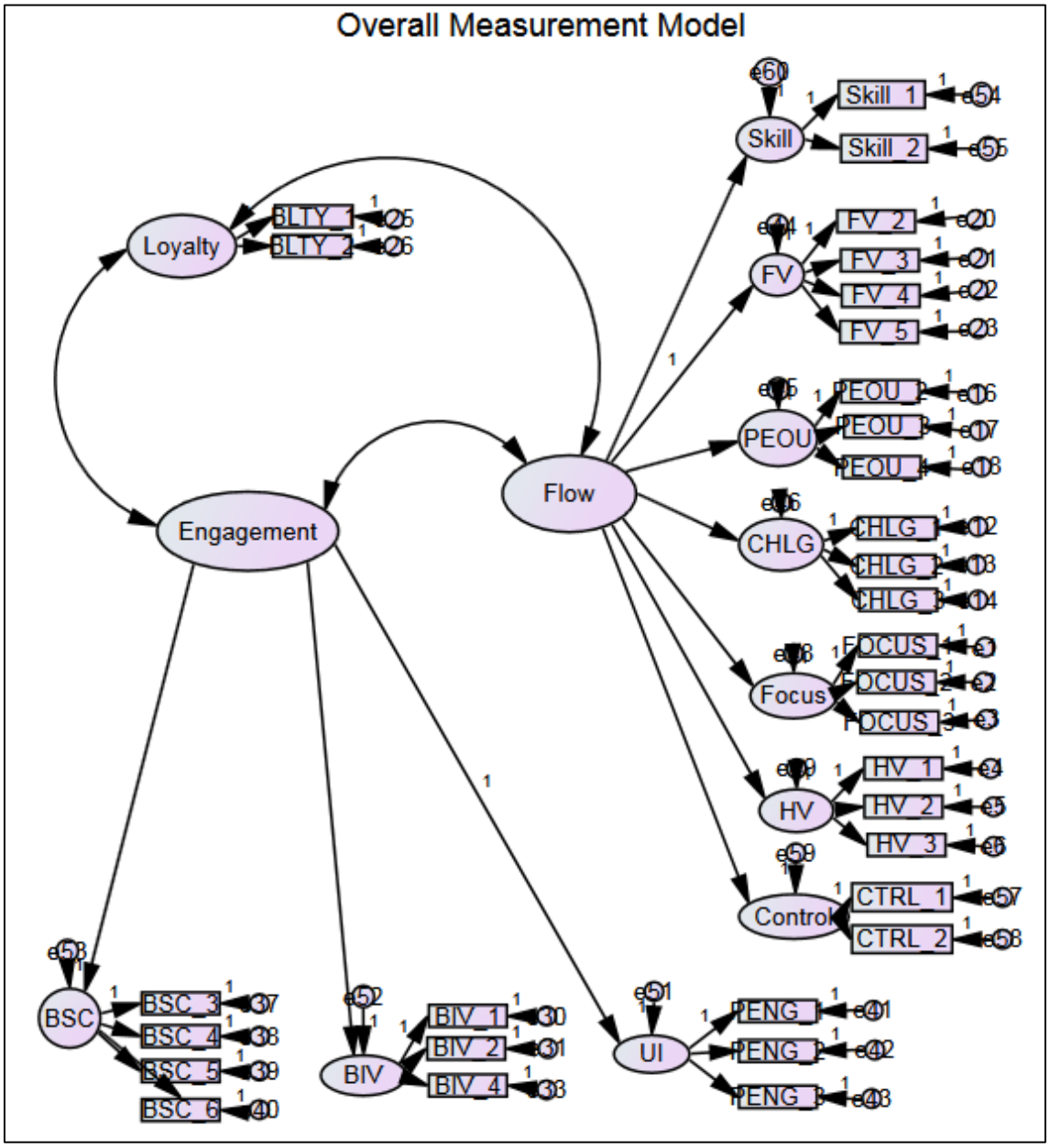
Composite reliability measures the overall reliability of a set of items loaded on a latent construct with value ranging between zero and one (Carmines & Zeller, 1979). Composite reliability should be greater than the benchmark of 0.7 to be considered adequate (Fornell & Larcker, 1981). Between 0.60 – 0.70 is also acceptable, if other indicators of the construct's validity are good (Hair et al., 2009). The composite reliability of all constructs are also presented in Table 22 above. All composite reliabilities of the constructs have a value higher than 0.70, indicating adequate internal consistency and reliability of the measurement model.

5.2.7 Confirming the overall measurement model using CFA

After validation of the measurement instrument was satisfied, the results of the Confirmatory Factor Analysis (CFA), using AMOS 24, was used to evaluate the model fit of the measurement model to confirm the hypothesised structure.

The measurement model is shown in Figure 5 below. Each factor was measured by a minimum of two to a maximum of four observed variables, the reliability of which was influenced by random measurement error, as indicated by the associated error term. Each of these observed variables was regressed into its respective factor. Flow and Engagement were measured as second order factors. Finally, Flow, Engagement and Loyalty factors were shown to be inter-correlated as per theoretical framework. The hypothesised model was recursive.

Figure 5 : The Overall Measurement Model



An over-identified model is one where the number of estimable parameters is less than the number of data points (meaning the variances and co-variances of the observed variables) (Hooper et al., 2008). This results in positive degrees of freedom that allow for rejection of the model, thereby rendering it of scientific use (Kline, 2011). The aim in SEM, therefore, is to specify a model, which is over-identified.

The proposed model in this study is an over-identified model with positive degrees of freedom (451) as shown in Table 24 below drawn from the AMOS output. In this model, there are 528 distinct sample moments or pieces of information from which to compute the estimates of the default model, and 77 distinct parameters to be estimated, leaving

451 degrees of freedom, which is positive (greater than zero). Hence, the model is an over-identified one.

Table 24: AMOS Output: Computation of degrees of freedom

Number of distinct sample moments	528
Number of distinct parameters to be estimated	77
Degrees of freedom (861 - 101)	451

Maximum Likelihood (ML) estimation method was used for this study. In this study, the minimum iteration was achieved, thereby providing a guarantee that the estimation process yielded an acceptable solution, eliminating any concern about multicollinearity effects.

5.2.8 Assessing overall measurement model fitness

Goodness of fit (GOF) indicates how well the specified model reproduces the observed co-variance matrix among the indicator items, the similarity of the observed and estimated covariance matrices (Steiger, 2007). There are three model fit categories, namely Absolute Fit, Incremental Fit, and Parsimonious Fit. (Hair et al., 2009) recommended the use of at least one fitness index from each category of model fit as there is no universal agreement among researchers, which fitness index to use.

Bentler and Bonett (1980) asserted that the chi-square test is the conventional overall test of goodness-of-fit in covariance structure analysis. However, its value is susceptible to large sample sizes. The goodness-of-fit index (GFI) was the very first standardised fit index, which is analogous to a squared multiple correlation (Jöreskog & Sörbom, 1984). GFI = 1.0 indicates perfect model fit, GFI > .90 may indicate good fit, and values close to zero indicate very poor fit. However, GFI value can go beyond 1 for over-identified models with almost perfect fit. Another index AGFI corrects this problem by correcting the value of GFI based on model complexity (Tanaka & Huba, 1985).

