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Post-purchase experiences as antecedents to customer satisfaction within mobile commerce in Cape Town

By

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Declaration

I, Atandile Ngubelanga (215079701), declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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ABSTRACT

The continued growth for both smartphone usage and mobile applications (apps) innovations has resulted in businesses realising the potential of this growth in usage. Smartphones are said to be a non-drug addiction for many consumers as they continually engage with their smartphones during a 24-hour day. Consequently, developers around the world have created mobile apps, which are downloaded through smartphone application stores, and installed onto smartphones or tablet computers. The internet, mobile apps and smartphones are also extensively used and this usage is increasing exponentially in South Africa and other developing countries. The increase in usage and appetite of engaging with mobile apps has led to businesses around the world utilising mobile apps as an additional business channel. Mobile apps used specifically for business-to-consumer commerce such as banking, e-hailing, retail, and order and delivery services have provided customers with a convenient way to search, order, locate, or transact through their smartphones anywhere and anytime via their smartphones. As a growing number of businesses invest in mobile apps, it is essential for marketers to understand customer behaviour as well as the usage patterns of mobile apps, since there is a dearth of research. Generation Y consumers are said to be the most innovative cohort. These consumers also have the largest buying power, although they might not be the primary earners of the money, they do influence and conduct most transactions within households. Thus, it is crucial for mobile application vendors to prioritise gaining an understanding this market.

Therefore, the primary research objective is to validate if the hypothesised constructs (trust, social influence, perceived mobility, enjoyment, perceived usefulness, ease of use, involvement, and innovativeness) influence customer satisfaction with mobile shopping apps among Generation Y consumers in Cape Town, South Africa. Additionally, this study sought to ascertain if usage (mobile app category, type of device used to access, usage duration, usage frequency, amount spent, and response to marketing communications) and demographic characteristics (employment status, population group, education level, gender, and age) influence customer satisfaction with mobile shopping apps. This study adopted a quantitative data collection approach, which was descriptive in nature. A questionnaire was used to gather the primary data through a combination of online and paper surveys. The paper questionnaires were interviewer-assisted, where the researcher and fieldworkers physically approached respondents and asked them to complete the questionnaires. The online questionnaire was deployed via a link, which was distributed using various channels such as SMS, email, Facebook, WhatsApp, LinkedIn, and Peers24 Network from June 2018 to June 2019. The research sample included Generation Y consumers (students, employed and unemployed adults within the age groups 18 to 37 years

old) who have engaged with mobile commerce apps and reside in Cape Town. This study achieved a total sample size of 5 497 and was analysed using SPSS and AMOS. Permission to conduct the study and fieldwork was obtained from the Ethics Committee of the Cape Peninsula University of Technology Business and Management Sciences Faculty, and participating respondents gave consent prior to participation in the study.

The primary research objective for this study was fulfilled in that it was proven that Generation Y mobile commerce users were satisfied with the experience they had received from engaging with mobile commerce apps. The study also found that usage characteristics, as well as certain demographic factors, influenced the level of satisfaction among research participants.

Mobile commerce vendors and those yet to adopt mobile shopping apps in developing countries will therefore find the results of this study beneficial in terms of the post-purchase experience insights revealed by this research. This will enable them to offer and adapt their mobile apps to increase customer satisfaction among Generation Y target market groups. Market research insights about this cohort will also enable mobile commerce vendors to continue offering innovations that will not only improve the experience of usage, but also to ultimately retain customers through this channel due to greater customer satisfaction.

KEYWORDS

M-commerce
Customer satisfaction
Perceived ease of use
Mobility
Trust
Perceived usefulness
Social influence
Perceived enjoyment
Innovativeness
Involvement

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TERMS AND CONCEPTS

Application store	An application store is a mobile database from which a set of mobile application programs can be downloaded (Wong, 2012:107).
Mobile commerce customer satisfaction	"A summary affective response of varying intensity that follows mobile commerce activities, and is stimulated by several focal aspects, such as information quality, system quality and service quality" (Wang & Liao, 2007).
E-commerce	See Electronic commerce
Electronic commerce	Electronic commerce refers to online business transactions. It is based on a variety of data formats to such as sound, images, text, and video. It encompasses various trading activities such as services, products, digital content, online payments, auctions, direct consumer marketing, customer services, and more (Jobodwana, 2009:287).
Empirical research	When a research study is empirical in nature it refers to the source of knowledge being acquired through observation or experimentation (Lübke et al., 2019:13).
Generation Y	Generation Y is a generational cohort which consists of individuals that are deemed to be technologically savvy. This generation was born late in the 20th century and grew up in the 21st century – the age of digital advancements (Eastman & Liu, 2012; Parment, 2013; Valentine & Powers, 2013; Bump, 2014; Chuah et al., 2017; Bento et al., 2018; Sethi et al., 2018).
Innovativeness	The introduction of new technologies due to an ever-changing business environment in order to advance traditional methods (San-Martin & López-Catalán, 2013).

Involvement	Involvement refers to an individual's perception of the relevance of the object based on essential needs, values, and interest (Zaichkowsky, 1985).
M-commerce	See Mobile commerce
Mobile apps	Mobile apps are programmed software applications that enable users to perform certain tasks or to engage in a certain activity on mobile devices (Jabangwe et al., 2018).
Mobile commerce	M-commerce is the exchange of services and products on mobile applications over wireless hand-held technology such as mobile devices and tablet computers (Jobodwana, 2009:288).
Mobile marketing	This is any marketing communication of a business or organisation using wireless portable devices that connect to the internet or mobile network (Kotler et al., 2003:258; Facchetti et al., 2005:69).
Mobile payment	The use of a mobile device to make payments via linked online banking details, in substitution to cash or a bank card (ABSA, 2019; Capitec, 2019; FNB, 2019; Nedbank, 2019; Standard Bank, 2019).
Mobility	Mobility refers to the convenience of a service that can be accessed and used on a wireless device (Mallat et al., 2008).
Perceived ease of use	The customers' opinions of how easy or simple it is to use a technological device or new technological offering (Lee et al., 2015).
Perceived enjoyment	This is the extent that the use of a service is perceived as being enjoyable or fun to use (Davis et al., 1992; Dai & Palvia, 2009).

Perceived usefulness	The degree that a person believes that using a system would enhance his or her job performance (Davis, 1989; Marinkovic & Kalinic, 2017:138-154).
Positivist paradigm	The positivist paradigm is based on exploring social reality, which is based on August Comte's philosophical ideas. These state that true knowledge is based on experience and can be achieved through experimentation and observation, and include understanding human behaviour (Chilisa & Kawulich, 2012).
Research design	A detailed blueprint, which guides a research study towards its objectives and towards answering its questions (Cooper & Schindler, 2006:762; Aaker et al., 2011:70).
Revised Technology Acceptance Model (TAM)	Venkatesh and Davis (1996) removed the need to have the attitude construct within the TAM model (see Technology Acceptance Model below). Consequently, it was proved that both ease of use and usefulness had a direct influence on behavioural intent.
Social influence	The influence of others on a person's social norms, beliefs and environment (Lu et al., 2003; Wei et al., 2009; Zhang et al., 2012).
Technology Acceptance Model (TAM)	The TAM model explains the determining factors of computer acceptance and the consumers' behaviour across a variety of computer technologies and user populations (Davis, 1989).
Theory of Planned Behaviour (TPB)	A singular factor that influences the behavioural intent of an individual's attitudes toward such behaviour (Ajzen, 1991).
Theory of Reasoned Action (TRA)	A framework that has been widely utilised to determine behavioural intent of a person's attitude towards that behaviour (Ajzen & Fishbein, 1980).

Trust	Trusting an m-commerce service provider to handle personal as well as financial details (Deng et al., 2010).
Trust Building Model	The model suggests that two sets of constructs that cite quality and perceived reputation, which influences the trusting beliefs of a user (perceptions of the characteristics of a specific online business platform) and trusting intentions towards online business platforms (McKnight et al., 2002).

CHAPTER 1
INTRODUCTION AND RESEARCH BACKGROUND

1.1 Introduction

The chapter includes various sections such as the background of the research study, which includes literature pertaining to facts around the growth of digital shopping channels, and consumer behaviour towards digital shopping channels, particularly Generation Y consumers globally. The research problem statement will also be discussed in detail. An overview of mobile commerce literature and consumer behaviour will also be included. Other sections include the research objectives that are translated from the research questions, and the hypotheses and conceptual framework of this study, which include eight independent variables (trust, social influence, usefulness, ease of use, mobility, enjoyment, involvement and innovativeness), which will be tested for linear relationships in terms of customer satisfaction. Further sections will also deliberate on the details around the research design and methodology, the validity and trustworthiness of the research measurement tool and results, the boundaries of the study, the ethical considerations, and the significance of the study in terms of its addition to the existing body of knowledge.

1.2 Background to the research problem

Globally, e-commerce sales reached $3.5 trillion in 2019 driven by the top 5 retail e-commerce markets globally, which are estimated to account for about 85% of total e-commerce sales by 2022. Markets such as China grew more than 30% to about $2 trillion in the year 2019, and the US is expected to grow by 15% to reach $600.6 billion in revenue. The UK is predicted to grow by 11% to $137 billion, Japan by 4%, and Korea by 11% (Koch, 2019e). In 2019, e-commerce in South Africa accounted for 2% of total retail sales, and initially saw a 25% growth from 2018 (Hartzenberg, 2019). E-commerce vendors are engaging customers through mobile telecommunication devices because of the benefit of developing unique mobile commerce value propositions that originate from certain dimensions of convenience, omnipresence, personalisation and tailoring (Singh & Srivastava, 2019). Digital engagement is growing globally with business advertising spend also increasing; it grew from $39.9 billion during 2017 to $55.4 billion in 2018, and reached $67.2 billion in 2019 (Dolliver, 2019a). Across the world, downloads of mobile shopping apps have increased and reached 5.7 billion users in 2018, a growth of about 9.3% from 2017. App download platforms such as Google Play and Apple's App Store saw increases in app downloads, growing by 13.3% (around 3 billion downloads) and 4.2% (2.4 billion downloads) respectively (Koch, 2019c; Wurmser, 2019). The RetailMeNot survey found that users of the internet in the US now bypass in-store assistance requests and opt to use their smartphones for product or service information such as

comparing costs, searching for promotions, and product reviews (69% of survey respondents) (Koch, 2019d).

The growth of m-commerce in current times cannot be ignored, in that several international studies have focused on the adoption, attitudes or perceptions of m-commerce (Kumar & Mukherjee, 2013; Holmes et al., 2014; Kim et al., 2015; Marinkovic & Kalinic, 2017:138-154; Bento et al., 2018; Sethi et al., 2018; Thaker et al., 2018; Verkijika, 2018; Applebaum, 2019; Droesch, 2019b; Du et al., 2019; Hartzenberg, 2019; Izogo et al., 2019; Kalinić et al., 2019; Koch, 2019a; Koch, 2019b; Lipsman, 2019; Singh & Srivastava, 2019; Wawira, 2019; van Noort & van Reijmersdal, 2019; Fisher, 2020; Haumer et al., 2020). However, there are several studies within this discipline that encouraged further research since there are uncertainties regarding some factors, such as what drives customers to engage in mobile shopping, the benefits that customers believe mobile shopping delivers, the post-purchase shopper experience on m-commerce applications, as well as how benefits are perceived compared to other channels (Holmes et al., 2014; Kuo et al., 2016; Marinkovic & Kalinic, 2017; Wijesooriya & Sritharan, 2018; Chung, 2019; Kalinić et al., 2019; Thakur, 2019; Marinao-Artigas & Barajas-Portas, 2020). Liébana-Cabanillas et al. (2017), Rezaei and Valaei (2017), Veerasamy & Govender (2017), Kalinić et al. (2019) and Pipitwanichakarn and Wongtada (2019) propose that empirical studies on consumers' adoption of mobile distribution channels and factors, which influence consumers' perceptions or attitudes, need to be conducted to contribute to the m-commerce body of literature. The literature shows that retailers need to understand mobile shopping channels, the lifestyle of their customers, as well as smartphone features, in that there is a potential to revolutionise the shopping experience. These studies were mostly conducted in developed countries and among young consumers (Generation Y). Consequently, developing countries have experienced high penetration of smartphones as well as mobile internet connectivity, and have young consumers with different social and ethnic backgrounds. Hence, further research is encouraged in developing countries such as South Africa to compare and validate outcomes (Jobodwana, 2009; Kim et al., 2010; Schierz et al., 2010; Yoon, 2010; Chong, 2013; Niranjanamurthy et al., 2013; Lu, 2014; Mahapatra, 2017; Veerasamy & Govender, 2017; Fisher, 2020; Singh & Srivastava., 2019).

In Africa, the mobile economy contributed 7% ($110 billion) towards the continent's total GDP in 2017, which was fuelled by the increase in mobile subscribers, access to affordable smartphones, bandwidth data packages, and the convenience of remote purchasing and information gathering about services and products (Wawira, 2019). South African marketing activities in 2019 showed significant trends skewed towards m-marketing and the growth in m-marketing is attributed to consumers' adoption of mobile devices, in that 54% of South Africans are deemed to be online,

while 55% of internet users purchased online, and 38% of the total online purchases were made on mobile devices (Hardcastle, 2019). By the end of February 2020, there were reportedly over 9 billion mobile connections, and over 5 billion unique mobile subscribers globally, and the African sub-continent accounts for approximately 10% of the worldwide mobile subscriber base (GSM Association, 2020). The increased penetration of mobile devices particularly smartphones, as well as high speed internet access are important to an increased intention to use such technologies, and improved levels of usage in commercial activities, particularly among the Generation Y cohort (Liébana-Cabanillas et al., 2017). Although not widely adopted or accepted yet by most consumers in South Africa, m-commerce has been largely used by businesses across different sectors. South Africans surveyed by BuzzCity indicated that more than one-third use their mobile devices to do daily shopping such as magazine and parking coupon purchases (Kim et al., 2015). Although the South African m-commerce industry has experienced a growth in current times, research studies among the Generation Y market in South Africa have not kept up with the pace of this growth, so further empirical studies among Generation Y within developing countries are suggested (Bevan-Dye et al., 2012; Botha, 2015; Cobanoglu et al., 2015; Duh & Struwig 2015; Potgieter, 2015; Bevan-Dye & Akpojivi, 2016; Mahapatra, 2017; Zhang et al., 2017; Veerasamy & Govender, 2017; Thaker et al., 2018).

Current mobile shopping consumers around the world can be considered as early adopters, in that the current information age, mobile devices have become an important social accessory for the youth, especially young adults or students, also referred to as Generation Y (Lenhart et al., 2010:19; Celik, 2011; Eastman & Liu, 2012; Parment, 2013; Valentine & Powers, 2013; Al-Debei et al., 2015:708; Chuah et al., 2017; Soares et al., 2017; Bento et al., 2018; Sethi et al., 2018). Mobile devices have made it easy for Generation Y consumers to stay connected, in that they are portable, easy to use, and affordable. Mobile device usage is not merely a habit, but can also be regarded as addictive, and is probably the biggest non-drug addiction in the 21st century (Xu, 2016). Pantano and Priporas (2016) state that Generation Y consumers are prepared to engage in mobile shopping and revolutionise their established purchasing behaviours to avoid queues in walk-in retail stores. A majority of Generation Y consumers in the US engage with smartphones and around 84.8% were digital shoppers in 2019 (Dolliver, 2019b). While overall adult customers' first choice of a device on which to conduct online shopping is the desktop, and that is growing at a rate of 5%, contributing to revenue of $331.8 billion during 2019 (Droesch, 2019b).