Root Mean Square Error Approximation (RMSEA) is one of the most widely used measures that attempts to correct for the tendency of the chi-square GOF test statistic to reject models with a large sample or a large number of observed variables (Steiger, 2007). Lower RMSEA values indicate better fit. The recommended value of RMSEA is <0.05. The CFI is based on the assumption that none of the latent variables are correlated; and this index is one of the measures that are least effected by sample size, it is one of the most widely used fit indices (Hoe, 2008). The Tucker Lewis Index (TLI) is

a comparison of the normed chi-square values for the null and specified model, which − to some degree − takes into account model complexity (Bentler & Bonett, 1980). Models with good fit have values that are closer to one and a model with a higher value suggests a better fit than a model with a lower value.

Table 25 below lists the recommended and actual values of some fit indices along with the literature reference. As listed in the table, except GFI, other fit indices have better actual values than the recommended values. This shows a good fitness of model.

Table 25 : Fit statistics of the Measurement model

Category	Fit statistic	Recommended	Literature Reference	Obtained
Parsimonious fit	chi^2/df	< 5.0	Tabachnick and Fidell (2007)	1.369
Absolute fit	chi^2 significance	p < = 0.05	Hu and Bentler (1999)	0.000
	GFI	> 0.90	Jöreskog and Sörbom (1984)	0.841
	RMSEA	< 0.05	Steiger (2007)	0.043
Incremental fit	AGFI	> 0.80	Tanaka and Huba (1985)	0.814
	CFI	> 0.90	Hoe (2008)	0.945
	TLI	> 0.90	Bentler and Bonett (1980)	0.939

5.2.9 The Structural model path diagram

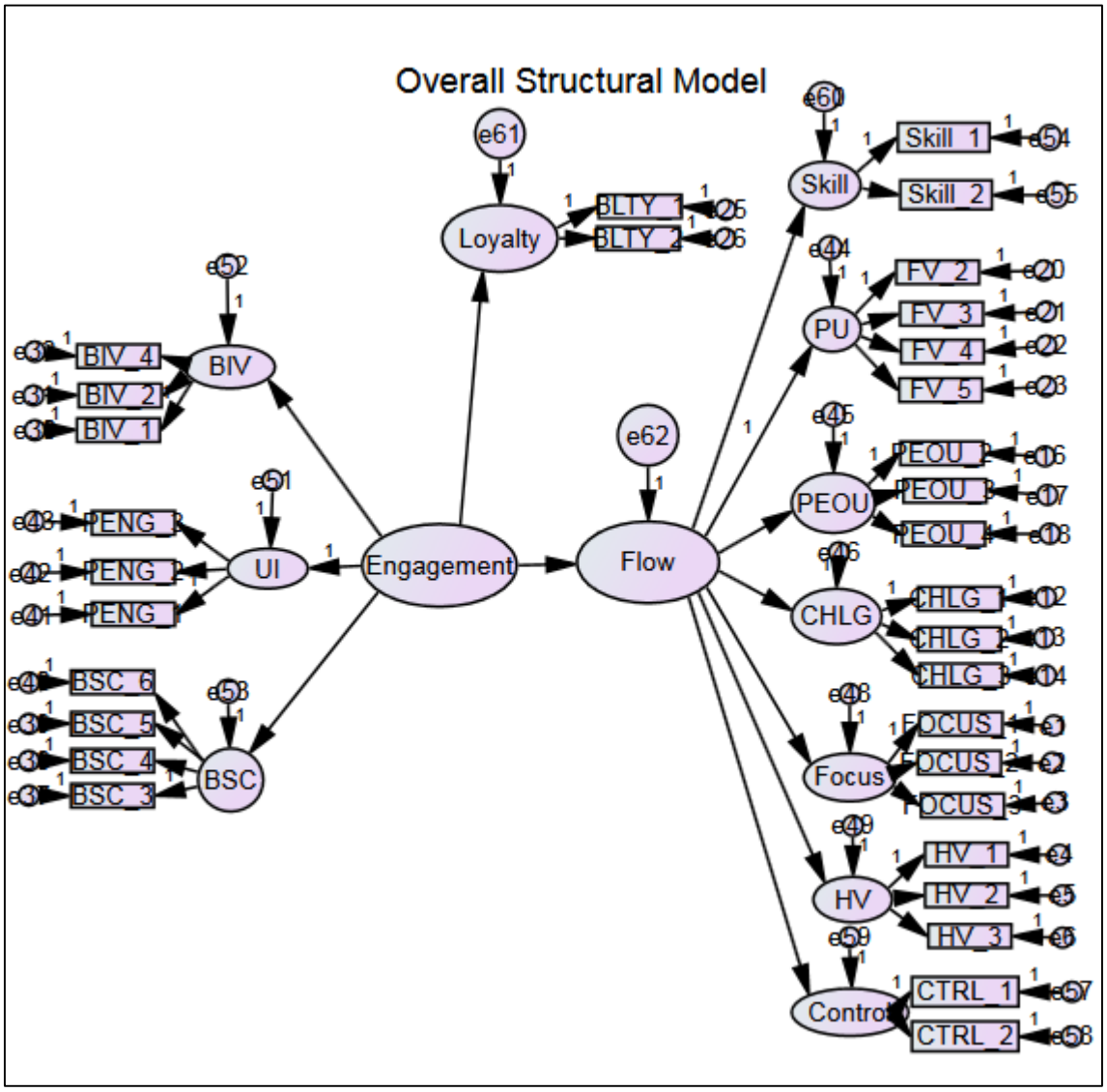
The structural model shown in Figure 6 below shows the propositions formulated. SEM is actually the graphical equivalent of its mathematical representation, whereby a set of equations relates dependent variables to their explanatory variables (Hooper et al., 2008). One-way arrows in the diagram represent structural regression coefficients and thus indicate the impact of one variable on another. From the diagram, relationship between Engagement, Flow and Loyalty constructs and their antecedents are depicted through one-way arrows.

The process of establishing the structural model's validity follows the general guidelines adopted for the measurement model. A new SEM estimated co-variance matrix is computed and it is different from the measurement model, since the measurement model assumes that all constructs are correlated, but in structural model the relationships between some constructs are assumed to be zero (Steiger, 2007). The fit indices provided a reasonable model fit for the structural model as well as shown in Table 26 below. Hence, it is concluded that the proposed research model fits the data well.

Table 26 : Fit statistics of the Structural model

Category	Fit statistic	Recommended	Literature Reference	Obtained
Parsimonious fit	chi^2/df	< 5.0	Tabachnick and Fidell (2007)	1.366
Absolute fit	chi^2 significance	p < = 0.05	Hu and Bentler (1999)	0.000
	RMSEA	< 0.05	Steiger (2007)	0.043
Incremental fit	AGFI	> 0.80	Tanaka and Huba (1985)	0.814
	TLI	> 0.90	Bentler and Bonett (1980)	0.940

Figure 6 : The Overall Structural Model Path Diagram



5.2.10 Propositions testing

The hypothesised research model exhibited good fit with observed data as mentioned above. The next step in the process was to test the research propositions as stated out in Chapter 3. All the 12 hypothesised paths are significant (p value <0.001), and hence supported. The standardised regression weights of the output and result of the propositions testing providing support for propositions H1 to H12 is presented in Table 27 below.