In 2019, a majority of smartphone users bought something at least once using their smartphones in the US and the overall smartphone retail m-commerce revenue reached $203.9 billion. Mobile smartphone shopping accounted for about 40% of the total revenue, and around 40% of the traffic

of total e-commerce revenue in the US (eMarketer Editors, 2019). 57% of Generation Y shoppers in the US purchased through e-commerce in mid-2019 according to results of the CPC Strategy report (Koch, 2019b). While in another study, 75% of Generation Y survey respondents in the US claimed that they shopped online after they had visited a store and left without a purchase (Bizcommunity, 2019a). Consumer research conducted by IRI found that online grocery buying is also skewed towards Generation Y consumers in the US (Lipsman, 2019). Younger consumers lead the way when it comes to shopping using their mobile devices, which is also evident from survey results conducted among 3 000 US millennials that found around 75% of Generation Z and Y consumers use their smartphones to shop online (Applebaum, 2019). About 55.4 million Generation Y consumers utilise digital banking services according to the Marqeta consumer behaviour survey conducted in the US (Koch, 2019a). Generation Y customers appear to be a significant age group within the broader South African market due to the cohort's buying power, as well as their economic impact on our country (Pantano & Priporas, 2016; Applebaum, 2019; eMarketer Editors, 2019; Hartzenberg, 2019; Koch, 2019a; Koch, 2019b). Hence, this study aims to offer a South African perspective on the drivers of customer satisfaction with m-commerce among Generation Y consumers.

1.3 Problem statement

Businesses use mobile platforms such as mobile apps for m-commerce and as a retail channel, given that mobile devices are personal devices that are most likely to be with a consumer regularly and can be used as a substitution for cash and a bank card (Apanasevic et al., 2016; Izogo et al., 2019). M-commerce has a positive persuasive impact on consumer shopping experiences; thereby it is increasing interest in both brands, as well as brands' product categories (Bellman et al., 2011:191-200; Kumar & Mukherjee, 2013:23; Mobile Marketing Association of South Africa, 2015:14-25; van Noort & van Reijmersdal, 2019; Haumer et al., 2020). In addition, retaining customers is crucial for business; therefore, businesses should include m-commerce providers in their distribution strategies, in that appealing to prospective customers can be a costly exercise for businesses. However, interaction with customers might not lead to future purchases if customer satisfaction is not achieved. Consequently, it is essential for marketers to understand customer behavioural intentions and experiences through the m-commerce channel (Bevan-Dye et al., 2012; Holmes et al., 2014; Botha, 2015; Cobanoglu et al., 2015; Duh & Struwig 2015; Potgieter, 2015; Bevan-Dye & Akpojivi, 2016; Kuo et al., 2016; Mahapatra, 2017; Marinkovic & Kalinic, 2017; Zhang et al., 2017:736; Veerasamy & Govender, 2017; Thaker et al., 2018; Wijesooriya & Sritharan, 2018; Chung, 2019; Kalinić et al., 2019; Thakur, 2019; Marinao-Artigas & Barajas-Portas, 2020).

Various authors have determined drivers of customer satisfaction, namely trust, social influence, perceived usefulness, perceived enjoyment, mobility, ease of use, innovativeness, as well as involvement. Trust is the key driver of customer satisfaction with m-commerce (San-Martín & López-Catalán, 2013; Lee & Wong, 2016; Du et al., 2019). It is also important to understand the trust and relationship developed over time between customers and businesses (Verkijika, 2018). Munoz-Leiva et al. (2017) declare that perceived usefulness also influences customer satisfaction in mobile shopping. Perceived usefulness is one of the predictors of the intent to engage in mobile shopping and which affects consumer satisfaction (Yoon, 2010; Chong, 2013; Lu, 2014; Marinkovic & Kalinic, 2017:138-154). Mobility influences customer attitudes to usage and intent of usage, and influences usefulness of mobile shopping (Kim et al., 2010; Schierz et al., 2010). Schierz (2010) state that perceived mobility is regarded as one of the key drivers of mobile shopping adoption. Chong (2013) indicates that the second highest impact on satisfaction is perceived enjoyment, after trust, and continued intent to engage in m-commerce. Perceived ease of use has the most significant influence on m-commerce users as compared to perceived usefulness (Chen et al., 2010). Perceived ease of use also directly influences consumer satisfaction (Brandyberry et al., 2010). Highly involved customers always seek to get satisfaction, in that being knowledgeable about a product guides them to better choices while purchasing (San-Martín& López-Catalán, 2013). Innovativeness is said to have an influence on customer satisfaction with modern technological advancements, like banking via the internet and electronic fund transfers (Chen et al., 2010).

Other factors that have a relationship with the mobile shopping activities are delivery of content, searching for location, transactions, and entertainment, which is perceived enjoyment (Chan & Chong, 2013). M-commerce is characterised as being able to strengthen the relationship of customers with the business (Zhang et al., 2012; Lin et al., 2014). Chong (2013) and Singh et al. (2020) reveal that social influence is one of the drivers of m-commerce adoption, and an influence on intent to engage in mobile shopping. A study, which was conducted across two cultures, confirmed that trust is the leading driver to the engagement with mobile shopping, with social influence being second (Chong et al., 2012). This research focuses on a developing economy rather than a developed economy, and thus seeks to validate the drivers of customer satisfaction in mobile commerce among Generation Y consumers in Cape Town.

1.4 Overview of mobile commerce and consumer behaviour

In this section, the relevant literature related to mobile apps and m-commerce is reviewed. The section also includes an outline of mobile platforms, which marketers can utilise as mobile marketing communication tools. The section also provides an outline of mobile marketing, mobile

app history and functionality, a description of m-commerce within the business environment, customer satisfaction in m-commerce, as well as Generation Y consumer behaviour with regard to certain business activities.

1.4.1 Mobile marketing

Mobile marketing was primarily used for instant message and for advertising purposes (promotions and special offers) directed at prospective customers (Pantano, 2013; Maity & Dass, 2014; Wang et al., 2015; Broccardo, 2019). Mobile marketing is the second largest advertising medium after TV globally (Warc, 2019). Global mobile marketing spend amounted to about $125.6 billion. Mobile spend has been increasing year after year due to an increase in the access of mobile internet, and the growing access to social media platforms (Bizcommunity, 2019b). This strategy has also led to negative customer reactions due to their being unable to restrict advertising delivered to their mobile phone, and the intimate nature of mobile devices (Nasco & Bruner, 2008; Priporas & Mylona, 2008; Andrews et al., 2012; Amirkhanpour et al., 2014; Tang & Hew, 2019).

In recent times, mobile marketing has extended to technologically advanced devices such as mobile apps, therefore stimulating customers' preferences and interests (Pantano, 2013; Maity & Dass, 2014; Wang et al., 2015; Broccardo, 2019). Expert mobile marketers lead the way in innovation in the mobile marketing fraternity, and have designed an exceptional customer experience with their brands on mobile devices. The retail industry has been among the most committed to integrating mobile into their marketing mix with QR codes in store, fully augmented mobile websites with features such as store finders, locators, search tools, and order and pay facilities (Pantano, 2013; Lin et al., 2014; Zhao & Balague, 2015; Ramos-de-Luna et al., 2016; Okazaki et al., 2019).

Mobile marketing can be utilised to enhance customer interaction with a business, using a variety of mobile activities such as instant messaging, advertising, signed-up marketing, content, and m-commerce (Barrett, 2012; Watson et al., 2013; Smith, 2019; Lin & Bautista, 2020). Nonetheless, marketers have utilised marketing strategies that are customised for mobile channels that are targeted at how customers engage with their mobile devices (Kaplan, 2012; Chou et al., 2016; Brinson et al., 2019; Tong et al., 2020), thereby building strong relations with customers, engaging them with customised marketing communications, m-commerce services and mobile stores (Watson et al., 2013). Mobile marketing is based on the distribution of interactive and tailored information by overcoming the paradigm of time-space where traditional marketing strategies took place (Pantano & Priporas, 2016). Kaplan (2012), Gao et al. (2013), Ström et al. (2014), Narang and Shankar (2019b) and Tong et al. (2020) mention that mobile marketing strategies should encompass new activities using a universal network to connect with customers anywhere, and any

time through high level connectivity on their mobile devices. It has been questioned whether the mobile channel has resulted in increased sales for the retail industry or has it merely transferred customers from one platform to the other, from e-commerce to m-commerce (Huang et al., 2016; Feng et al., 2019; Osinga et al., 2019; Wang et al., 2019). Thus, due to the increased influence that m-commerce has on a global scale, this study seeks to understand consumer post-purchase satisfaction levels.

1.4.2 Mobile platforms available for mobile marketing

Platforms for mobile apps are twofold: first, there are digital platforms, which relate to the mobile phone's operating system; secondly, the business relationship among the entities involved in the mobile application network, and these are known as economic platforms. The platforms are essential to mobile applications that are developed for smartphones with different operating systems, and thus the use of such applications for mobile marketing purposes. There are two approaches to going mobile, firstly the mobile app, and secondly the mobile website (Wong, 2012).

Table 1.1: Three major mobile operating system platforms

Operating system	**Android**	**iOS**	**Windows Phone**
Market share	73.43%	25.75%	0.12%

Source: Statcounter (2020b)

1.4.3 Mobile apps

Mobile apps are utilised as a digital marketing channel, with which consumers decide to interact with a brand (Kim et al., 2015; van Noort & van Reijmersdal, 2019). Many mobile applications appear on both the two largest app platforms, Apple's application store and the Google Play store (Droesch, 2019a). Consumers who want to use retail based mobile app facilities have to download the app from their mobile device's application store, and it will be either transactional or non-transactional depending on the retailer (Wong, 2012; Lin & Chen, 2019). There are several options for retailers, such as mobile apps, mobile website (by viewing a mobile browser using internet), as well as the retailer's web application, accessed via the mobile browser (Liu et al., 2019; Amrouche et al., 2020; He et al, 2020).

Clement (2019a) suggests that a third of internet users globally used mobile payment systems in 2018, with the Asia Pacific region accounting for most usage, followed by North America, the Middle East; Africa was ranked last, accounting for only 29% of the total usage. It is estimated that by 2023 there will be around 1.3 billion mobile payment users globally, which is an increase from 950 million users in 2019. In 2018, the most popular payment methods accepted by businesses

globally were debit cards, credit cards, and PayPal. 29% of businesses accepted mobile wallets (an increase from 24% in 2015) such as Apple Pay, Visa Checkout, and PayPal (Clement, 2019a).

Purchasing a brand's offerings through a mobile device is a convenient way to make purchases (Grotnes, 2009), in that access is through either tablets or smartphones. Mobile apps have the same functionalities as personal computer web pages, such as viewing business offerings, interacting with different offerings by viewing pictures, finding business contact information and business locater, and to place and pay for orders. Mobile-commerce is administered using retail mobile apps (Yang, 2005); there were 500 000 mobile apps available for download on the iPhone's Operating System alone around 2012, and throughout this has increased exponentially in that by 2019 there were about 3 billion app downloads globally (Koch, 2019c; Wurmser, 2019).

In this regard, mobile apps have become a payment mechanism and a channel for retailers to interact with customers, since mobile devices are personal devices that are most likely to be with a consumer regularly and used as a substitution of the bankcard (Kim et al., 2015; AlFahl, 2019; Bhullar & Gill, 2019; Humbani, 2019; Saha, 2019). Clothing and accessories are by far the most purchased product category among many product categories sold through m-commerce (Kim & Han, 2015; Enberg & Aho, 2019; Aguilar-Illescas et al., 2020).

1.4.4 Mobile commerce

The development of m-commerce can be traced to the e-commerce model, which involves using desktop computers and laptops (Jobodwana, 2009; Niranjanamurthy et al., 2013). Although e-commerce user penetration globally is only 54.9% in 2020, it is estimated to increase to 62.7% by 2024. E-commerce revenue amounts to about $3.8 million in 2020 in South Africa, and it is projected to increase by 6.7%, equalling a market volume of $4.9 million by 2024 (Statista, 2020a). In 2019, direct-to-consumer ecommerce sales were $14.28 billion in the US (eMarketer Editors, 2020b). Late into the second quarter of 2020, the Coronavirus (Covid-19) pandemic adversely affected the global markets. The pandemic has shifted consumer choices and that is evident in the US where mobile shopping app downloads increased by 20% during 2020 compared to the previous year, reaching 14.4 million downloads (Kats, 2020). Allied Market Research (2020) mentioned that the mobile payment market is expected to reach $4.5 billion by 2023. Countries across the globe implemented citizen lockdown laws, which resulted in consumers staying indoors and having limited access to outdoor shopping, and only for products classified as essential, the only products that could be sold from physical business premises. This resulted in an increased demand for online shopping, which also included mobile. A forecast for 2020 year-end sales was conducted by eMarketer Editors (2020b) and they estimated that sales would increase by 24.3%, to a total of $17.75 billion.

The recent emergence of mobile networks as well as wireless internet has influenced an emergence of the use of a relatively new platform (m-commerce) for business to trade their services and products. E-commerce connectivity transpires via the internet, whereas mobile commerce is connected wirelessly using mobile phones/devices (Coursaris & Hassanein, 2002; Wei et al., 2009; Pantano & Pripolis, 2016). M-commerce growth globally will result in 53% of all online traffic coming from mobile devices (Clement, 2019b). M-commerce encompasses services and applications, which can be accessed using internet-enabled mobile devices. With m-commerce, consumers can browse, compare, purchase products, and make payments using mobile technologies such as smartphones and tablet computers (Coursaris & Hassanein, 2002).

Consumers do not only use their mobile devices to make purchases, in that they also mostly engage in activities such as product reviews (Wei et al., 2009; Holmes et al., 2014; Mahapatra, 2017). There is no doubt that technological advancements have resulted in the uptake of digital commerce platforms (Mahapatra, 2017). Balasubramanian et al. (2002) suggest that m-commerce offers convenience of both time and place. Consumers can transact on a smartphone instantly, anytime and anywhere (Wei et al., 2009; Mahapatra, 2017). Mobile shopping applications have also seen a significant growth globally, and many consumers have bought or browsed products or services using their smartphone or tablets (Droesch, 2019a).

1.4.5 Customer satisfaction in m-commerce

Customer satisfaction is the evaluation of expectations before a purchase, and the result following the purchase. Moreover, customer satisfaction derives from consumer's evaluation of a post-purchase experience of a service or product (Zeithaml et al., 2006). San-Martín and Lòpez-Catalan (2013) propose that customer satisfaction results in a favourable influence on customer loyalty. Customer satisfaction is also important to the adoption of modern 4G mobile technologies (Park & Kim, 2013). Analysis in a research paper by Lee et al. (2015) demonstrates that the attitude towards the usage of the mobile app is also a significant factor in customer satisfaction. It is important for businesses to achieve buyer satisfaction and trust to maintain long-lasting relationships between consumers and firms in m-commerce (Lam & Shankar, 2014).

Given that a series of positive encounters increase consumer satisfaction and trust, the probabilities of consecutive purchases increase as well (Lee et al., 2015). Seemingly, trust and customer satisfaction are key variables to the growth and improvement of mobile shopping (Mallat, 2007; Gu et al., 2009; Yeh & Li, 2009; Lin, 2011; Zarmpou et al., 2012; Chemingui & Ben Lallouna, 2013; Groß, 2015; Zhao & Balague, 2015; Aguilar-Illescas et al., 2020). The effects of customer satisfaction on consumer behaviour are diverse and they go beyond the purchasing intention. For

instance, customer satisfaction is responsible for communication between consumers (word of mouth), and it is important in building trust, as well as customer loyalty (Eggert & Ulaga, 2002; Ribbink et al., 2004; Park & Stoel, 2005; Choi et al., 2008; Yeh & Li, 2009; Kuo et al., 2016; Lee & Wong, 2016; Marinkovic & Kalinic, 2017; Wijesooriya & Sritharan, 2018; Chung, 2019; Kalinić et al., 2019; Thakur, 2019; Marinao-Artigas & Barajas-Portas, 2020).

1.4.6 Generation Y

Generation Y (referred to as Millennials) cohort members refers to those who were born in 1982 until after the turn of the 21st century (Chuah et al., 2017; Bento et al., 2018; Sethi et al., 2018; Bedgood, 2019). Results published by Stats SA (2019) show that those in the age group 15 to 34 comprise approximately 17.8 million members, which accounts for about 25% of the total population in South Africa. Millennials grew up in a time of advancements and technology and are in the frontline of the digital era (Hawkins & Mothersbaugh, 2010; Eastman & Liu, 2012; Bilgihan et al., 2013; Parment, 2013; Valentine & Powers, 2013; Bump, 2014; Belch & Belch, 2015; Pantano & Priporas, 2016). They also grew up in a consumption-driven contemporary society and have more money at their disposal than any other group in history (Applebaum, 2019; eMarketer Editors, 2019; Hartzenberg, 2019; Koch, 2019a; Koch, 2019b).

In the global marketplace, Generation Y consumers have emerged as a significant force to be reckoned with, given that they are arguably the largest group of consumers in any economy. Bedgood (2019) advocates that in the US, Generation Y consumers spend about $600 billion every year with average yearly expenditures of around $47 112. This consumer segment outnumbers all other age groups regarding mobile minutes (voice) used, text messages, and data bandwidth usage and are known to be early adopters of technology (Lenhart et al., 2010; Okumus & Bilgihan, 2014; Elangovan & Agarwal, 2015; Bhatt, 2016; Olivier & Terblanche, 2016; Droesch, 2019b; Koch, 2019a; Briggs, 2020; eMarketer Editors, 2020b; Williamson, 2020b). A survey conducted by Roth Capital Partners and Alliance Data also shows that more than half of Millennial respondents in the US utilised a mix of digital and physical stores to acquire information before buying various products among many product categories (Chadha, 2019). Generation Y consumers' mobile phone usage is not only restricted to mobile shopping, but to various mobile platforms such as social media, where they are most likely to be exposed to social influences on the type of purchases they decide to make (Rogers, 1995; Lu et al., 2003; Bhatti, 2007; Wei et al., 2009; Chinkanda, 2019; Dolinschek, 2019; Flemming & Goolam, 2019; Monyai, 2019; Ndashe, 2019; Bizcommunity, 2020;

Droesch, 2020; Enberg, 2020; Williamson, 2020a). Hence, it is essential for this study to understand this target market group within in the marketplace.

1.5 Research questions

1.5.1 Primary research question

Are the hypothesised constructs (trust, social influence, mobility, perceived enjoyment, perceived usefulness, perceived ease of use, involvement as well as innovativeness) drivers of customer satisfaction with mobile shopping apps?

1.5.2 Secondary research questions

- Do usage characteristics influence customer satisfaction with mobile shopping apps?
- Do demographic factors have an effect on customer satisfaction with mobile shopping apps?

1.6 Research objectives

1.6.1 Primary research objective

To validate whether the hypothesised constructs (trust, social influence, mobility, perceived enjoyment, perceived usefulness, perceived ease of use, involvement as well as innovativeness) influence customer satisfaction with mobile shopping apps

1.6.2 Secondary research objectives

- To ascertain whether usage characteristics influence customer satisfaction with mobile shopping apps.
- To establish demographic characteristics have an effect on customer satisfaction with mobile shopping apps.

1.7 Hypotheses

Customer trust towards a business increases the intention for a customer to buy a service or product (Jarvenpaa et al., 1999; Bilgihan & Bujisic., 2015; Chang et al., 2019; Zhu et al., 2019; Alharbi et al., 2020). Business trustworthiness perceptions can increase customer loyalty and ultimately repeat purchase (Diamantopoulos & Winklhofer, 2001; Gefen, 2002; Bilgihan, 2016; Paparoidamis et al., 2019; Wong et al., 2019; Elizar et al., 2020). It is also hypothesised that

customer trust initially improves customer satisfaction with a business's offering (Cyr, 2008; Kim et al., 2009; Arcand et al., 2017; Chou & Kohsuwan, 2019; Srouji et al., 2019). Hence, it was proposed that:

H1. Trust positively influences customer satisfaction with the m-commerce channel.

For some customers, engaging with mobile commerce apps would be through the persuasion of family or friends who have previously used such services (Shaw & Sergueeva, 2019). Once customers are dissatisfied with a service or product that they have bought, they are bound to feel post-purchase dissonance (Lamb et al., 2008; Jain et al., 2018; Yang et al., 2019; Lazim et al., 2020). When customers feel dissatisfied or feel post-purchase dissonance they tend to share their negative experiences with others, resulting in negative word of mouth, thus influencing others in the process (Takács et al., 2016; Sohaib et al., 2019; Wan Ismail et al., 2019). Mehmood et al. (2018) states that unmet customer expectations in an online shopping context result in negative word of mouth. Dissatisfaction experienced by customers happens because of a variety of reasons such as service failures contributing towards negative affective and cognitive experiences in online shopping (Barari & Ross, 2020). Kuo and Nakhata (2019) advise that exposure to negative online word of mouth affects the relationship between the customer and the retailer, since it leads to decreased customer satisfaction. Negative word of mouth has a significant influence in this regard. Thus, for this study, the following is hypothesised:

H2. Social influence negatively influences customer satisfaction with the m-commerce channel.

Perceived usefulness is known as one of the factors that contribute towards consumer attitudes (Davis, 1989). Therefore, this motivates consumers to start using innovative and user-friendly systems that enable freedom with regards to payments, transactions, and more (Zhou, 2011). Mobile banking is seen as convenient when it comes to the cost and time associated, since it is very useful because users can perform several activities such as checking account balances, paying bills, and transferring money with all the convenience that leads to costs and time being saved (Kim et al., 2009; Abayomi et al., 2019; Baabdullah et al., 2019; Sharma & Sharma, 2019). A consumer's perception of usefulness can greatly contribute to their willingness to use a certain system (Hanafizadeh et al., 2014), and it is suggested that experiential value partly mediates the relationship between post-usage usefulness and mobile app satisfaction (Rezaei & Valaei, 2017). Isrososiawan et al. (2019) and Li and Fang (2019) state that perceived usefulness influences

continuance intention for branded mobile apps directly or indirectly through customer satisfaction. Hence, it is hypothesised that:

H3. Perceived usefulness positively influences customer satisfaction with the m-commerce channel.

Clarke (2001), Nohria and Leestma (2001), Coursaris and Hassanein (2002), Mallat (2007), Au and Kauffman (2008), Mallat et al. (2008) and Mallat et al. (2009) suggest that the best quality for mobile technology is the mobility aspect, which refers to the ability for individuals to access services universally, while on the move, and via wireless networks using different types of mobile devices. Mobility often is an essential driver of mobile commerce acceptance, and it is concluded that mobility is a noteworthy construct of attitude towards intent to use, and usage within mobile payment services (Schierz et al., 2010; Xu et al., 2019). However, Barutçu et al. (2015) reveal that mobility is not a significant driver of customer satisfaction with mobile commerce. Sanny et al. (2019) and Palacios and Jun (2020) mention that shopping convenience is one of the main sources of customer satisfaction. Hence, the following is proposed in this study:

H4. Mobility positively influences customer satisfaction with the m-commerce channel.

Mobile commerce apps are mostly developed for consumer entertainment purposes, such as social networking, mobile videos, and mobile gaming. Thus, perceived enjoyment is an essential influence on continuance intent to engage in m-commerce (Chong, 2013). Zhang et al. (2012), Avornyo et al. (2019) and Alalwan (2020) suggest that perceived enjoyment is a significant driver of m-commerce acceptance. Perceived enjoyment is also a significant predictor of the intention to use mobile commerce applications (Dai & Palvia, 2009; Ko et al., 2009; Chemingui & Ben Lallouna, 2013). Chan and Chong (2013) state that the enjoyment construct has a noteworthy relationship with mobile commerce adoption and certain functionalities such as location-based services, content delivery, entertainment, and financial transactions. Enjoyment significantly influences trust, attitude, and online shopping customer satisfaction (Marza et al., 2019; Sudarti & Rhemananda, 2020). Thus, the above leads to the following hypothesis:

H5. Perceived enjoyment positively influences customer satisfaction with the m-commerce channel.

A person's perception of the ease of use of a system is called the perceived ease of use construct (Davis, 1989). Leong et al. (2011) found that perceived ease of use, perceived usefulness, and

past usage behaviour are factors that influence Malaysian mobile entertainment adoption. Perceived ease of use is responsible in determining subscribers' intentions to use 3G mobile service (Suki & Suki, 2011). Perceived ease of use is one of the strongest influencing antecedents on the continuance intent to use new technologies (Ramos-de-Luna et al., 2016; Alalwan, 2020). Hanjaya et al. (2019), Humbani (2019) and Isrososiawan et al. (2019) state that perceived ease of use of mobile payment technology positively influences the perceived usefulness and satisfaction of the usage of mobile payment technologies. Kavitha and Kannan (2020) declare that perceive ease of use also increases the intention to use mobile applications such as mobile wallet technologies. Ease of use also drives customer satisfaction in online shopping (Singh et al., 2020; Sudarti & Rhemananda, 2020). As a result of the above discussion, it is hypothesised that:

H6. Perceived ease of use positively influences customer satisfaction with the m-commerce channel.

A positive significant influence of customer involvement in profitable relationships is confirmed within the context of relatively new services such as mobile commerce (Svendsen et al., 2011). Holmes et al. (2014) assert that highly involved consumers use smartphones to shop since they value the accessibility and convenience. The main driver for mobile hotel app usage is customer involvement followed by perceived personalisation and app-related privacy concerns (Morosan & DeFranco, 2016). Customisation and customer involvement are the most significant antecedents of the intention to use m-commerce (Liébana-Cabanillas et al., 2017; Mou et al., 2019; Cheng et al., 2020). Involvement is also an influential factor for customer satisfaction in mobile app users (Lu et al., 2019; Menidjel et al., 2019). Thus, the following is hypothesised:

H7. Involvement positively influences customer satisfaction with the m-commerce channel.

Customer innovativeness has a direct influence on perceptions and an indirect influence on attitude and purchase intention within mobile shopping (Kumar & Mukherjee, 2013). A study by Thakur and Srivastava (2015) found consumer innovativeness to be a key variable to improve online shopping adoption intention, both directly and by its positive influence in reducing consumers' perceived risk for using the online channel to purchase products. Alalwan et al. (2018) state that the innovativeness construct has a positive influence on customer intent to adopt the mobile internet in the Kingdom of Saudi Arabi. There is a significant positive influence of ease of use, perceived usefulness, attitude, innate innovativeness and domain-specific innovativeness on consumers'

adoption intention for internet banking usage (Chauhan et al., 2019). Sanny et al. (2019) assert that innovativeness is a source of customer satisfaction in digital shopping. Hence, this research study hypothesises the following:

H8. Innovativeness positively influences customer satisfaction with the m-commerce channel.

1.8 Conceptual framework

A conceptual model was developed for the purpose of validating linear relationships between each of the eight independent variable constructs and customer satisfaction (dependent variable) within the context of mobile commerce apps. The constructs (also hypothesised above) were adapted from various research model/frameworks such as The Theory of Reasonable Action, the Theory of Planned Behaviour, the Technology Acceptance Model (TAM), Revised Technology Acceptance Model (TAM), and Trust Building Model (TBM) (Fishbein and Ajzen, 1975; Davis et al., 1989; Ajzen, 1991; Venkatesh & Davis, 1996; McKnight et al., 2002). The above frameworks were considered since they are used to measure consumers' behavioural outcomes in the context of technological advancements in business. Figure 1.1 (below) is a depiction of the conceptual framework for this study, which will be fully discussed in Chapter 4.

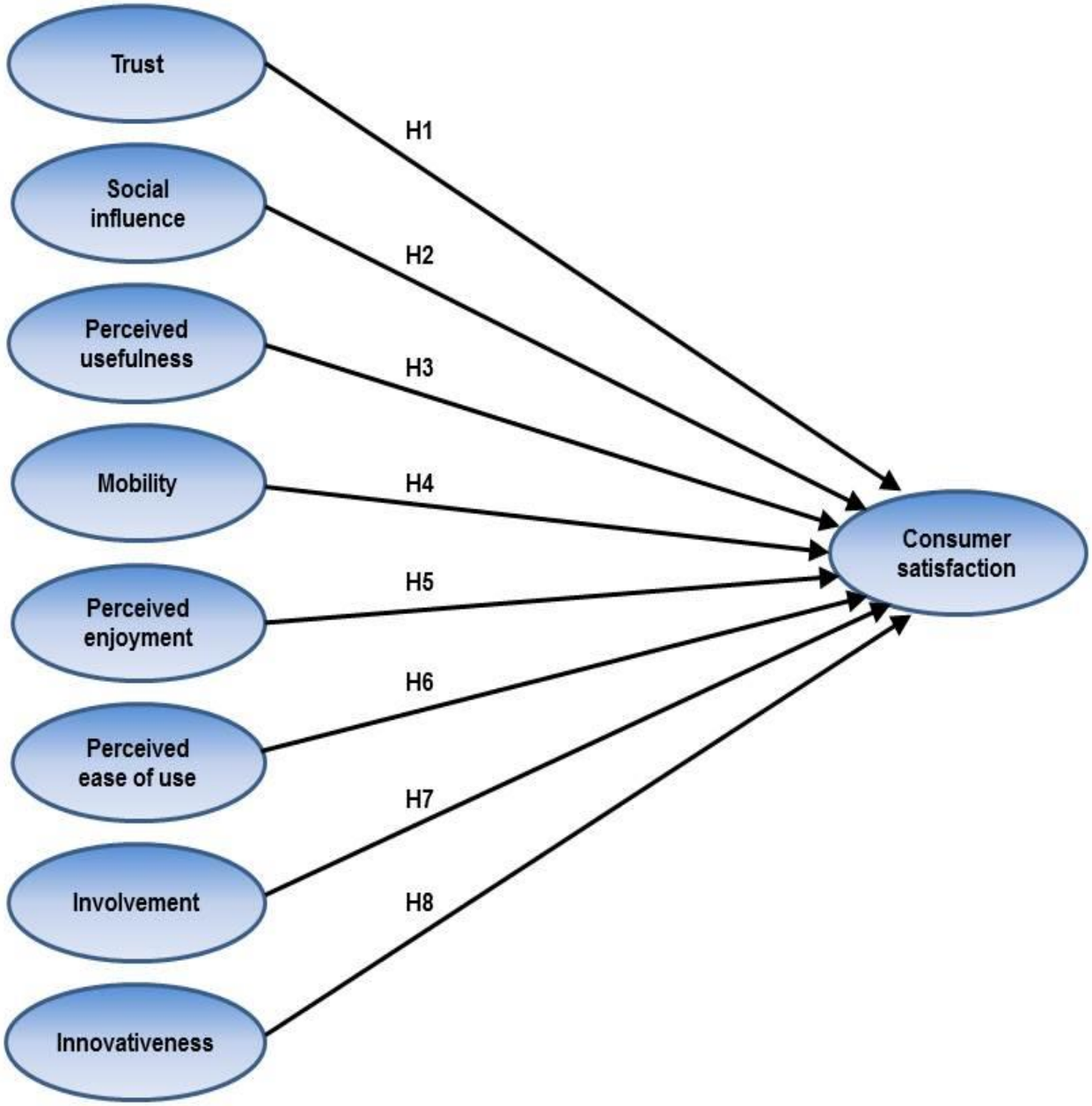

Figure 1.1: Research model

Source: Adapted from San-Martín& López-Catalán (2013); Lee et al. (2015); Marinkovic and Kalinic (2017)

1.9 Research design and methodology

1.9.1 Research paradigm

A positivist paradigm declares that real life events can be observed empirically and reported via logical scientific analysis (Kaboub, 2008); this paradigm was therefore adopted for the study since it sought to measure customer behaviour (Schiffman & Kanuk, 2008).