Table 27 : Propositions, paths coefficients and their significance

No.	Research Propositions	Path	Path Coefficient value	P-Value (Significance)	Supported /Not Supported
P1	Hedonic value (HV)/Enjoyment positively influences the user's flow experience while interacting with the brand's online service.	HV -> Flow	0.392	***	Supported
P2	Perceived control positively influences the user's flow experience while interacting with the brand's online service.	Control -> Flow	0.634	***	Supported
P3	Concentration/focus positively influences the user's flow experience while interacting with the brand's online service.	Focus -> Flow	0.583	***	Supported
P4	Skills and Knowledge positively influences the user's flow experience while interacting with the brand's online service.	Skill -> Flow	0.719	***	Supported
P5	Positive challenges positively influences the user's flow experience while interacting with the brand's online service.	CHLG -> Flow	0.418	****	Supported
P6	Perceived ease of use (PEOU) positively influences the user's flow experience while	PEOU -> Flow	0.773	***	Supported

	interacting with the brand's online service.				
P7	Perceived usefulness (PU)/Functional Value (FV) positively influences the user's flow experience while interacting with the brand's online service.	PU -> Flow	0.810	***	Supported
P8	Brand interaction value (BIV) positively influences user's engagement with the brand's online service.	BIV-> Engagement	0.444	***	Supported
P9	Brand Self-concept (BSC) value positively influences user's engagement with the brand's online service.	BSC -> Engagement	0.231	0.01	Supported
P10	Usage intensity value (UI) positively influences user's engagement with the brand's online service.	UI -> Engagement	0.805	***	Supported
P11	Brand Engagement value positively influences Brand Loyalty.	Engagement -> Loyalty	0.448	0.001	Supported
P12	Brand Engagement value positively influences the user's flow experience while interacting with the brand's online service.	Engagement -> Flow	0.925	***	Supported

All propositions are supported. Consumer flow experience is influenced by perceived usefulness (β= 0.810), perceived ease of use (β=0.773), perceived control (β=0.634), positive challenges (β=0.418), skill and knowledge (β=0.719), focus (β=0.583) and

hedonic value (β=0.392). Engagement is influenced by brand self-concept (β= 0.231), brand interaction value (β=0.444) and usage intensity (β=0.805).

Consumer's engagement with the brand's online service platform is a significant predictor of consumers' flow experience (β= 0.925) and brand loyalty (β= 0.448).

5.3 Conclusion to Results

This chapter presented the research results based on the responses to the survey used to collect quantitative primary data for purposes of testing the propositions defined in Chapter 3. A total number of 274 valid responses were received and 202 responses were found valid for SEM analysis.

The demographic statistics revealed that vast majority of respondents were owning a smartphone (98.2%) and 77.7% of the respondents were accessing a mobile banking App. This ensured that the respondents were able to complete the survey candidly based on their practical experience. In addition, a fairly equitable split between age, gender and income profile was obtained.

The normality of the data was confirmed by the skewness and kurtosis values that were computed. CFA factor loadings, all of which were above the recommended value of 0.50, established the goodness-of-fit of the model, while SEM was employed to test the measurement and structural model. Cronbach's alpha and CR coefficients were in the recommended range, for all the constructs, which confirmed the reliability of each construct.

Convergent and discriminant validity was achieved for the measurement model. With regard to the proposition testing, the results showed that all the propositions were supported. The next chapter discusses the results presented in this chapter in the context of the literature review included in Chapter 2.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

This chapter explored the research propositions set out in the chapter 3 of this research along with the results of the statistical analysis presented in chapter 5 and the relevant literature discussed in chapter 2.

6.2 Research Proposition Discussion

6.2.1 Proposition 1

P_1: Hedonic value (HV)/Enjoyment positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between Hedonic value (HV)/Enjoyment construct and flow experience construct in online brand service consumption scenario (banking using mobile App). The results showed a statistically significant positive relationship between Hedonic value (HV)/Enjoyment and the flow experience constructs (β=0.392, p-value = significant). Accordingly, P_1 was supported.

Support for the above proposition could be explained by Koufaris (2002) finding that an important measure and antecedent of flow is the level of intrinsic enjoyment of an activity. Burke (1997) study had also found flow to be related to work enjoyment and feelings of professional effectiveness. Past studies have also found that hedonic value positively impacts the use of online environments for e-mail use (Trevino & Webster, 1992) and web application/software use (Webster et al., 1993).

However path coefficient value (β=0.392) is not high, which means there is a weak influence of hedonic value on flow experience. Support for this could be found from Li et al. (1999) finding that fun orientation was not different between non-online buyers, infrequent online buyers, and frequent online buyers. Also motivation orientation for banking App users would be more task-oriented compared to experiment or hedonic-orientation. Therefore, hedonic value although statistically significant, won't be a major predicator of flow experience in task-oriented online service environment.

6.2.2 Proposition 2

P_2: Perceived control positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between perceived control construct and flow experience construct in online brand service consumption scenario. The results showed a strong and statistically significant positive relationship between perceived control and the flow experience constructs (β=0.634, p-value = significant). Accordingly, P_2 was supported.

The result of the proposition testing supported Kiousis (2002) and Mollen and Wilson (2010) finding that perceived control correlates to one's level of control over the environment and actions which facilitates two way communication between user and brands. Koufaris (2002) postulated that due to time constraints and availability of multiple options in online environment, customers are exhibiting utilitarian behaviour and are demanding more control and higher efficiency during the online service/product interaction which results in higher engagement and experience of flow while consuming the service. This study supported the literature around perceived control and its positive impact on the user's flow experience while interacting with the brand's online service.

6.2.3 Proposition 3

P_3: Concentration/focus positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between user concentration construct and flow experience construct in online brand service consumption scenario. The results showed a statistically significant positive relationship between concentration (focus) and the flow experience constructs (β=0.583, p-value = significant). Accordingly, P_3 was supported.

The result of the proposition testing supported observations of Novak et al. (2000) that concentration positively influences the overall experience of computer users. Persistent focus on the current activity is one of the prerequisite to achieve a flow state; especially in online environments where users are more distracted due to multitasking environment (Koufaris, 2002). However path coefficient value (β=0.583) is not very high, which means there is a moderate influence of concentration/focus on flow experience. This is in contradiction to the literature and assumptions of this study that high cognitive tasks such

as mobile banking transactions require intense levels of focus and concentration in pursuing, interpreting and summarizing the information (O'Brien & Toms, 2008).

6.2.4 Proposition 4

P_4: Skills and Knowledge positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between skills & knowledge construct and flow experience construct in online brand service consumption scenario. The results showed a strong and statistically significant positive relationship between skills & knowledge and the flow experience constructs (β=0.719, p-value = significant). Accordingly, P_4 was supported.

Support for the above proposition could be explained by Nakamura and Csikszentmihalyi's (2014) that an actor's skill level should be above the challenge for flow to happen. As per Hoffman and Novak (1996), when skills are higher compared to the task challenges, users feel bored and when challenges are higher compared to the user's skill level, user feels nervousness. There are studies by various researchers (Csikszentimihalyi, 1977; Trevino & Webster, 1992; Webster et al., 1993; Novak et al., 2000; Zhou, 2012) where skill and positive challenge balance is highlighted as an important antecedent of flow experience. Marakas et al. (1998) had found that skills improve computer self-efficacy which in turn affects the emotional state of the user, which can improve the flow state. This study therefore supported the literature around Skills & Knowledge and its positive impact on the user's flow experience while interacting with the brand's online service.

6.2.5 Proposition 5

P_5: Positive challenges positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between positive challenges construct and flow experience construct in online brand service consumption scenario. The results showed a statistically significant positive relationship between positive challenges and the flow experience constructs (β=0.418, p-value = significant). Accordingly, P_5 was supported.

The results of the proposition testing supported initial findings of Hoffman and Novak (1996), that skills and challenges of the online service/task must be perceived as

matching and above a critical threshold for flow experience. Zhou (2012) proposed that when both skills and challenges are lower compared to the threshold value, users feel apathy. Nakamura and Csikszentmihalyi's (2014) study also related positive challenges with impact on flow experience.

However path coefficient value (β=0.418) is moderate, which means there is a moderate influence of challenge on flow experience. Koufaris (2002) had cautioned that negative challenges like tough navigation, application/web's slow response time or product/service unavailability can negatively affect the flow. The banking App used by samples may have negative challenges which would impact flow experience. Also requirement for banking App is to be task-oriented with simple layout; which might not present challenge to the user reducing their flow experience.

6.2.6 Proposition 6

P_6: Perceived ease of use (PEOU) positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between perceived ease of use construct and flow experience construct in online brand service consumption scenario. The results showed a strong and statistically significant positive relationship between user's perceived ease of use and the flow experience constructs (β=0.773, p-value = significant). Accordingly, P_6 was supported.

PEOU (perceived ease of use) is defined in the literature as the degree to which a person perceives that adopting the system would be effortless and easy to learn (Wentzel et al., 2009). The results of the proposition testing supported Koufaris (2002) finding that when the online service (mediated by smart device) is easy to use (perceived ease of use), it improves the user's flow experience. Zhou (2012), who carried out study on mobile banking App, noted that due to the restrictions of mobile terminals such as small screens and difficult input, it may be problematic for users to operate mobile banking if service providers cannot present a decent screen interface to users. This study supported the literature around Perceived ease of use (PEOU) and its positive impact on the user's flow experience while interacting with the brand's online service.

6.2.7 Proposition 7

P_7: Perceived usefulness (PU)/Functional Value (FV) positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between Perceived usefulness (PU)/Functional Value (FV) construct and flow experience construct in online brand service consumption scenario. The results showed a strong and statistically significant positive relationship between Perceived usefulness (PU)/Functional Value (FV) and the flow experience constructs (β=0.810, p-value = significant). Accordingly, P_7 was supported.

Support for the above proposition could be explained by TAM model which had introduced two factors that determine user's acceptance or rejection of information technology such as online services consumed on smart devices, namely perceived usefulness (PU) and perceived ease of use (PEOU). The significant path coefficient value for perceived usefulness shows that the TAM can be applied, in defining flow experience. PU was defined as the degree to which a person perceives that adopting the system will boost his/her job performance (Wentzel et al., 2009). Lee et al. (2011) had examined factors for user's switch from offline to online banking and found that perceived usefulness, perceived ease of use, offline trust, offline loyalty and switch cost affects user attitude towards switching.

This study supported finding by Jahn and Kunz (2012) that a customer satiating a functional satisfaction meant to be able to have access to useful, functional, productive and effective service or content. The results also supported prior TAM research which had identified that perceived usefulness (path coefficient β=0.810) is a more noteworthy predictor of expected system usage than perceived ease of use (path coefficient β=0.773) (Davis, 1989; Hsu & Lu, 2004). This study supported the literature around Perceived usefulness (PU)/Functional Value (FV) and its positive impact on the user's flow experience while interacting with the brand's online service.

6.2.8 Proposition 8

P_8: Brand interaction value (BIV) positively influences user's engagement with the brand's online service.

This proposition tested the relationship between Brand interaction value (BIV) construct and user engagement construct in online brand service consumption scenario. The results showed a statistically significant positive relationship between BIV and the engagement constructs (β=0.444, p-value = significant). Accordingly, P_8 was supported.

The results of the proposition testing supported findings of Loureiro et al. (2012) and Vivek et al. (2012) that consumer's strong relationship with the brand is an important indicator of the engagement with the brand. Brand interaction value increases consumer's involvement with the brand which can impact the consumer behaviour (Carlson & O'Cass, 2012). Richard and Chandra, (2005) posits that in the online environment, involved consumers are found to be driven to gain and process more information about the brand; possessing higher experimental behaviour, spending more time in information exploration and conducting online purchases.

However path coefficient value (β=0.444) is moderate, which means there is a moderate influence of BIV on customer engagement. Since necessity for banking App and bank brand is task-oriented, users may not be build strong relationship with bank brand (Jahn & Kunz, 2012). This may result in moderate to low BIV value resulting in less effect on customer engagement.

6.2.9 Proposition 9

P_9: Brand Self-concept (BSC) value positively influences user's engagement with the brand's online service.

This proposition tested the relationship between Brand Self-concept (BSC) value construct and user engagement construct in online brand service consumption scenario. The results showed a statistically significant positive relationship between BSC and the engagement constructs (β=0.231, p-value = 0.01). Accordingly, P_9 was supported.

The results of the propositions testing supported findings of Kressmann et al. (2006) that when there is a higher match between consumers' self-concept and the 'personality' of a brand perceived by the customer, it will lead to increased brand preference and loyalty as well as antecedence for engagement such as intentions, preferences, and attitude.

However path coefficient value (β=0.231) is low, which means there is a weak influence of BSC on customer engagement compared to other factors. Since bank brand has more functional value compared to hedonic value, users may not perceive bank brand as reflection of their own personality (Zhou, 2012). This may result in moderate to low BSC value resulting in less effect on customer engagement.

6.2.10 Proposition 10

P_{10}: Usage intensity value (UI) positively influences user's engagement with the brand's online service.

This proposition tested the relationship between Usage intensity (UI) value construct and user engagement construct in online brand service consumption scenario. The results showed a strong and statistically significant positive relationship between UI and the engagement constructs (β=0.805, p-value = significant). Accordingly, P_{10} was supported.

The results of the proposition testing supported findings of Jahn and Kunz (2012) that higher consumer engagement with the brand is a logical consequence of a customer using brand's services/products more frequently. This is also supported by De Vries et al. (2014) finding that consumers with higher level of usage intensity are more likely to engage in verbal publicity, purchase, loyalty and brand-related behaviours which further improves their brand engagement. Vivek et al. (2012) also had postulated that consumer engagement is related to the intensity of an individual's involvement with an organisation's offerings and activities initiated by either the customer or the firm. This study supported the literature around Usage intensity (UI) and its positive impact on user's engagement in online environment.