1.9.2 Research design

This study followed a research design that was descriptive in nature as the results of this study sought to describe customer satisfaction in terms of detailed answers to each of the tested constructs and their influence on customer satisfaction in mobile commerce (Churchill & Lacobucci, 2004:91; Aaker et al., 2011:73).

1.9.3 Sampling

Research population: this included individuals who were categorised under a cluster of similar preferences. In the case of this study, Generation Y mobile device users in Cape Town were considered as the research population (Cant et al., 2008:164).

Sample frame: this is a subgroup within the whole population, and consists of selected individuals to form part of a research sample (Churchill & Lacobucci, 2004; Zickmund & Babin, 2007; McDaniel & Gates, 2008:332; Churchill, 2010:284). Generation Y mobile commerce users residing in Cape Town were used as the sample frame for this study.

Sample unit: Generation Y mobile shoppers in Cape Town were the sample units for this study, since they formed part of the target research group (Aaker et al., 2004:375; Wiid & Diggens, 2009:194).

Sample element: an individual Generation Y mobile shopper residing in Cape Town, and who had used a mobile commerce app was considered as a sample unit for this study (Cant et al., 2005:166; Nargundkar, 2008:90).

Sampling method: for various reasons, non-probability sampling techniques (convenience and snowballing) were used to select respondents for this study. These techniques made it possible for the researcher to gather data easily among Generation Y individuals, and to receive referrals of other qualifying respondents (Cooper & Schindler, 2006:439; Churchill et al., 2010:332; Aaker et al., 2011:349).

Sample size: 5 497 responses were received for this study, and these responses were in proportion of the research population (Cooper & Schindler, 2006:445).

Sample errors: The main sampling error in this study is the fact that this study cannot be generalised to the whole South African Generation Y population (Burns & Bush, 2010:366; Aaker et al., 2011:335). Additionally, the non-probability sampling method techniques could also be problematic, which could be minimised via a large sample size (Hair et al., 2009:237).

1.9.4 Data collection and questionnaire design

Data collection for this study began with a pilot study including 50 respondents in order to finalise the questionnaire before initial fieldwork. The fieldwork (data collection) occurred in Cape Town, which is the main region where respondents were approached to participate in this study (Burns & Bush, 2010; Aaker et al., 2011:214). A combination of both paper-based questionnaires and online survey instruments were used as data collection tools through platforms such as SMS, email, and social media platforms. The questionnaire included several sections: the first section included usage factors; the second section included respondent demographic factors; and the final section included a Likert scale, which consisted of various statements that addressed the hypothesised constructs.

1.9.5 Data analysis

The data from the completed questionnaires in this study was analysed via descriptive statistics and statistical modelling such as a generalised linear model (GLM) (using Wald's Chi-Square) and structural equation modelling (SEM) (Cooper & Schindler, 2006:468; Aaker et al., 2011:380). Computer statistical software packages were also used to enable the statistical outcomes, namely IBM SPSS and AMOS.

1.10 Trustworthiness and validity of the research

A user perception measure has validity if it measures what it is supposed to measure (Aaker et al., 2011:269). This research study was valid because it used measurement scales such as the Likert scale and a rank order scale, which are scales that were validated and used in previous studies to measure the influence of the constructs (Marinkovic & Kalinic, 2017:138-154). This research was also reliable, because the measurement instrument was designed such that it would attain consistent scores if the same respondent completed another questionnaire across time and different evaluators (Churchill et al., 2010:357). Cronbach's Alpha and composite reliability measures were used to assess the reliability of the study. Convergent validity was considered by the individual Likert scale items factor loadings and average variance extracted (AVE), whereas discriminant validity was examined by computing the square root of AVE for each scale, which was larger than the correlations between the scales.

1.11 Delineation of the research

This inquiry was limited to Cape Town's geographic boundaries. Further parameters restricted the study to retail mobile shoppers or m-commerce consumers. Smartphone users who had not previously shopped (for any item) via their mobile devices through a mobile app were not included

in the study. Additionally, since a non-probability procedure was used for this study, findings could only be based on the sample achieved, and are not representative of all mobile retail consumers in South Africa. Only mobile shoppers of the Generation Y age cohort were considered.

1.12 Ethical considerations

Consent to partake in this study was required from all respondents. Ethical clearance for the research was sought and received from the Faculty of Business and Management Sciences Research Ethics Committee at the Cape Peninsula University of Technology (CPUT). To ensure that participants of this research understood the nature of the study, a detailed background was attached to the questionnaire, as well as a consent form. The short brief reiterated the ethical considerations that were involved in this study. Respondents were given the right to privacy and confidentiality, as well as the right to withdraw from the study at any given time. The consent form was signed by the respondents before the fieldworkers commenced.

1.13 Significance of the research

This study contributed to the existing mobile app and m-commerce body of literature for future research reference and provided insights that will assist retailers and marketers to promote and sell their products via mobile distribution channels. The findings should also advise and guide marketers who continue to rely on mobile platforms as to whether consumers' behavioural attitudes are favourable or not, especially those that will benefit their business. The outcome of the study should also assist m-commerce managers or providers to improve and better understand the user experience, which should result in continued use and customer satisfaction. This study also validated the relationship between each construct and the level of satisfaction among mobile shoppers.

1.14 Outline of the study

Chapter 1: Introduction and research background: the overview defined m-commerce, its background, the problem statement, preliminary literature review and the research approach.

Chapter 2: Literature review: m-commerce was discussed in detail, as were the adoption of m-commerce, and its advantages and disadvantages.

Chapter 3: Literature review: consumer behaviour as a subject was discussed, as well as the target market being studied. This chapter also reviewed and discussed literature from recent studies pertaining to M-commerce and its influence.

Chapter 4: Research methodology: the methodology and design of the research were explained, and the framework for this study was discussed.

Chapter 5: Summary of findings: a detailed summary of the findings was included, and the results recorded in tabular format.

Chapter 6: Discussion, conclusion and recommendations, limitations and further directions for research: specific aims and overall objectives of the study were reiterated. Conclusions were drawn and different recommendations were discussed from this research.

1.15 Summary

This research study was introduced, in which factors such as the growth of e-commerce and ultimately the birth of m-commerce through the need for convenience for e-commerce shoppers were outlined. The chapter also focused on the background to the research, where suggestions from other authors and the need to expand on existing empirical findings were discussed. The growth and the background of m-commerce in context of South Africa were reviewed, as well as Generation Y (the target study group) and their engagement with mobile commerce. The problem statement was thoroughly explained in terms of the research potential and the need to conduct this research study within the South African context. An overview of literature was also discussed, which pertained to the mobile commerce industry and consumer behaviour. The research questions and research objectives were described, which were set to determine the influence of different factors towards overall customer satisfaction with mobile commerce. Eight hypotheses were developed to validate each antecedent's relationship with customer satisfaction with mobile commerce. The research and methodology included a summary of the research design, sampling, data collection, and questionnaire design and data analysis techniques. Trustworthiness, reliability and validity of the research were outlined, as was the delineation of the research, which indicated some of the limitations of the study. The ethical considerations, consent of participants and CPUT ethical approval were highlighted. The significance of this study, contributions towards industry knowledge, and outline of the study comprised the final sections of this chapter.

CHAPTER 2
AN OVERVIEW OF M-COMMERCE AND ITS IMPACT ON BUSINESS

2.1 Introduction

The previous chapter identified the statement of the research problem and provided an overall research study outline. In this chapter, the relevant literature related to mobile apps and m-commerce is reviewed. The chapter also includes an outline of mobile platforms, which marketers can utilise as mobile marketing communication tools. Areas to be elaborated in this chapter include an overview of the internet, e-commerce, mobile marketing, mobile apps, and mobile commerce, which includes the background, concepts relating to both m-commerce and e-commerce, and business categories within m-commerce and e-commerce.

2.2 The internet

The internet stems from an exploratory idea developed by a group of scientists during World War 2; the objective was to share information securely and to minimise spying. Scientists at Rand Corporation conceived a new way of connecting computers using an idea they called a 'fishnet' (Van Sluyters, 1997). In this way, information could flow along different paths, and an approach called the Packet Switched Network was used, which involved information being split up into tiny packets and sent via various routes (Leiner et al., 2009). In the late 1960s, four American universities took the next steps in further exploring the idea and developed the ARPnet to share information among them (Van Sluyters, 1997). The computer-sharing network was a success from then on, with e-mail a popular application in 1972. The computer network grew steadily, linking various government departments and universities (History.com Staff, 2010).

In 1983, the Internet then consisted of fewer than 500 host computers. By 1987, the Internet had grown to 28 000-host computers at various stages at universities and research labs. The rapid growth of the Internet then led to it being officially governed by The Internet Working Group to control the standards of the network (Botha et al., 2004; Curran, 2016; Rogers, 2017; Stafford et al., 2019). The Internet then only existed among scientists and academics before the phenomenon of the World Wide Web, but it has since been rolled out to the global community and is currently the leading enabler of mobile shopping.

2.3 World Wide Web

Commercial traffic was then allowed on the backbone of the Internet in the late 1980's by the Network Science Foundation network, and the foundation of the World Wide Web was then established (Van Sluyters, 1997; Botha et al., 2004; Leiner et al., 2009; History.com Staff, 2010). A

group of scientists developed an application that could be used on HyperText Mark-up Language (HTML). Then again, a university student during the time developed a computer programme called Mosaic, which he made using the Web and it was as easy as clicking at pictures and underlined words (Botha et al., 2004:3; Leiner et al., 2009; History.com Staff, 2010).

The World Wide Web connects users to internet websites and the basic unit of World Wide Web communication, the page, like any printed physical pages. Inside a web page, there are links that users can click on and are automatically connected to related pages on internet websites, which also include numerous e-commerce websites (Van Sluyters, 1997:163; Chaffey, 2004; Jobodwana, 2009:287; Niranjanamurthy et al., 2013:2360; Di Fatta et al., 2016). The World Wide Web has since grown and has become a popular facility, and it has become synonymous with the Internet (Capriotti, 2017; Jacksi & Abass, 2019).

Although current mobile shops are not entirely developed in the World Wide Web, but rather on mobile applications, the World Wide Web still has its essential role to play since in most cases businesses use a website simultaneously with any other technological advancement or business channel.

2.4 E-commerce

Businesses realised that the internet could be used to publish information on a server, allowing many people to have immediate access to it (Botha et al., 2004:3). The business phenomenon, that is now called e-commerce began to emerge in the mid-1990s and grew rapidly in the 2000s (Chaffey, 2004; Schneider, 2007:4). This phenomenon resulted in unrealistic significant growth predictions among analysts during 2000 to 2003, which led to companies observing the growth without clear direction on how to respond. Companies that survived the reduction in revenue during the boom of e-commerce saw a loss in sales margins during the time. Traditional retailers around the world are operating in an environment that has seen a notable growth of electronic commerce, which involves purchasing products or services using a personal computer (Krishnamurthy, 2003:4; Chaffey, 2004; Schneider, 2007:4).

Combe (2004) notes that e-business is an enabler of business processes online such as electronic commerce, organisational internal communications among employees, and external communication with customers, suppliers, and other stake holders. E-business involves a broader range of processes such as internal transactions within an organisation, which are related to

procurement, logistics, supply chain management, payments, stock control and order taking. E-commerce and m-commerce are subsets of e-business (Chaffey, 2004; Jobodwana, 2009:287; Niranjanamurthy et al., 2013:2360).

South Africa is the 35th largest e-commerce market, with revenue of around US$3 billion in 2019 (Ecommercedb, 2020). The user penetration in South Africa is 54.9% currently in 2020, which is estimated to increase to 62.7% by 2024. In the first half of 2020, the South African e-commerce market amounted to US$3.8 million, and the revenue is estimated to result in a yearly growth rate of 6.7%, which will result in a forecast market revenue of US$4.9 billion by 2024 (Statista, 2020a).

2.4.1 Definition

The internet and related technologies have enabled e-commerce (Krishnamurthy, 2003:14). E-business is the selling, buying, and servicing of products and services and marketing via the internet (Jobodwana, 2009:287; Niranjanamurthy et al., 2013:2360). E-commerce is categorised by several attributes such as the exchange of digitised information between parties, its technology-driven and technology-mediated functionalities, as well as electronically based intra- and inter-organisational functions that indirectly or directly support marketplace exchanges. E-commerce management relies on three key pillars, which are the internet and related technologies, the business model, and marketing (Krishnamurthy, 2003:14; Rayport & Jawsorski, 2004:3).

2.4.2 Categories in e-commerce

There are four distinct categories in e-commerce (see Figure 2.1) namely: business-to-consumer, business-to-business, consumer-to-business and peer-to-peer (Botha et al., 2004; Rayport & Jawsorski, 2004:4; Schneider, 2007:5).