6.2.11 Proposition 11

P_{11}: Brand Engagement value positively influences Brand Loyalty.

This proposition tested the relationship between user engagement construct and brand loyalty construct in online brand service consumption scenario. The results showed a statistically significant positive relationship between brand engagement and loyalty constructs (β=0.448, p-value = 0.001). Accordingly, P_{11} was supported.

The result of the proposition testing supported observations of Jahn and Kunz (2012) that online brand engagement platforms like brand fan pages/websites contribute towards the brand commitment and loyalty. Kotler and Keller (2012) had also established that

brand serves as an engagement tool with the aim of establishing a long-term consumer-brand relationship, which has brand experience as input, and brand loyalty is the key output.

However path coefficient value (β=0.448) is moderate, which means there is a moderate influence of customer engagement on brand loyalty. Dholakia et al. (2010) had cautioned that customer's brand experience on all channels need to be consistent otherwise customer loyalty can be affected. Also Koufaris (2002) had mentioned that customer's loyalty on the web is low overall as online customer is more dominant, demanding and utilitarian in shopping journeys. This may result in moderate to low effect on customer loyalty with the brand.

6.2.12 Proposition 12

P_{12}: Brand Engagement value positively influences the user's flow experience while interacting with the brand's online service.

This proposition tested the relationship between brand engagement construct and flow experience construct in online brand service consumption scenario. The results showed a strong and statistically significant positive relationship between engagement and the flow experience constructs (β=0.925, p-value = significant). Accordingly, P_{12} was supported.

The results of the proposition testing supported findings of Kahn (1990) that engagement is the underlying factor for mindfulness, flow and intrinsic motivation in an individual. Bakker et al. (2005) also supported this view by suggesting that flow is a peak experience of engagement. Engagement is rather than being constrained to a single task represents a general involvement with the work which eventually results in flow experience and concentration (Schaufeli & Salanova, 2007). Engagement also shares many antecedents with the flow experience. This study therefore supported the literature around brand engagement and its positive impact on user's flow experience in online environment.

6.3 Chapter conclusion

This chapter provided a comprehensive discussion of the research results presented in Chapter 5, which confirmed the predictive effect of each of the measured constructs on the engagement and flow experience in online environment, as theorised by the proposed conceptual model. Each construct demonstrated a statistically significant

positive relationship with one of the second order construct (Engagement or Flow), as illustrated by the path coefficient and p-values in Table 27. However certain constructs were found to be stronger predictor of engagement and flow compared to the other constructs. Chapter 7 will conclude the research presented herein by summarising the principal findings of the research, discussing the theoretical and managerial implications thereof, specifying the limitations to this research and offering recommendations for future research.

CHAPTER 7: RESEARCH CONCLUSION

7.1 Introduction

The purpose of this study was to explore the antecedents of online consumer engagement and flow experience in online service environment mediated by smart devices. This study proposed conceptual framework and empirically tested the model. Hedonic value, perceived control, perceived usefulness/functional value, ease of use, matching of skills & positive challenges and concentration were proposed to be the antecedent of flow experience while self-brand congruency, usage intensity and brand interaction value were proposed to be the antecedents of online consumer engagement. Brand loyalty was proposed to be outcomes of online consumer engagement.

The next phase of the study consisted of administering a survey to test the proposed research model. The fit indices revealed that the data were a good fit for the proposed research model. All 12 propositions were accepted based on statistical significance of the path coefficient and p-value. This chapter now discusses the implications of the research finding from theoretical and managerial perspective.

7.2 Principle findings and theoretical implications

Overall, the research findings provided significant insights concerning the engagement and flow constructs, their measurement including antecedents, engagement's effect on flow and brand loyalty in smart devices mediated online environment. This study found that although all seven antecedents were predictor of flow experience, four antecedents (skills, PU, PEOU and perceived control) were stronger predictor of the flow compared to the other three (Hedonic value, concentration and positive challenges). Since users in this study had task-oriented motivation, hedonic value and positive challenges were expected to play lesser role in formation of flow experience for banking App users. This study also found that usage intensity was a better predictor of user engagement compared to BSC and BIV. As banking brand and its mobile App has pure functional value, it was expected to score low on BSC and BIV factors. Also it was found that brand engagement was stronger predictor of flow experience compared to

brand loyalty. This is in line with Koufaris (2002) finding that customer loyalty is less in online environment.

Overall, the findings of this research are consistent to previous studies which have found that facilitating engaging online environment results in exploratory and participatory behaviors, revisiting behavior, longer visitation, loyalty as well as online purchases (Novak et al., 2000; Koufaris, 2002; Richard & Chandra, 2005; Jahn & Kunz, 2012; De Vries & Carlson, 2014). As technology landscape is constantly evolving and smart devices (smart phones, smart bands and IoT devices) have become integral part of the consumer's life, it was important to assess how brands can engage and create flow experience with users through this new medium. This research would contribute towards the knowledge of online consumer engagement and flow experience from new technology perspective.

As such, organization resources and marketing competences must be dedicated to ensure that the creation and configuration of online experiences delivered through smart devices are conducive to creating and facilitating flow and engagement. This finding reinforces the point made by Hoffman and Novak (1996) that the providing of commercially captivating website depends on facilitating a state of flow for consumers and that an important objective for marketers should be to provide opportunities for consumers to experience the flow.

7.3 Recommendations to managers

Analogous to the theoretical implications, the overall framework developed in this study, consisting of antecedents of engagement, flow and their interplay, has implications for management. The findings reported the prominent role of antecedent factors in generating user engagement and flow experience along with impact of engagement and flow on customer loyalty with brand's online services. Thus, if brands are trying to create compelling online experiences for consumers to stimulate brand loyalty and to reduce the possibility to switch to competitor offerings, managers must pay close attention to how they design controllable elements of the online platform (including mobile App, Wearables) for brand consumers to facilitate flow and engagement.

For task-oriented online services (such as banking App), focus needs to be placed on improving features and usability of the online service and mediating platform (such as content, navigation, responsiveness, service capabilities, additional and complementary services), which will improve important antecedent factors for engagement and flow (user skills, usage intensity, perceived usefulness, perceived ease of use and perceived control). Subsequently, collecting such insights from the customer provides information that assists brand managers in their allocation of resources and deployment of capabilities to deliver engagement and flow experiences for consumers that facilitate positive consumer behaviour outcomes.

Although the measurement instrument was developed in the context of the App based mobile banking service, the measures are developed in a broad fashion, and can be reused across industries such as e-retailing, tourism, telecom or media/entertainment. Thus, the measurement instrument (questionnaire) developed in this study can be used by managers in understanding consumer behaviour in their business's online service context. Based on this, organizations can be assured that an investment in online service environments across platforms can pay off in loyalty and eventually an increase in revenue.

7.4 Research limitations and recommendations for future research

This study revealed several insights for academic scholars and practitioners, but restraint should be exercised when interpreting the results due to following limitations of the study:

- This research only looked at the enablers (antecedents) of Flow experience and engagement. Future research can also look at the inhibitor factors for flow and engagement and can combine both perspective to provide holistic view and its impact on flow and engagement formation. Also the list of antecedent factors for engagement and flow constructs is not exhaustive. The theoretical model in this research took important (and interesting) antecedents based on existing literatures and studies.