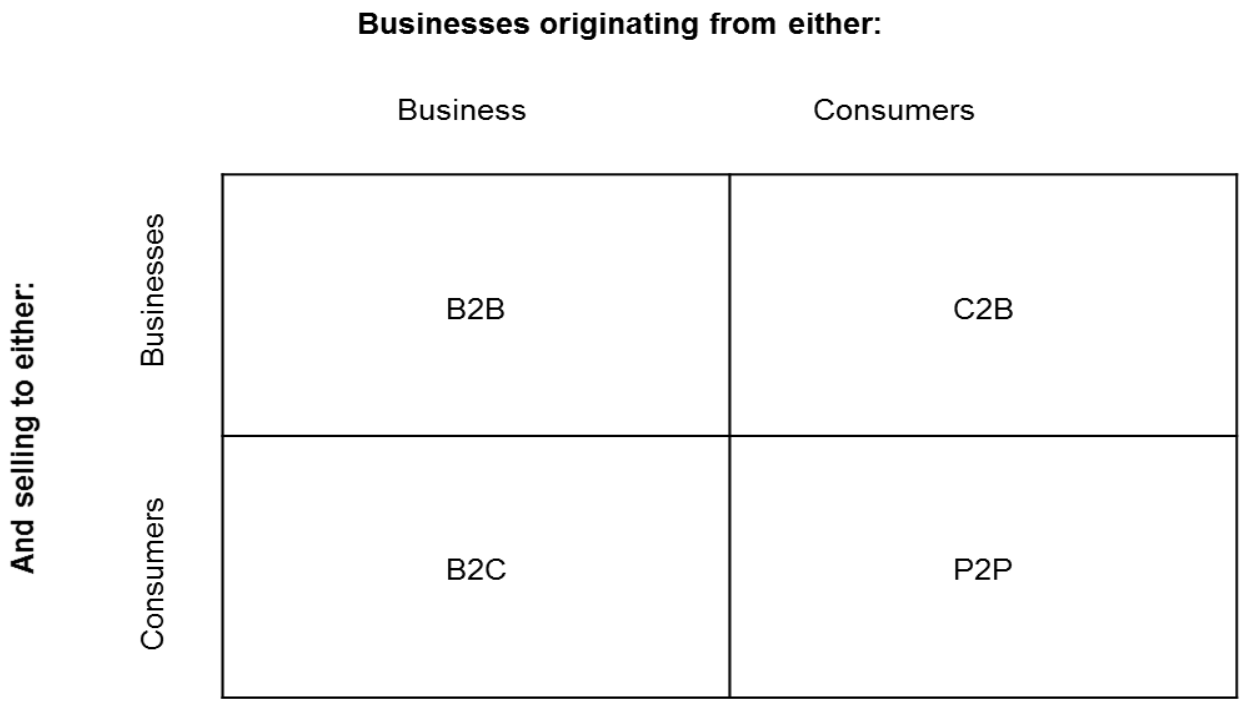

Figure 2.1: Four categories of e-commerce

Source: Rayport and Jawsorski (2004:4)

2.4.2.1 Business-to-business

Business-to-business activities refers to the full interaction of e-commerce that can occur among two organisations, among other activities, which includes procurement and purchasing, inventory management, supplier management, channel management, payment management, sales activities, and service and support (Botha et al., 2004; Rayport & Jawsorski, 2004:5; Schneider, 2007:5). Some major global players in this category include FreeMarkets, Dell, Dimension Data, and General Electric (Rayport & Jawsorski, 2004:5; Dell, 2020; Dimension Data, 2020; General Electric, 2020).

2.4.2.2 Business-to-consumer

Business-to-consumer e-commerce are transactions that happen on the internet between businesses and consumers, such as those managed by TicketWeb, Amazon, and Takealot (Botha et al., 2004; Rayport & Jawsorski, 2004:3; Takealot, 2018). Business-to-consumer transactions can include the transactions of digital products, physical products, or services, and are usually much smaller than business-to-business transactions (Botha et al., 2004; Rayport & Jawsorski, 2004:4; Schneider, 2007:5).

2.4.2.3 Peer-to-peer

Exchanges in this category include transactions between and among consumers. These transactions can include third-party participation, as in the case of the auction website eBay (Rayport & Jawsorski, 2004:4; Schneider, 2007:5). Other operations that support peer-to-peer activities include Gumtree, OLX, and Bidorbuy (Rayport & Jawsorski, 2004:4; Bidorbuy, 2018; Gumtree, 2018; OLX, 2018).

2.4.2.4 Consumer-to-business

Consumers can collectively present themselves as a buying group in a consumer-to-business relationship. These groups may be economically driven, as with demand aggregators, or socially oriented, as with cause-related advocacy groups such as SpeakOut.com (Rayport & Jawsorski, 2004:5; Schneider, 2007:5).

2.4.2.5 Business-to-government

Business-to-government includes business transactions with government agencies, such as paying taxes and filing required reports (Schneider, 2007:7).

2.4.3 Advantages and drawbacks of e-commerce

Short-term and long-term advantages of e-commerce include factors such as (Shim et al., 2000; Niranjanamurthy et al., 2013; Bulomine & Franco, 2016):

- Lower transactional costs
- Less physical paperwork for transactions like ordering billing, and customer service
- More customer feedback
- Endless opportunities for satisfying customer needs
- Improved measuring and reporting of customer satisfaction levels
- Ease of doing business with the current customer base
- New markets and new customers
- Ability to customise company solutions and activities for larger customers
- Enhancement a business's image

- Basic communication

- Creation of business value using organising, gathering, synthesising, selecting, and distribution (in any point of the value chain) to adapt sales, marketing, outbound and inbound logistics, and manufacturing processes to give better value.

Although e-commerce businesses have much potential, there are some drawbacks as well such as (Shim et al., 2000; Niranjanamurthy et al., 2013; Bulomine & Franco, 2016):

- Inadequate online payment instruments

- Poor security

- Insufficient directories

- The inability to foster trust between the business and the customers since there is no personal contact in accessing websites

2.4.4 Security threats to e-commerce businesses

Physical security issues such as those for businesses with a physical store location still exist in e-commerce businesses. E-commerce merchants who trade tangible products, as opposed to virtual products or services, still need to be concerned about burglary and shrinkage (Shim et al., 2000; Botha et al., 2004; Rayport & Jawsorski, 2004; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018). However, e-commerce security factors are far complex then in off-line commerce, such as the below.

2.4.4.1 Complex technology

Since offering products or services on the web is so reliant on innovation and technology, significant technological expertise is needed to secure an online business site (Shim et al., 2000; Botha et al., 2004; Rayport & Jawsorski, 2004; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.4.2 Many more potential attackers

Other issues affecting e-commerce businesses exist due to the global scale of e-commerce enterprises. The internet allows a website to be accessed by a global base of customers, which therefore potentially allows it to be accessed by a worldwide base of hackers and criminals (Shim

et al., 2000:15-16; Botha et al., 2004; Rayport & Jawsorski, 2004; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.4.3 Much more potential damage

E-commerce website functionalities are equivalent to a single physical retail store; however, threats of crimes are far greater for e-commerce businesses. For example, cybercriminals can access information such as the customer database of an e-commerce website, and information such as credit card details for every customer could be accessed. Cybercriminals have the potential to make an e-commerce website dysfunctional, which is equivalent to closing a physical retail store, resulting in loss of business (Shim et al., 2000; Botha et al., 2004; Rayport & Jawsorski, 2004; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.5 Security mechanisms for e-commerce businesses

As mentioned previously, e-commerce businesses are exposed to several threats that can hamper an e-commerce provider's business and ultimately affecting profitability (Shim et al., 2000; Botha et al., 2004; Rayport & Jawsorski, 2004:57; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.5.1 Secure sockets layer (SSL)

The secure sockets layer is a generic safe communication protocol, which establishes a protected communication channel between two computer devices. The parties communicating use the channel to exchange data in a private manner. A secure sockets layer also enables both parties to check the integrity of the data, and they have an option to authenticate each other (Botha et al., 2004; Nahm et al., 2004; Shin & Chun, 2010; Saito et al., 2012; Charjan et al., 2013; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.5.2 Transport layer security (TLS)

The TLS is an enhancement of the SSL, in that both SSL and TLS provide authentication, confidentiality and integrity, therefore giving protection against message tampering, spying and deceiving external protocols (Botha et al., 2004; Shin & Chun, 2010; Saito et al., 2012; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.5.3 Secure electronic transactions (SET)

The SET protocol was developed in 1996 by Visa and Mastercard. The protocol was made to provide trusted electronic transactions that would provide protection to all parties involved in the transaction, and address many of the restrictions associated with an SSL-only transaction (Hanaoka et al., 2001; Botha et al., 2004; Shin & Chun, 2010; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.5.4 3D SET

In 2000, Visa introduced 3D SET to address the lack of success of the SET protocol since it never reached critical mass. 3D SET was designed to drive the use of credit card and card transactions online, lower the complexities of the original SET protocol, and simplify the chargeback mechanism. The cardholder's e-wallet is transferred to a central server with the 3D SET protocol and maintained by the card provider or the bank (Botha et al., 2004; Shin & Chun, 2010; Yoon & Yoo, 2010; Patro et al., 2016; Muneer et al., 2018; Sharma & Singh, 2018).

2.4.6 Demographics

In the context of online shopping, there are demographic differences; the literature below provides an analysis of empirical studies.

From their annual tracking of digital purchases by age and gender, Cefrio (2019) found that in 2018 more men shopped online compared to women: 69% of males, versus 59% of females. At an overall level, 64% of the respondents were online consumers, with consumers between the ages of 18 to 34 leading the way. Lissitsa and Kol (2016) investigated the differences in the volume of purchases within online shopping among Generation Y and Generation X consumers in Israel. They found that the internet access rate was higher for Generation Y, although the percentage of those who purchased home appliances and furniture, or travel destinations, was greater in Generation X. Lim et al. (2019) reported that men showed more favourable attitudes toward online shopping, and they perceived online shopping to be more useful than women did. CouponFollow assert that digital purchasing tendencies by the Generation Y cohort were increasing (Koch, 2019). A consumer survey that included baby boomers, Generation X and Generation Y was conducted by Dhanapal et al. (2015). The study aimed to identify consumer perceptions of online shopping, as well as the challenges they faced with online shopping platforms in Malaysia. The results showed that the three generational cohorts perceived similar challenges within the online shopping process, and results show that Generation Y and Generation X do did more online shopping than baby

boomers. A study based on a sample of university students in Turkey examined the differences of consumer demographic factors in e-service quality and perceived value in online shopping (Yarimoglu, 2017). The study found that there were generational differences between Generations X and Y when shopping online. Younger online consumers were more inclined to purchase using internet channels. Bizrate Insights (2018) found that 23.8% of those between the ages of 18 to 29 years old and 28.8% of those between the ages of 30 to 39 years old bought food and beverages using an online channel in the past month. A dominant proportion of US Gen Z consumers are taking advantage of the 'buy online, pick up in-store' (BOPUS) concept. Package Concierge, a mailbox company in the US, state that 58% (more than half) of internet users between the ages of 18 and 25 had used BOPUS in the past month, with convenience and quick access to products being the main driver (Kats, 2019).

E-commerce is an important subject within this study in that m-commerce generally evolved from it. The only difference between the two is the type of channel used to shop online or via the internet. E-commerce is developed and accessed using a personal computer via the World Wide Web, while m-commerce is developed and accessed via a mobile device (tablet or smartphone) and downloadable mobile applications.

2.5 Mobile marketing

2.5.1 Overview

The evolution of marketing, which now is digital, has rapidly developed together with the advancements in technology since the late 1990s. Digital marketing started being popular with many businesses and was seen as a new philosophy in the early years of the 2000s. Modern business practices involved the marketing of services, goods, ideas, and information through the internet using digital platforms (El-Gohari, 2010). The transition into the digital dimension caters for knowledge sharing among individuals, allowing them to entertain one another, as well as promoting dialogues among people of different cultural backgrounds.

The sequence of the technological developments behind digital marketing is as follows: i) new technology emerges and is preserved by technologists and early adopters; ii) technology then develops a firm hold in the market and begins to be popular; iii) innovative marketers then start exploring ways they can harness the advantages of the new technologies to interact with targeted audiences; iv) technology then migrates to the mainstream and is adopted into various standard marketing principles, and mobile marketing is one of them. It is also essential for businesses to have a digital marketing strategy, to capitalise on the opportunities it brings, and to formulate a

digital marketing strategy, which will ensure that the business's efforts are focused on the most relevant elements of digital marketing for the business itself (Budden et al., 2011; Ryan, 2014; Diez-Martin, 2019; Domazet & Neogradi, 2019; Guoan & Xue, 2019).

Mobile marketing primarily used SMS tools for advertising purposes where text communications were sent to prospective customers about promotions, deals, special offers, and other marketing communication. This strategy has led to unfavourable customer feedback, because of the inability of customers to restrict advertising delivered to their mobile devices, as well as the intimate nature of mobile devices (Nasco & Bruner, 2008; Priporas & Mylona, 2008; Andrews et al., 2012; Amirkhanpour et al., 2014).

Classic mobile marketing relies on the distinctive mobile technologies of short messaging systems, multimedia messaging, Bluetooth, wireless access protocol and downloadable content. The introduction of wireless broadband internet to mobile devices has completely revolutionised its role in business and marketing (Dann & Dann, 2011; Perry et al., 2019; Zeadally et al., 2019). Mobile marketing has increased in importance within the retailing business market in that it has the potential to transform the retailing business model due to the steady increase of the mobile mass market as well as consumers' demand for convenience while shopping, such as time and location (Balasubramanian et al., 2002; Huang et al., 2019; Ratchford, 2019).

In mobile marketing, the essential entities are the mobile, the retailer and the consumer. In recent times, the mobile channel for marketing has evolved to advanced technologies such as mobile applications for smartphone devices; these allow customers to effortlessly find, compare and order products, create shopping baskets and save them, access news on products and services, etc., therefore stimulating consumers' preferences and likings (Pantano, 2013; Maity & Dass, 2014; Wang et al., 2015).

The retail industry has been among the most committed to integrating mobile into their marketing mix with QR codes in store, fully augmented mobile websites with features such as store finders, locators, search tools, and order and pay facilities (Pantano, 2013; Lin et al., 2014; Zhao & Balague, 2015; Ramos-de-Luna et al., 2016). The mobile channel for marketing also can be utilised to build consumer engagement with a business, through a variety of mobile activities such as mobile advertising, text messages, mobile content, permission-based marketing, user-generated content, and m-commerce (Barrett, 2012; Watson et al., 2013). Recently, the mobile channel has been questioned whether it has an influence on retail sales or it only results in consumers shifting from one channel to another, from electronic shopping to mobile shopping (Huang et al., 2016). Nonetheless, marketers have utilised the mobile channel's marketing strategies that are

personalised according to how customers access information using their mobile devices, and those that businesses have used as a means of delivering customised messages, services, and offers (Chou et al., 2016; Kaplan, 2012). Thus, it is important to build strong relationships with customers while engaging them with customised advertising communications, content and m-commerce (Watson et al., 2013). Therefore, an increased awareness among marketing practitioners has resulted to the need to develop new mobile marketing strategies.

Mobile marketing is based on the deployment of engaging content and customised information by evolving from traditional marketing strategies with the need for mobility and convenience in mind (Pantano & Priporas, 2016). Mobile marketing should include marketing activations that should be communicated through the internet, allowing customers to access the messages anywhere and anytime from their mobile devices, based on high-level connectivity and awareness (Kaplan, 2012; Gao et al., 2013; Ström et al., 2014). The second largest advertising platform worldwide is mobile, which is projected to overtake TV after 2019 provided that current growth rates are maintained, especially in 12 key markets, namely Brazil, Australia, France, China, Germany, Italy, Canada, India, Russia, Japan, US and the UK. These markets account for three-quarters of global advertising spend, and 91.1% of the total $125.6 billion global advertising spending was attributed to mobile advertising (Warc, 2019). The above literature shows that the mobile channel has had a significant impact on the business environment globally; hence, this study focuses on the mobile commerce industry as its main area of research.