- This research didn't study the mediating impact of motivation orientation of the online consumers. Jahn and Kunz (2012) had pointed out that the motivation orientation of brand customers (i.e. task-orientation vs experiential-orientation)

also impact the propensity of engagement and flow formation. Mobile banking is largely a goal-oriented activity with higher emphasis on efficient processes, information accuracy and results (e.g. manage accounts, view transactions, pay bills). However online experiences in other industries/services like tourism, retail etc. requires experiential or hedonic oriented layout and workflow for consumers to escape from real life into the immersive online environment (Bridges & Florsheim, 2008). Consequently, future studies should assess consumer's motivation orientation, and its impact on flow and engagement as it would be in the organisation's best interests to design a captivating online experience based on consumer preferences.

- Additionally participants in this study were expected to recall their experiences with their bank's mobile banking App. Since all participants were not using the same bank and were not referring to the same mobile App, their responses may be biased and would depend on individual banking App's sophistication. Future research can try to ensure same frame of reference across participants (e.g., mobile banking users of a single bank).

- This study didn't take into account the potential recursive relationships. Participants who have developed loyalty with a brand previously might be more engaging and highly likely to experience flow state while engaging with brand's online services. Future research could explore these recursive relationships to determine their effects on online consumer engagement and flow experience.

- The study employed a nonprobability sampling technique (snowball sampling). It can be argued that snowball sampling technique has potential issue of selection bias, which could result in a homogenous sample due to the fact that respondents are likely to identify others who are similar to themselves (Saunders & Lewis, 2012). This study took on a cross-sectional sampling approach which resulted in the samples being measured at a specific point in time only (during month of Sep 2016). However due to the dynamic nature of mobile technology and its continued development, longitudinal research should be considered to further understand changes during an extended period of consumption events by consumers, which would help account for changes in the technology environment (Hausman & Siekpe, 2009).

- This study only considered the online consumer engagement and flow construct in the context of brand's online service environment (Bank's mobile App). However, brands are exploiting several different online platforms to connect with their consumers. Future research could test the online consumer engagement in different online platforms such as branded online communities, Twitter, YouTube, Facebook, or LinkedIn to see if the antecedents and outcomes are the same or if they are specific to the online service environment.

- Although the measures instrument was developed in a broad fashion, the samples for this study were limited to users of mobile banking App service in South Africa. As such, caution is necessary in attempting to generalise the findings to other service categories as well as other industry sectors that deliver e-services through online platforms (e.g. tourism, retail, property, telecom, health) to further understand the underlying nature of flow, engagement and its effects. Future research can explore and compare the key constructs of this study across a variety of industries and service categories.

7.5 Conclusion to Research Project

Shorter attention span and availability of multiple choices for consumers and modern war for consumer engagement by brands are some of the problems highlighted in this study. This motivated the researcher to investigate whether brand engagement and creating compelling online flow experience could enhance brand loyalty during consumer's interaction with smart device mediated online environment.

The study established that although all seven antecedents were predictor of flow experience, four antecedents (skills, perceived usefulness, perceived ease of use and perceived control) were stronger predictor of the flow compared to the other three (Hedonic value, concentration and positive challenges) in smart devices mediated online service environment such as mobile banking App. Usage intensity was found to be a better predictor of user engagement compared to Brand self-concept (BSC), and brand interaction value (BIV). Also it was found that brand engagement was stronger predictor of flow experience and was a moderate predictor of brand loyalty in online service environment. Theoretical and practitioners implications were suggested, as well as opportunities were highlighted for future research building on the findings of this study.

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APPENDICES

Appendix A: Questionnaire

Cover Letter

Dear Participant,

I am Nandishkumar Shah, a final year student at the Gordon Institute of Business Science, University of Pretoria, South Africa. I am conducting a research as part of my MBA studies in the area of consumer behaviour. This research aims to establish if the experience of flow and improved on-task behaviour can be induced through customer's engagement in smartphone Apps.

You can voluntarily participate in this research if you are currently accessing any mobile banking App on your smartphone. I request you to complete the survey before 25 September 2016. The questionnaire should take no longer than 10 minutes of your time to complete. Your participation is voluntary and you can withdraw at any time without penalty. All the information collected is anonymous. The collected data will be kept confidential. By completing the questionnaire, you indicate that you voluntarily participated in this research.

Please do not hesitate to contact me or my supervisor (contacts mentioned below) should you have any concerns.

Research Student: Nandishkumar Shah (15388523@mygibs.co.za)
Research Supervisor: Kerry Chipp (chippk@gibs.co.za)

Thanking you for your participation.

* Required

Personal Information

1) Gender *
- Male
- Female

2) Age *
- 18-25
- 26-35
- 36-45
- 46 +

3) Your Monthly Income (optional):
- < 10K Rands
- 10K to 20K Rands
- 20K to 40K Rands
- 40K to 60K Rands
- 60K +

4) Do you own a smartphone? *
- Yes
- No

5) Do you bank with multiple banks? *
- Yes
- No

6) Do you access a banking App on your smartphone? (In case multiple bank accounts, think of the one, which is used most often.)*
- Yes
- No

Skill & Knowledge in using the mobile banking App

The following statements relate to your level of skill and knowledge in using the mobile banking App. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

I have the skills to use the mobile banking APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I feel knowledgeable about using the mobile banking APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Compared to most other people, I know more about using the mobile banking APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Usefulness of the mobile banking App

The following statements relate to your overall assessment of the utility of the mobile banking App (i.e. how useful and productive it is). Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

I frequently use the mobile banking App. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The content on the mobile App is useful and functional for me. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Using the mobile App can improve my banking effectiveness and productivity. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The content and features on the mobile App are practical for me. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Information on the mobile App is effective and in-depth.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The mobile App adequately meets my information needs to make informed decisions.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Enjoyment of the mobile banking App

The following statements relate to your overall assessment of the enjoyment aspect of the mobile banking App (i.e. how fun and exciting it is). Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

The content on the mobile App is fun.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The content on the mobile App is interesting.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The content on the mobile App is enjoyable. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Brand-Interaction of the mobile banking App

The following statements relate to your overall assessment of the brand-interaction aspect of the bank. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

I can interact with the bank using the mobile App. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I can give feedback to the bank on the mobile App. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The mobile App is committed to ensuring that I have easy access to the bank at any time.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The mobile App is committed to ensuring rapid response standards to effectively deal with any enquiry I may have.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The mobile App is committed to delivering add-in values (e.g. special offers, member programs) to keep me loyal to the bank.*

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Concentration/Focus while Interacting with the mobile banking App

The following statements relate to your overall perception of concentration/focus while interacting with the mobile banking App. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

While interacting with the mobile APP, my attention is focused on what I am doing on the APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

While interacting with the mobile APP, I concentrate fully on the activity. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

While interacting with the mobile APP, I am deeply engrossed in the activity. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Perceived control while Interacting with the mobile banking App

The following statements relate to your overall perception of control while interacting with the mobile banking App. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

While interacting with the mobile APP, I feel in control. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

While interacting with the mobile APP, I feel calm and in command. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Positive Challenges while Interacting with the mobile banking App

The following statements relate to your overall perception of the positive challenges while interacting with the mobile banking App. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

Using the mobile APP challenges me to perform to the best of my ability. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Using the mobile APP provided a good test of my skills. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Using the mobile APP stretched my capabilities to the limits. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Perceived ease of use while Interacting with the mobile banking App

The following statements relate to your overall perception of the ease of use while interacting with the mobile banking App. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

Learning to use the mobile APP would be easy for me. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

My interaction with the mobile APP is clear and understandable. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

It would be easy for me to become skillful at using the mobile APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I find the mobile APP easy to use. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Engagement with the mobile banking App

The following statements relate to you perception of your engagement with the mobile banking App. Please indicate to what extent you agree or disagree with the statements. Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

I am an engaged user of the mobile APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I am an active user of the mobile APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I am an interacting user of the mobile APP. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Relationship with the bank brand

The following statements relate to your relationship with the bank brand. Please indicate to what extent you agree or disagree with the statements.
Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

The bank brand is significant to me. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I consider this bank brand to be a relevant part of my life. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

This brand is a lot like me. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I am involved in/with this bank brand. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

This brand reflects what I am. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The bank brand image corresponds to my self-image in many respects. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Loyalty to the bank brand

The following statements relate to your overall loyalty intentions to the bank brand. Please indicate to what extent you agree or disagree with the statements. Following is the understanding of the number scale:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

I recommend this brand (bank) to other people. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

This brand (bank) is my first port of call for financial services. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I intend to remain loyal to this brand (bank) in the future. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Appendix B: The Code Book

A code book, which was compiled to assist in the data analysis of the study is set out below:

Demographical codes:

Gender	
1	Male
2	Female

Age	
1	18-25
2	26-35
3	36-45
4	46+

Monthly Income	
1	< 10K Rands
2	10K to 20K Rands
3	20K to 40K Rands
4	40K to 60K Rands
5	60K+

Do you own a smartphone?	
1	Yes
2	No

Do you bank with multiple banks?	
1	Yes
2	No

Do you access a banking App on your smartphone? (In case multiple bank accounts, think of the one, which is used most often.)	
1	Yes
2	No

All of the following constructs are indicated as:

1 - Strongly Disagree
2 - Somewhat Disagree
3 - Neither Agree or Disagree
4 - Somewhat Agree
5 - Strongly Agree

Skill & Knowledge in using the mobile banking App	
Code	**Statement**
Skill_1	I have the skills to use the mobile banking App.
Skill_2	I feel knowledgeable about using the mobile banking App.
Skill_3	Compared to most other people, I know more about using the mobile banking App.

Functional Value (FV) /Perceived Usefulness (PU) in using the mobile banking App	
Code	**Statement**
FV_1	I frequently use the mobile banking App.
FV_2	The content on the mobile App is useful for me.
FV_3	Using the mobile App can improve my banking productivity.
FV_4	The features on the mobile App are practical for me.
FV_5	Information on the mobile App is effective.
FV_6	The mobile App adequately meets my information needs to make informed decisions.

Hedonic Value (HV)/Enjoyment in using the mobile banking App	
Code	**Statement**
HV_1	The content on the mobile App is fun.
HV_2	The content on the mobile App is interesting.
HV_3	The content on the mobile App is enjoyable.

Brand Interaction Value (BIV) in using the mobile banking App	
Code	**Statement**
BIV_1	I can interact with the bank using the mobile App.
BIV_2	I can give feedback to the bank on the mobile App.
BIV_3	The mobile App ensures that I have easy access to the bank at any time.
BIV_4	The mobile App ensures rapid response standards to effectively deal with any enquiry I may have.
BIV_5	The mobile App delivers add-in values (e.g. special offers, member programs) to keep me loyal to the bank.

Focus/Concentration in using the mobile banking App	
Code	**Statement**
FOCUS_1	While interacting with the mobile App, my attention is focused on what I am doing on the App.
FOCUS_2	While interacting with the mobile App, I concentrate fully on the activity.
FOCUS_3	While interacting with the mobile App, I am deeply engrossed in the activity.

Perceived Control in using the mobile banking App	
Code	**Statement**
CTRL_1	While interacting with the mobile App, I feel in control.
CTRL_2	While interacting with the mobile App, I feel calm and in command.

Positive Challenges in using the mobile banking App	
Code	**Statement**
CHLG_1	Using the mobile App challenges me to perform to the best of my ability.
CHLG_2	Using the mobile App provided a good test of my skills.
CHLG_3	Using the mobile App stretched my capabilities to the limits.

Perceived Ease of Use (PEOU) in using the mobile banking App	
Code	**Statement**
PEOU_1	Learning to use the mobile App would be easy for me.
PEOU_2	My interaction with the mobile App is clear and understandable.
PEOU_3	It would be easy for me to become skilful at using the mobile App.
PEOU_4	I find the mobile App easy to use.

Usage Intensity (UI) in using the mobile banking App	
Code	**Statement**
PENG_1	I am an engaged user of the mobile App.
PENG_2	I am an active user of the mobile App.
PENG_3	I am an interacting user of the mobile App.

Brand self-concept Value (BSC) in using the mobile banking App	
Code	**Statement**
BSC_1	The bank brand is significant to me.
BSC_2	I consider this bank brand to be a relevant part of my life.
BSC_3	This brand is a lot like me.
BSC_4	I am involved in/with this bank brand.
BSC_5	This brand reflects what I am.
BSC_6	The bank brand image corresponds to my self-image in many respects.

Brand Loyalty in using the mobile banking App	
Code	**Statement**
BLTY_1	I recommend this brand (bank) to other people.
BLTY_2	This brand (bank) is my first port of call for financial services.
BLTY_3	I intend to remain loyal to this brand (bank) in the future.

Appendix C: GIBS ETHICAL CLEARANCE APPROVAL LETTER

Dear Mr Nandishkumar Shah

Protocol Number: **Temp2016-01573**

Title: **Customer engagement in smart device mediated online environment and flow construct**

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

You are therefore allowed to continue collecting your data.