2.5.2 Definition

“Mobile marketing connects businesses and each of their customers (through their mobile devices) conveniently (at the right time and/or place) with the relevant message and requires the customer’s explicit permission and/or active interaction” (Demetri et al., 2014). Narang and Shankar (2019b) state that mobile marketing is a two- or multi-way communication enabling promotions about offerings from a business to the end consumer through a mobile digital technological device, channel, or medium such as a smartphones and tablets (Shankar et al., 2010).

2.5.3 Mobile marketing framework

The framework conceptualising mobile marketing in the retail environment is illustrated in Figure 2.2 (Shankar et al., 2010).

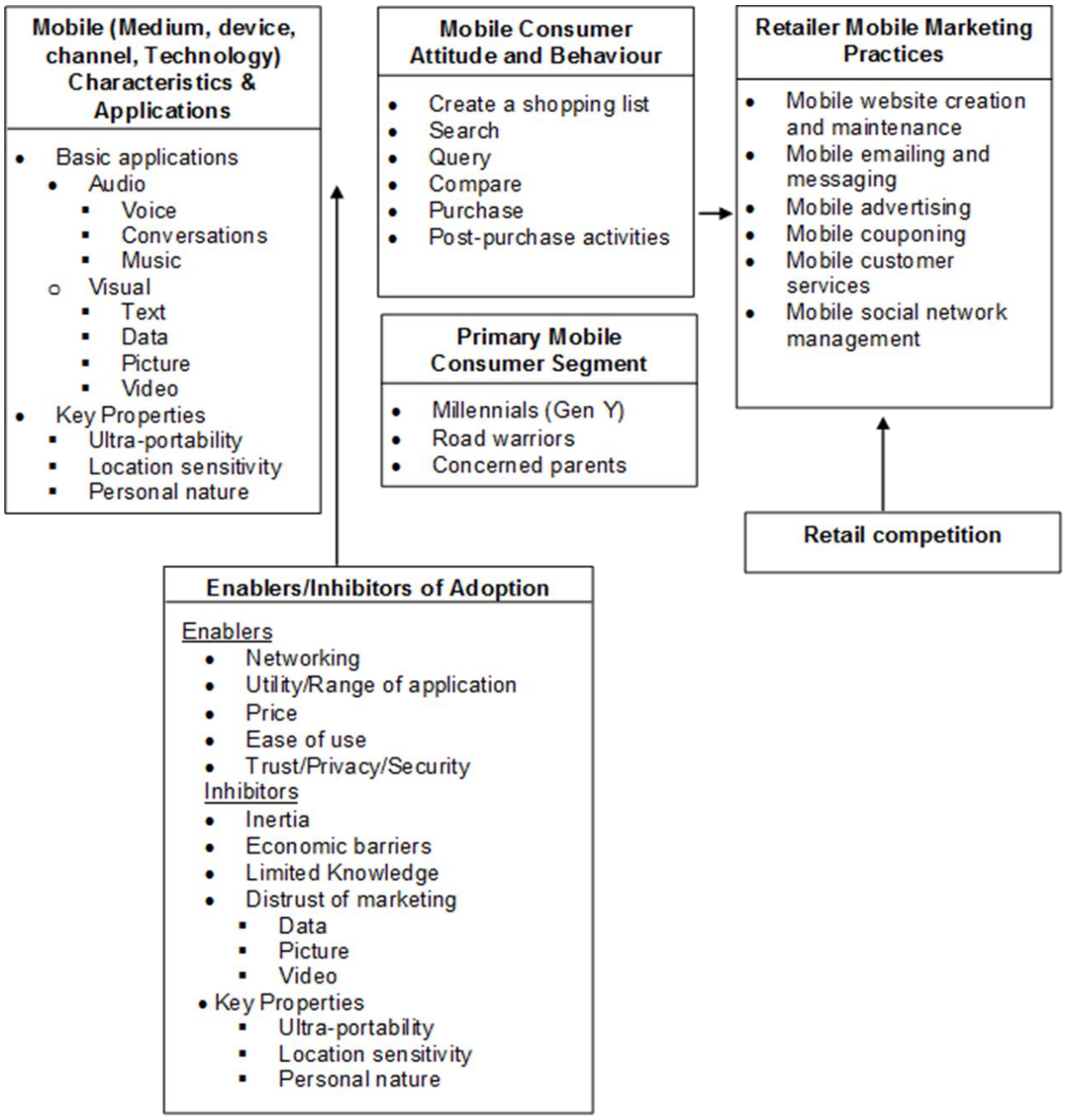

Figure 2.2: Conceptual framework of mobile marketing in the retail environment

Source: Shankar et al. (2010:28)

2.6 Mobile commerce apps

In this section, the mobile app market will be discussed. The discussion includes the background; the definition of mobile apps; usage growth and statistics related to revenue generated or spent through mobile app business channels; and a breakdown of different mobile commerce business categories available in the market.

2.6.1 Overview

At present, we have seen the introduction of 5G internet connectivity, which means that mobile devices now have faster internet browsing capabilities, which have presented businesses with further opportunities for executing marketing strategies using a variety of digital technologies and most recently through mobile devices.

Businesses are incorporating new channels to market and sell products/services, and various new apps are developed, and existing e-commerce apps have been migrated and duplicated on the mobile device channel (Niranjanamurthy et al., 2013). Changes in consumer preferences when it comes to payment channels have also increased competition in the business environment since advancements in technology have led to businesses adopting and including digital operations which also include receiving of payments digitally (Staykova & Damsgarrd, 2015; Pantano & Priporas, 2016).

Payments made via a mobile phone have provided a new channel of commerce and have increased competition among various payment service providers. Mobile payment systems rely on regular cellular coverage to create a phenomenon that was never present before, making payments using a mobile cell phone device. This has resulted in different strategies being implemented by businesses that focus on targeting user groups and mobile payment systems (Coursaris & Hassanein, 2002; Wei et al., 2009; Jobodwana, 2009; Wadhaval et al., 2013; Jain, 2014; Liu et al., 2015; AlFahl, 2019; Bhullar & Gill, 2019; Saha, 2019).

2.6.2 Definition

A branded mobile app is software, which is downloaded onto mobile devices and displays a brand identity, usually through the name of the app and the presence of the brand's logo or icon (Stocchi et al., 2019). Mobile apps are utilised as a digital marketing channel, with which consumers decide to interact with a brand (Kim et al., 2015). Consumers who want to engage with mobile shopping apps should download the mobile app from their smartphone's application store. Retailers have numerous options for selling operations including mobile apps, mobile websites and the retailer's web application, which are accessed via the mobile browser (Li et al, 2018; He et al., 2020). Purchasing a brand's offerings through a mobile device is a convenient way to make purchases (Almarashdeh et al, 2019), in that the access is either through tablets or smartphones. Mobile apps have the same functionalities as personal computer web pages, such as viewing business offerings, interacting with different offerings through visuals, finding business contact information

and business locations, and to place and pay for orders. Coursaris and Hassanein (2002), Wei et al. (2009), Jobodwana (2009), Niranjanamurthy et al. (2013), and Pantano and Pripolas (2016) state that the engagement and sale of products and services, using the mobile device through an application, is also referred to as m-commerce. Dann and Dann (2011) refer to m-commerce as "the broader domain that covers all aspects of the commercialisation of the mobile computing, mobile phone and e-device market". Mobile commerce transpires through the mobile device, and the mobile wireless technologies used enables the capability to overcome some of the problems associated with the e-commerce platform. M-commerce provides location convenience, which is an important influence on m-commerce adoption (Suoranta, 2003; Combe, 2004).

2.6.3 History

Some authors state that m-commerce is "e-commerce over mobile devices". Clarke III (2008) support other authors too, in that the author believes that m-commerce presents a chance for e-commerce to overcome barriers of the non-mobile personal computer, therefore m-commerce provided an additional channel for e-commerce. Coursaris and Hassanein (2002); state that just as e-commerce is a subset of e-business, m-commerce is also a natural extension in that it offers additional value to processes within e-business.

The acceptance of m-commerce is broadening the current e-commerce space, in that it changes consumer behaviour. This phenomenon is also noticeable on positioning strategies implemented by leading computer software brands and computer system brands during early stages of m-commerce adoption in the early 2000's; Microsoft had adjusted their slogan from "a computer on every desk in every home", to "empower people through great software, any time, any place and on any device" in responding to Nokia's phrase of "a computer in every pocket". The universal and convenience of m-commerce makes it an innovative phenomenon.

Value can also be derived by customers and businesses within m-commerce when utilising the time and space matrix to define the effect of adoption (Balasubramanian et al., 2002; Coursaris & Hassanein, 2002; Chipp & Ismail, 2004). Nohria and Leestma (2001) and Clarke (2008) mention that it is essential to understand that business models that were utilised solely for e-commerce and wireless internet purposes cannot simply be migrated onto m-commerce business models, in that unique properties within m-commerce have to be taken into account when developing mobile offers, and should not include the simple moving of online offers designed for personal computers to a mobile platform.

2.6.4 Mobile commerce usage growth and industry statistics

Mobile web usage has been overtaken by mobile app usage. The mobile app market is swamped, and mobile consumers have a wide variety of mobile apps from different mobile app stores as well as operating system platforms, which are downloaded through internet connectivity (Taylor & Levin, 2014; Malika et al., 2017). Some statistics relating to mobile app adoption show that 25% of installed mobile apps are never used by consumers, while use of about 26% of the mobile apps is discontinued after single use. Mobile customer retention has become a concern that marketers need to prioritise since 80% of all mobile apps are abandoned within 3 months, and 20% are retained and used further (Tiongson, 2015; Perro, 2018). The use of mobile app has increased in international markets such as India with a mobile app penetration rate of 30%, and consumers are using mobile apps mostly for shopping, social networking, banking, health, and entertainment (Okumus & Bilgihan, 2014; Elangovan & Agarwal, 2015; Bhatt, 2016; Olivier & Terblanche, 2016).

Mobile applications play a crucial role in mobile services nowadays due to the increasing demand from consumers who are seeking convenience, such as time and location, as well as the freedom of being able to engage with services anytime (Weiss, 2010; Song et al., 2012). Individuals' digital habits have been dominated by mobile apps due to the progress of mobile technological advancements, mobile access to 4G internet (high-speed), and innovative interactivity features on mobile phone interfaces. Mobile apps are useful due to a variety of features, from communicating to entertaining, causing individuals to dedicate excessive amounts of time engaging in them, which makes digital marketing communications highly persuasive (Hinchcliffe, 2013; Zhao & Balague, 2015; Wurmser, 2018; Reychav et al., 2019).

By 2017 m-commerce had risen to become one of the most important channels within the US retail industry (Chao, 2017). Subsequently, more business to consumer transactions were being completed via smartphone devices as compared to desktop or laptop computers because of the features that m-commerce encompasses. These features include the convenience and service, and its content characteristics (Hussain et al., 2017). A study on eMarketer (2019) predicts that by 2021 more than 20% of US smartphone users will order food via food delivery apps. In 2019, these apps were estimated to be used by 38 million people in the US, which is up 21% compared to 2018.

A study published by PWC Africa proves that smartphones are seen as the main technological innovation for online shopping globally, and the respondents (51%) claim that they pay bills, invoices, and transfer money via smartphones (PWC, 2019). Technological advancements such as software development are conducted in this ever-changing business environment, and

characteristics such as fast-changing markets, complicated and changing customer requirements, and shorter time-to-market pressure, are found in mobile software developments (Klepper et al., 2015). A study by Fitzgerald et al. (2013) suggests that about a third of industry managers and executives in their sample think achieving digital transformation is critical to their organisations, whereas 63% said their reaction to technological advancements is too slow.

In the current environment, business models based on mobile applications such as e-hailing car-sharing services, apartment rentals, food and clothing delivery services and others show that this phenomenon is a growing success. User feedback is important in the development of mobile applications since usability and user experience have an essential role (Krusche & Bruegge, 2014; Harris et al., 2016; Kumar, 2016; Johnson et al., 2018; Shaw & Sergueeva, 2019). User involvement and reviews including useful comments, fault reports, personal experiences, and feature requests, have continued to help developers to understand user needs for mobile applications and incorporating them into the process (Pagano & Bruegge, 2013; Pagano & Maalej, 2013).

Mobile channel strategies have become an important aspect for businesses to implement, and some businesses are at development stages while other are at implementation stage and are actively setting up portfolios of mobile phone applications. The development of mobile channel strategies has been a major challenge and branded mobile applications (branded apps) are widely adopted, resulting in businesses having to adapt to a new culture and to ensure that the profiles and competences of marketers adjust to this new phenomenon and consumer behaviours in the market (Hinchcliffe, 2013; Zhao & Balague, 2015; Reychav et al., 2019).

Consequently, many mobile apps are launched on app marketplaces (e.g. Google Play, Apple App Store, Huawei App Store, etc.) every day, to address the demands for activities such as games, online shopping, finance management, and other functions users can complete on their mobile devices. In 2018, more than two-thirds of mobile payment users were from both China and India (eMarketer, 2018b). For the fourth quarter of 2018, 18 million adults in the US used a mobile grocery app at least once a month, which showed a 49.6% growth from the previous year. Growth for grocery apps was being drove by the Amazon/Whole Foods merger and Walmart, which expanded its grocery distribution from six cities to 100 by the end of 2018 (eMarketer, 2018a). In the 4th quarter of 2019, Android operating system (AOP) users had the freedom to choose from 2.57 million apps, which made Google Play the app store with the greatest number of available apps to download. The second-largest app store is Apple's App Store with almost 1.84 million available apps for iPhone operating system (iOS) (Statista, 2018; Balapour et al., 2019; Clement, 2019b; Reychav et al., 2019).

There are various monetisation business models for mobile apps. Most common models are free mobile apps, which enable in-app purchases, paid or purchased mobile apps, and paid mobile apps enabled with in-app purchases that require an in-app subscription. The mobile app gaming market has thrived in the global mobile app market: Google Play Store's 2018 revenue shows that mobile gaming apps accounted for 87% of gross mobile app revenues. The top two highest gross revenue generating mobile apps were Coin Master, which generated approximately $91.26 million, and Candy Crush Saga, which generated revenue around $44.43 million in worldwide revenues in March 2020. At the end of 2019 m-commerce accounted for over a quarter of the total e-commerce revenue in the US market. US revenue is expected to rise from $128.4 billion in 2019 to $418.9 billion in 2024 (Meola, 2019; Clement, 2020a). 42% of brand interactions driven by mobile devices involve the Google search engine (Blue Corona, 2019). During 2019, mobile devices dominated the global website traffic share with a share of 53.29% (Statcounter, 2020a). Within the Google search engine, 58% of the searches were done using a mobile device. Around 65% of the paid clicks on Google's search engine were generated using mobile devices (Statista, 2020a).

Due to the importance of mobile applications in the current global economic system, the author focused on studying consumer behaviour towards mobile application owned by businesses. The literature shows that a majority of customers globally are mobile-based and therefore drive m-commerce success. M-commerce apps also function as both a shopping channel and a mobile marketing tool at the same time. The topic is important for this study in that the fundamentals of mobile marketing also apply to mobile app developers and vendors, thus being at the centre of understanding customers' needs. This research will assist vendors who are currently using the mobile application channel to do business with consumers or those who are yet to adopt and use the mobile app channel to understand what drives customer satisfaction with mobile commerce.

2.6.5 Benefits of m-commerce

M-commerce has several benefits that it offers to businesses such as reduced operational costs, which are reduced by eliminating time-consuming and labour-intensive tasks, so more sales can be achieved in the same period and with increased accuracy in place. Several other benefits also exist such as increased speed in the flow of goods/services and information management. M-commerce offers to businesses an increase in the consistency of producing high quality customer services by meeting customers' needs and therefore increasing customer loyalty. Convenience is another benefit that m-commerce offers to customers, in that customer can now simply click on their mobile devices and bank, shop, or download media files. Ease-of-connectivity is another benefit since customers can easily access the internet via their smartphone using mobile apps. Another benefit is the time factor, since m-commerce is time-efficient, as a user is not required to plug the device in

or switch on a personal computer or laptop to engage in business activities, but rather can do so at a click of a button (Stair & Reynolds, 2010; Niranjanamurthy et al., 2013; Baby, 2019; Kumar & Dadhich, 2019; Rana et al., 2019; Radhika, 2020).

2.6.6 Challenges in m-commerce

M-commerce is associated with several challenges. In mobile banking, mobile cell phones with a smaller screen size and screen resolution, and an uncooperative keypad can make it difficult for customers to use mobile banking effectively. Privacy is also a big problem for customers due to the increase of identity theft and impersonation.

There are various challenges that face m-commerce vendors such as the cost of establishing a mobile and wireless broadband infrastructure, wireless network coverage issues at times, security issues, screens of most devices limiting the data format of files and data transfer, limited use of graphics, and technical mismatching among various devices. There are also challenges that affect m-commerce users such as slow access speed, high cost of phones, lack of awareness, user interface that are often challenging to learn how to use, cost of data bundles, and low internet connectivity (2G, 3G) (Kim et al., 2009; Niranjanamurthy et al., 2013; Bonga, 2019; Chauhan, 2019; Mishra, 2019; Radhika, 2020).

2.6.7 M-commerce business categories

2.6.7.1 Mobile banking

The ability to bank and transact virtually through an m-commerce mobile app at any convenient time is considered to be mobile banking (Suoranta, 2003; Sampaio et al., 2017). Tiwari et al. (2006a) and Tiwari et al. (2006b) believe that mobile banking is the foundation of m-commerce, since most banks have utilised virtual services globally, and it undoubtedly leads the way for mobile business adoption.

Banks have invested in mobile technologies in order to conduct business with their customers, while providing them with benefits and satisfaction from the use of the mobile banking apps (Benedicktus et al., 2010; Laukkanen & Kiviniemi, 2010; Shaikh & Karjaluoto, 2015). The extensive growth of mobile banking facilities triggered thought leaders such as Bill Gates to forecast the future of mobile banking apps, which he believes will be used by more than two billion customers (Sampaio et al., 2017).

In South Africa, banks have caught up with the latest technological advancements and have increased their channels with which they interact with their customers, including mobile apps. In order to have access to a mobile banking app a customer has to go through several steps that

include downloading the latest version of the mobile banking app for smartphones from an app store (Absa, 2019). To link their customer profiles with the new downloaded app they then have to open the app and link their online banking profile using their online banking credentials (Capitec, 2019). The last step is to have an administrator authorise the link request. Thereafter, a variety of functions can be enjoyed, which include sharing account details directly from the app, paying bills, sending money, buying prepaid airtime, buying prepaid electricity, internet data and SMS bundle accounts, transferring money between accounts, creating and managing beneficiaries, and managing card limits (FNB, 2019; Nedbank, 2019; Standard Bank, 2019).

Security measures are crucial for mobile banking platforms for the protection of mobile banking app users, to prevent hackers from accessing information, and banks use data transmission as an authentication tool to give access to the data to only authorised users (Pousttchi & Schuring, 2004). Alalwan et al. (2016), Koksal (2016) and Laukkanen (2016) indicate that benefits such as security, which are also related to the protection of privacy, as well as benefits related to user-friendly features, complement the convenience of using banking apps. Suoranta (2003) believes that these factors can also be seen to influence the adoption of mobile banking among customers.

Consumer attitudes to mobile banking is highly influenced by previous technologies of similar nature, such as e-commerce platforms, the individuals' acceptance of new technologies and demography for developed markets (Cudjoe et al., 2015). Consumer readiness for mobile banking services is influenced by factors such as the cost and existence of digital infrastructure (internet broadband and wireless services), mobile banking systems' functionality, consumer perception, and the levels of familiarity with technological advancements (Hayashi & Toh, 2020). Thusi and Maduku (2020) state that antecedents such as performance expectancy, habit, facilitating conditions, and behavioural intent have a noteworthy influence on Generation Ys' intention to adopt mobile banking apps. They further suggest that customer perceived risk and behavioural intention have a direct impact on Generation Ys' mobile banking usage behaviours. Wasiul et al. (2020) reveal that factors such as perceived ease of use, usefulness, trust of the service provider, and security concerns have a significant favourable influence on mobile banking app usage.

For customer satisfaction with mobile banking, it is essential in that it is an effective response to purchase situations (Sampaio et al., 2017). Püschel et al. (2010) and Mohammadi (2015) specify that prior satisfaction can be also seen as antecedent to the result of being satisfied with mobile banking apps. Customer satisfaction with mobile banking applications is one of three top factors that influence customers' continuance intention for mobile banking applications (Poromatikul et al., 2019). Factors such as self-efficacy, channel importance and personal level of savviness are the main drivers of perceived mobile banking application value among banking consumers. They further suggest that the value attached to mobile banking application is also essential in yielding a positive overall customer experience (Foroughi et al., 2019; Karjaluoto et al., 2019).

2.6.7.2 Mobile e-hailing taxicab services apps

The transportation system in any city is essential in providing mobility to complement the economic environment (He & Shen, 2015). Taxicabs provide some advantageous attributes for commuters compared to other forms of public transportation, such as speediness, door-to-door services, comfort, and a 24-hour service (Salanova et al., 2011). Horn (2002), Miwa et al. (2013), and Jung et al. (2014) note that the advancement of technology in current times has brought about taxicab business models that stem from digital platforms such as mobile applications. E-hailing of taxicabs technology resulted in an evolution from the traditional hailing on the streets, where street-hailed taxicabs mostly offer low quality experiences to commuters.

The growth of smartphone usage globally has led to a higher demand for e-hailing mobile apps, such as Uber, Taxify, Did, Lyft and Kuaidi among the few popular e-hailing providers (He & Shen, 2015). Veloso et al. (2011) and He and Shen (2015) explain that the e-hailing mobile application connects customers (riders) with independent contractors (drivers) speedily and provides precision from start to the end of each trip. Further, e-hailing mobile applications offer riders and drivers a platform to communicate effectively and transparently, where the drivers' and riders' information (driver and rider names, drivers' pictures, historical ratings on the platform, trip details regarding the riders' pick-up location, as well as their ultimate destination).

The two major players currently in the South African market are Uber and Taxify Bolt; both these e-hailing providers have mobile apps that function similarly. A rider would need to create an account for which they would need an email address and cell phone number. A rider then will be able to request a ride from the web browser or from the Uber app, which is downloaded from Google Play or the App Store. A rider than has to enter the destination after opening the app, tap to confirm the pickup location, and then tap again to confirm, to be matched to a nearby driver. After the ride has arrived, the rider has to check the ride if it corresponds with the one displayed on the app, climb and ride, and upon reaching the destination the rider is then asked to rate the driver, and the driver also rates the rider (Bolt, 2019; Uber, 2019).

E-hailing services provide transportation as either a substitute or complementary to public transport or vehicle owners. E-hailing operations provides drivers with freedom to dictate their own schedule and working hours, cost, convenience, as well as safety, in that riders pay for most trips using their credit card details which are linked to the mobile e-hailing application which the e-hailing provider administers, paying drivers a percentage of every sale, with the provider also charging a portion of a trip as administration costs (Jalloh, 2014; Korol, 2016).

Joia and Altieri (2017) believe that factors such as trust, compatibility, relative advantage, as well perceived usefulness are antecedents to rider satisfaction with the e-hailing mobile application

platform, with satisfaction and subjective norms being the antecedent of intention to use e-hailing mobile applications. Antecedents such as enjoyment, effort expectancy, and trust positively influence the intention to you use e-hailing mobile applications (Razi et al., 2019). Ubaidillah et al. (2019) mention that the intention to use e-hailing services is influenced by factors such as perceived advantages, price, accessibility, and convenience. Other factors such as perceived use of use and usefulness also show a significant relationship with intention to use e-hailing services (Suhud et al., 2019). Giddy (2019) asserts that continued usage of e-hailing service applications is significantly influenced by the perceived mobility and security that come with using such services.

2.6.7.3 Mobile retail store apps

McLean et al. (2020) note that the pressure for traditional retailers is mounting, since they need to adopt or incorporate mobile commerce into their distribution channels due to increased competition, and traditional retails are left with no choice but to incorporate m-commerce into their strategies to gain competitive advantage. Services and products that are paid for using the mobile phone have been mostly adopted by quick-service businesses, such as transportation, fast food delivery, online retailers, though less so by traditional in-store retailers who are still transitioning into adopting this new phenomenon (Ghazali et al., 2018; He et al., 2020).

Digital transactional channels such as electronic commerce have also been widely adopted by retail businesses. Online retailers can be divided into two main categories: Firstly, pure play where the organisation trades online only (the content and the site's design also should reflect this), and secondly, multi-channel retailers that sell their products both offline and online. Unlike e-commerce, mobile commerce is for on-the-move devices, which in turn change the retailers' interaction modalities, presentation, and processes. These retailers use their online and mobile presence to sell via the internet or to act as brand development, lead generators, or as customer service platforms (Zheng et al., 2019; Kühn & Petzer, 2018; Li et al, 2020; Thusi & Maduku, 2020).

The growing phenomenon has also influenced a change in consumer behaviour, which results in the challenge for traditional retailers to strategise and ascertain how to incorporate such technologies into their existing channels (Blázquez, 2014; Wang et al., 2016; Davis-Sramek et al, 2020). Mobile retail consumers use mobile devices for various activities related to shopping in the mobile retailing environment. Activities include creating shopping lists, searching products and prices, sending queries to retailers, comparison of different goods or services, purchasing of goods and services, and post-purchase activities (Reynolds-McIlnay et al., 2019).

Pipitwanichakarn and Wongtada (2019) and Tarhini et al. (2019) believe that the increased use or adoption of m-commerce within previously traditional in-store retail environment has been influenced by the growing usage of self-service technologies, which allow customers to be in full

control of their shopping experience, by engaging with information, seeking prices, and purchasing digitally. Wulfert (2019) states that in order for retailers to increase their service quality, they need to provide customers with a mobile companion application that consists of multiple features that will allow customer engagement. Factors such as convenience and trust show a significant positive relationship on retailer mobile app adoption (Arumugam & Wing, 2020). Sun and Chi (2019) assert that the intention to use fashion mobile commerce apps is affected significantly by antecedents such as usefulness of the app, social norms, and enjoyment. Carstens et al. (2019) state that shoppers who are more familiar with using a mobile application from a retailer have a higher level of trust than those who are less familiar.

2.6.7.4 Mobile fast-food and delivery apps

A mobile food delivery system is divided into three parts in relation to roles: the background management platform, the website foreground public pages, and the mobile application for the user (Ray et al., 2019; Gunden et al., 2020). The Android and iOS applications are based on Android and iOS frameworks. The order system consists of two parts, namely a responsive website, and a mobile application (Yang, 2014; Ye, 2016). Both the website and mobile application functionalities include viewing dishes, adding dishes to shopping carts, placing orders and writing feedback for the restaurants (Ray et al., 2019; Gunden et al., 2020).

Cho et al. (2019) are of the view that the most essential quality attributes for food delivery mobiles apps are trust, mobile app design, product range, and convenience comes with using the mobile app. Yeo et al. (2017) found that post-usage usefulness, convenience, price saving, hedonic motivation, time-saving, customer attitude, past experience show a positive relationship with behavioural intention towards online food delivery service. Correa et al. (2019) believe that online food delivery services help in alleviating customers' burdens of travelling and thereby providing convenience. They conducted a study that evaluated the impact of road traffic conditions, via the Google Maps application-programming interface, on key performance indicators of online food delivery services. Their results showed that road traffic conditions did not have an effect on revenue and food delivery time duration; the only associations were found between early food deliveries and customer comments. The reputation of a mobile food delivery service provider is influenced by various factors such as the perception of the brand and those associated with the brand, the quality of the mobile app, product range, quality of delivered food parcel, taste of the food, and the delivery price (Dospinescu et al., 2020).

From their study, Benhardy and Ronadi (2020) ascertain that consumers are influenced by factors such as trust and e-service quality when selecting a mobile food delivery app to use. Consumers also prefer to use first-party mobile delivery apps rather than third-party mobile delivery apps.

When comparing mobile app adoption differences between people who are married and those who are unmarried, those who are married tend to be more reluctant to follow through on their desire to engage in mobile delivery apps than those who are single (Roh & Park, 2019). A study by Lee et al. (2019) investigated the determinants of the continuous use intention of food delivery mobile apps. They affirm that factors such as habit of using the mobile had a noteworthy influence on continuous use intention, performance expectations, and social influence. Elvandari et al. (2018) found that factors such as politeness and friendliness of delivery staff, order conformity, cleanliness of food container, condition of the received ordered food, as well as the affordability of delivery costs influenced customer behaviour with regard to food delivery mobile app. Technical preferred requirements such as skills training for delivery staff, and constant evaluation of service staff' performance are significant determinants of perceived effective delivery. Ray et al. (2019) found that there are eight main drivers that contribute towards the use of food delivery mobile apps, including factors such as convenience, customer experience, societal pressure, delivery experience, quality control, search of restaurants, listing, and ease of use.

2.6.7.5 Online retail stores

In the context of online retailers, selling tangible products additional information and content has been used recently to provide for customers on an online retailer's website in order to aid their decision-making by recommending how to use or combine a set of products with the one bought (Lee & Lee, 2019). Likewise, the flexibility of different delivery options and affordable shipping charges are also essential. Online store websites are primarily visual digital platforms in which items are visually presented, explained, and promoted entirely through information and visual merchandising (Wang et al., 2011; Blut et al., 2015).

Ganguly et al. (2010), Luo et al. (2012) and Hasan (2016) indicate that the main design parameters for an online retail store are navigation design, visual design, and information design. Online retail aesthetics can create a positive attitude towards the website of an online retail store, which encourages the intention to repurchase, and positive word of mouth (Fortin et al., 2011). Lee and Lee (2019) also state that aesthetics has a significant and direct effect on online fashion malls. Noh et al. (2013) and Loureiro and Breazeale (2016) posit that the features on an online retailer's website could affect customers' buying behaviour. A research study by Kaushik et al. (2020) examined the most preferred features of an online retail store and showed that the web store image was most preferred by customers, followed by factors such as online shop recognition, price and reputation of stores.

Data analysis of an online retailer's mobile commerce channel transactional data shows that mobile application adopters buy more frequently and show a higher spending pattern then non-adopters (Liu et al., 2019). A study by McLean et al. (2020) asserts that after customers have initially tried or used mobile shopping apps, their purchase frequency using the app, and their attitude towards mobile shopping apps, increases gradually.