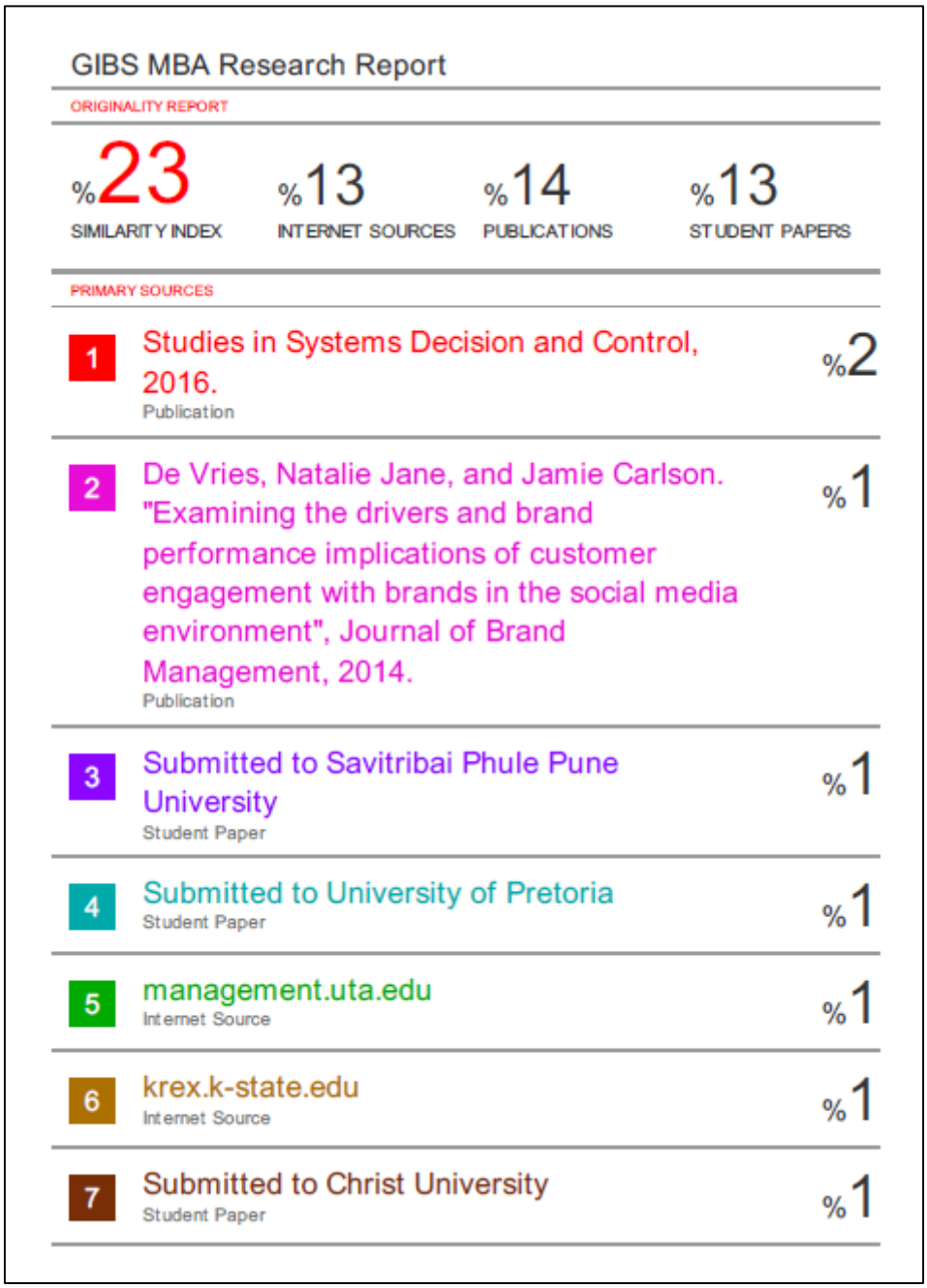
We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker

Appendix D: TURNITIN SUBMISSION REPORT

The test submission of the research report rendered a result of 28% similarity, but when the bibliography was excluded, this decreased to 23% similarity. The first five pages of the Turnitin report, are included below.



GIBS MBA Research Report

ORIGINALITY REPORT

%23	%13	%14	%13
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Studies in Systems Decision and Control, 2016. Publication	%2
2	De Vries, Natalie Jane, and Jamie Carlson. "Examining the drivers and brand performance implications of customer engagement with brands in the social media environment", Journal of Brand Management, 2014. Publication	%1
3	Submitted to Savitribai Phule Pune University Student Paper	%1
4	Submitted to University of Pretoria Student Paper	%1
5	management.uta.edu Internet Source	%1
6	krex.k-state.edu Internet Source	%1
7	Submitted to Christ University Student Paper	%1

8	repository.up.ac.za Internet Source	%1
9	Tao Zhou. "Examining mobile banking user adoption from the perspectives of trust and flow experience", Information Technology and Management, 12/08/2011 Publication	%1
10	api.ning.com Internet Source	%1
11	www.duplication.net.au Internet Source	%1
12	elabresearch.ucr.edu Internet Source	<%1
13	Jamie Carlson. "Creating commercially compelling website-service encounters: an examination of the effect of website-service interface performance components on flow experiences", Electronic Markets, 11/15/2011 Publication	<%1
14	Submitted to University of Newcastle Student Paper	<%1
15	Marios Koufaris. "Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior", Information Systems Research, 06/2002 Publication	<%1
16	Al-Shirawi, Abdulmonem(Dennis, C).	

	"Measuring the level of market orientation among financial services providers in a resource-based economy: organizational and customer perspectives", Brunel University Brunel Business School PhD Theses, 2013. Publication	<%1
17	Submitted to Institute of Graduate Studies, UiTM Student Paper	<%1
18	mro.massey.ac.nz Internet Source	<%1
19	uir.unisa.ac.za Internet Source	<%1
20	Scholer, A.A.. "Exploring the complexities of value creation: The role of engagement strength", Journal of Consumer Psychology, 200904 Publication	<%1
21	Hsu, Chia-Lin, Chih-Ching Yu, and Cou-Chen Wu. "Exploring the continuance intention of social networking websites: an empirical research", Information Systems and e-Business Management, 2014. Publication	<%1
22	Submitted to University of the Arts, London Student Paper	<%1
23	Submitted to Mancosa Student Paper	<%1

24	de Vries, Natalie Jane, Jamie Carlson, and Pablo Moscato. "A Data-Driven Approach to Reverse Engineering Customer Engagement Models: Towards Functional Constructs", PLoS ONE, 2014. Publication	<%1
25	Robson, Karen, Kirk Plangger, Jan H. Kietzmann, Ian McCarthy, and Leyland Pitt. "Game on: Engaging customers and employees through gamification", Business Horizons, 2016. Publication	<%1
26	Submitted to London School of Marketing Student Paper	<%1
27	Submitted to University Of Tasmania Student Paper	<%1
28	v-scheiner.brunel.ac.uk Internet Source	<%1
29	Submitted to Multimedia University Student Paper	<%1
30	Submitted to The University of Manchester Student Paper	<%1
31	Submitted to Institute of Management Technology Student Paper	<%1
32	www.theanalysisfactor.com Internet Source	<%1

33	Submitted to Northcentral Student Paper	<%1
34	Submitted to University of Lancaster Student Paper	<%1
35	Submitted to The University of Memphis Student Paper	<%1
36	Liu, Yan, Bo Pu, Zhenzhong Guan, and Qizhi Yang. "Online Customer Experience and Its Relationship to Repurchase Intention: An Empirical Case of Online Travel Agencies in China", Asia Pacific Journal of Tourism Research, 2015. Publication	<%1
37	www.scribd.com Internet Source	<%1
38	aisel.aisnet.org Internet Source	<%1
39	Submitted to Waterford Institute of Technology Student Paper	<%1
40	Lee, Doohwang LaRose, Robert. "A socio-cognitive model of video game usage. (Report)", Journal of Broadcasting & Electronic Med, Dec 2007 Issue Publication	<%1
41	iift.jumbotests.com Internet Source	<%1