At times customers enjoy shopping when they can bargain from the engagement with online retail stores since it enhances their shopping experience (O'Brien, 2010). Customers generally prefer online retailers who have various delivery options that include express delivery, normal delivery, and or location-specific delivery (Luo et al., 2012; Hasan, 2016). Prashar et al. (2019) ascertain that various factors like mobile app look and feel, effort expectance, shopper experience, satisfaction, promotions, and discounts influence impulsive buying in the context of mobile commerce applications. A mobile app for online retailers aids the shopping process because of elements such as convenience and search features that mobile shopping applications possess (Narang & Shankar, 2019a). Wagner et al. (2020) believe that online retailers can enhance the shopping experience by offering alternative electronic touchpoints such as mobile apps or click-and-collect.

As various mobile commerce business models are available and are ever growing in the marketplace (as discussed above), the present study sought to determine customer satisfaction with m-commerce.

2.7 Summary

This chapter focused on the technical and operation elements within mobile commerce applications. Within the literature the internet, which allows mobile devices to connect to various websites, was first discussed and its foundation and history was portrayed. The literature review then examined the World Wide Web, which enables web developers to create different websites and apps where customers are redirected to and allowed to browse and interact. Discussion of e-commerce also included a section on mobile commerce evolution. The assessment of mobile marketing, which is the umbrella of mobile commerce apps, was then discussed. Finally, the literature review focused on the mobile commerce industry, which included discussion of the benefits and challenges. The m-commerce section also delved into the mobile commerce industry, in which several m-commerce business models or business categories were discussed.

CHAPTER 3
GENERATION Y AND THEORETICAL FRAMEWORK

3.1 Introduction

Chapter 3 consists of four sections. The first section gives an overview of the Generation Y consumer, Generation Y period and background information, Generation Y and technology, other physiognomies of Generation Y, the South African Generation Y consumer, their disposable income, and mobile phone usage habits, as well as Generation Y usage characteristics. The second section reviews literature pertaining to the determinants influencing consumer behaviour such as internal influences, external influences, and personal characteristics. In the third section different research models pertaining to this study are elaborated; these include the fifth step in the Consumer Decision Making Model: post-purchase evaluation process and each of its affective states which result of the psychological state that is experienced by a customer; the Theory of Reasoned Action (TRA), The Theory of Planned Behaviour (TPB), The Technology Acceptance Model (TAM), the final version of Technology Acceptance Model (TAM), and the Trust Building Model. The last section presents current research on the influence and role of mobile technologies in business among consumers globally.

Codrington (2008) states that generation cohorts last about 20 years after an individual is born until the time they have their own children, from which a new generation the emerges. It is essential to understand a specific targeted generation and all other generations that make up society for aligned applications in aspects of an industry. These aspects are related to the design of business, marketing and product strategies, as well as understanding consumer behaviour in terms of purchasing and post-purchase experiences, brand switching behaviour, feature fatigue, trends and brand loyalty (Jainarain, 2012). Hawkins and Mothersbaugh (2010) and McCarthy (2016) state that the study of consumer behaviour is a discipline focusing on society, which deals with uncovering why consumers buy or do not buy products and services.

3.2 The Generation Y consumer

Generation Y consumers are a high technology engaging generation (Eastman & Liu, 2012; Valentine & Powers, 2013; Chuah et al., 2017; Sethi et al., 2018). Members of the Generation Y cohort grew up in an age of technological advancements such as mobile apps and globalisation (Parment, 2013; Bento et al., 2018). This cohort has also been considered a priority target segment for marketing (Soares et al., 2017). This consumer segment outnumbers all other age groups regarding the use of mobile minutes (voice), text messages, and data bandwidth, and is known to consist of early adopters of technology (Lenhart et al., 2010). Various researchers have

investigated Generation Y consumer shopper behaviour. Ferguson (2011) and Lazarevic (2012) state that their attitudes, behaviours, and skills are obtained through socialisation influences such as from peers, family, and the media. Generation Y consumers prove to have online impulsive buying behaviours which are influenced by social factors (Faisal et al., 2020).

Generation Y consumers are regarded as independent, are self-sufficient, and they have a high level of spending power (Eastman & Liu, 2012; Parment, 2013). Valentine and Powers (2013) affirm that most Generation Y consumers fit into three lifestyle categories namely Experiencers (action-oriented), Strivers (image-conscious), and Achievers (who value image and status). Generation Y consumers favour electronic media (television and internet) above print as their core media channels and exposure to advertising, and various social media platforms to network with others. They also rely on recommendation through word of mouth. Mafini et al. (2014) describe Generation Y consumers as fashion conscious, novelty seeking, quality conscious, habitual brand loyal, hedonistic, brand conscious, and confused by over-choice. The motivation for this study is a lack of sufficient inquiry into the Generation Y cohort's mobile business engagement behaviour.

Antecedents such as the usefulness of a mobile commerce app and the ease of use influences Generation Y consumer behavioural intention (Rehman & Shaikh, 2020). Bölen and Özen (2020) also affirm that the above antecedents do positively influence the intention to use mobile commerce services, and other antecedents such as satisfaction and the enjoyment of using mobile commerce services. Previous studies have explored numerous topics related to Generation Y online behaviour, but there is still a research gap on Generation Y mobile shopping usage behaviour and their mobile app purchase experience. Hence, this study is essential to close this academic research gap.

3.2.1 Generation Y period

Inglehart (1997) describes the Generational Cohort Theory as a way to segment the populations in advanced economies, which are named generational cohorts. "A customer segment that incorporates an individual's birth year as a factor to assume his/her value priorities established through his/her life experiences during formative years, which may persist throughout that his/her lifetime" is known as a generational cohort (Jackson et al., 2011).

Using generational cohorts to segment customers is believed to be a better means of segmenting consumers than other demographic variables such as age or gender, since generational cohort members are bound to share similar values, preferences, and experiences (Eastman & Liu, 2012; Parment, 2013). The generational cohorts have different names and are believed to share similar attitudes, belief and values. There are four most often used generational cohorts are baby

boomers, Generation X, Generation Y, and Generation Z (Inglehart, 1997; Heery & Noon, 2008; Parment, 2012; Lissitsa & Kol, 2016; Ladhari, 2019).

Within the current study, the researcher is focusing on the Generation Y cohort customer group. Researchers have defined various year spans in which each generational cohort was born. Lancaster and Stillman (2002) state that Generation Y consumers were born between 1981-1990, whereas Gurâu (2012) believes that Generation Y consumers were born between 1980-2000. Bump (2014) argues that Generation Y was born between 1982 and approximately 20 years thereafter. Other researchers believe that Generation Y consumers were born any time after 1981 (Zhang et al., 2017).

The generational cohort born after Generation Y is Generation Z and defined as those individuals born after 1995 (Williams, 2015). Thus, there is debate in terms of ambiguity of years used to differentiate generation cohorts (Zemke et al., 2000; Synodinos & Bevan-Dye, 2014). Generation Y is considered to be those who were born between 1982 and 2002 in this research study (Bump, 2014; Butcher et al., 2017; Gurău, 2012; Soares et al., 2017; Bento et al., 2018; Faisal et al., 2020).

3.2.2 Generation Y and technology

Bateman et al. (2011) believe that current interactive communication channels, which rely on the internet connectivity, have resulted in social networking sites becoming a communication phenomenon of the 21st century. Individuals belonging to the Generation Y cohort are active users of social media. The development of the first recognisable social media platform, SixDegrees.com, resulted in noteworthy growth in social media regarding incidence and popularity, which is highly driven by adoption and influence of the Generation Y cohort (Zhang et al., 2017).

Cobanoglu et al. (2015) state that mobile technological advancements play an essential part in improving Millennial's experiences within the social media space in developed countries. Generation Y consumers enjoy engaging with their peers via digital platforms globally, hence in this study social media refers to sites that host user- and consumer-based digital community activities where people create public profiles, interact with peers, and share thoughts and experiences. This cohort adopts the internet and is most likely to value the information shared on social media in that they can engage in feedback regarding products and services they use. Facebook, Twitter, and Instagram, to name a few, are some social networks that have played huge roles in the way members of this cohort work, study, travel, eat, entertain, and even make purchase decisions. Platforms such as Facebook and Twitter provide an information infrastructure, which they use to keep informed about services and products shared by other users who have had previous experiences. Generation Y consumers are bloggers who endorse products and services on various

digital platforms like Facebook or Twitter (Hoffman & Fodor, 2010; Bilgihan et al., 2013; Berezina et al., 2015).

Among 1 000 internet users surveyed in North America, most Generation Y consumers stated that they are more likely to use mobile e-hailing services such as Uber (Kats, 2017a). Kats (2017b) propose that Generation Y members do not last five hours without checking their feeds daily and time spent sleeping is not taken into consideration. Annicelli (2017) proposes that social media users between the ages of 17 and 27 regard Snapchat as the second most popular network after Facebook, and 90% female respondents and 77% of male respondents were registered users of Snapchat, compared with an average of 93% of respondents on the Facebook platform. A study in the US which examined how frequently US Snapchat users access the platform and the results, show that over 50% of 18-to-24-year-olds use it all the time/more often compared to older age groups (Kats, 2017a). Generation Y consumers depend highly on technology and social networking in most developed countries, and all consumers of all Generation cohorts embrace technology; Generation Y individuals in higher lifestyle measurement levels have grown up and spend their lives connected continuously on digital platforms (Bilgihan et al., 2014).

Bilgihan et al. (2013) notes that consumer psychologists have stated that to Generation Y consumers, technology is known as the “third hand” and the “second brain” mostly in developed economies. A study by Moore (2012) asserts that Generation Y consumers in the United State of America have higher usage of interactive media versus the older Generations X and baby boomers. Generation Y consumers use these interactive technologies for information-gathering as well as entertainment and are less likely to make impulse purchases online like the older generations. Though third-party money transfers such as PayPal are more commonly used among the older group, Generation Y consumers are much likely to use card-branded wallets such as Visa Checkout and device-specific mobile payment platforms such as Apple Pay to name one (Bilgihan et al., 2013; eMarketer, 2017).

Watson et al. (2013) ascertained that among consumers between the ages of 18-64, there is a strong correlation between the quality of mobile websites/applications and how positively or negatively consumers feel towards a brand, with the majority being from different age groups such 25-34 (20%) and 35-44 (42%). Generation Y consumers’ mobile phone usage is however not restricted to mobile shopping but to various mobile platforms such as social media, where they are most likely to experience social influences on the type of purchases they decide to make (Rogers, 1995; Lu et al., 2003; Bhatti, 2007; Wei et al., 2009). A study among Generation Y consumers by Mahapatra (2017) states that a mobile device is an effective channel for shopping, its search function, evaluation features, and post-purchase convenience. Mobile technologies play an important role in improving Generation Ys’ experience with mobile online platforms (Cobanoglu et

al., 2015). Most Millennial consumers within the US have always had a social life with mobile devices, and almost two thirds of Millennials representative of the US keep, or regularly use their mobile devices to update their digital social networking platforms (Yang & Jolly, 2008; Twenge, 2009). In South Africa, it has been established that consumers between the ages of 18-25 boast the most active smartphone and app users, and the search for preferences regarding mobile apps (Potgieter, 2015: Chalomba et al., 2019; Redda & Shezi, 2019). The abovementioned phenomena has led to this study to evaluate Generation Y consumers' post-purchase satisfaction with mobile commerce.

3.2.3 Other physiognomies of Generation Y

Generation Y consumers rely on others' recommendations as an influencing factor in their decision-making process (Bevan-Dye, 2020; Nguyen et al., 2020), and they would rather solicit opinions from others around them, and therefore base their decision on these assessments (Bevan-Dye, 2020). They have grown up with technology and the Internet; hence, they actively seek information and have the ability to distinguish between competitive thoughts. They are generally individualistic, tech savvy, more confident, ambitious, curious, independent, self-reliant, idealistic, entrepreneurial, self-reliant, innovative, and rationally open-minded in comparison to other generations before them (Madikane, 2015; Nguyen et al., 2020).

This cohort is also greatly reliant on interactive information and communication technology platforms (Bevan-Dye, 2020), not for communicating with others only, but also for their well-being by seeking out entertainment (Immordino-Yang et al., 2012). They show similar interest in interacting with brands or businesses to share their thoughts about the quality of products or services (Van den Bergh & Behrer, 2013; Al-Qudah, 2020), and express strong beliefs that businesses must give customers more ways to react and share their thoughts on digital platforms (Bevan-Dye, 2020). Generation Y cohort individuals are also socially and environmentally conscious, and are in favour of organisations or brands that practice a similar philosophy through involvement in corporate social responsibility and environmental projects (Barenblatt, 2015; Fang et al., 2020).

Strategic marketing decisions and implementation thereof can be best understood by taking a generation cohort approach. Generation cohort determined lifestyles and social values, and has more influence on buying and purchasing as more commonly understood demographic factors such as income, education, and gender (Ordun, 2015; Zwanka & Buff, 2020). Consumer groups that are within different generational cohorts and demographics are exposed to different types of activities such as social and economic opportunities as well as barriers, technology activities, social perceptions and community norms, and different life experiences and events (Hume, 2010;

McKercher et al., 2020). Ruzane (2010) concludes that the most desired expression of Millennial Y consumers in South Africa is to belong to a group and have communicating parity within that group, which is applicable across the races and characteristic of post-apartheid era South African urban adolescents. Hence, those who engage actively with online platforms through mobile technologies such as social media during decision-making, are likely to share their thoughts, whether positive or negative (Duffett, 2017; Zhang et al., 2017; Kijek et al., 2020). As the Generation Y cohort is the target study group for this research, it is essential that an in-depth analysis of the cohorts' technological and economical behaviour be portrayed.

3.2.4 South African Generation Y

Bevan-Dye et al. (2012) and Duh and Struwig (2015) believe that the profile of customers with influence within South Africa has changed due to a change in a socio-economic factor such as the post-apartheid era. These individuals have been freed of dependence on conventional media and they have a desire to make their own mark as individuals while standing out, as well to belonging to a niche. They argue that Generation Ys in South Africa, compared to previous generations, are better educated, have a higher income, are confident, optimistic, and their spending patterns are steadily growing. They also are the largest cohort in that 20-39-year-olds in South Africa and make up 35.5% of the total population of around 56.5 million (Stats SA, 2017).

A study by Bevan-Dye and Akpojivi (2016) among Generation Y consumers in South Africa investigated the use of Facebook and what type of personal information they reveal on Facebook. The study also sought to determine the relationship between their website trust, member trust, access concerns, self-disclosure, and their tendency for self-disclosure on Facebook. The results show that although Generation Y consumers in South Africa have some sort of awareness about how much access people have on their information, they continue to disclose a large amount of personal information on Facebook. Botha (2015) validated antecedents to luxury brand purchase intention among South African Generation Y consumers. The findings affirmed that each tested construct (noticeable value, status value, hedonism, materialism, the need for individuality, price quality perceptions, self-congruity, brand consciousness, and digital marketing) positively correlated with luxury brand buying intention. Word of mouth also is an influential factor when it comes to mobile app intention to use among South African generation Y consumers who participated in a study by Verkijika and De Wet (2019).

3.2.5 Generation Y and disposable income

South African youth members (15-34 years old) account for about 35.7% of the total South African population (Pillay, 2020). Approximately 7.2 million (70.3%) of the 10.3 million young persons (15-

24 years) are employed in South Africa, therefore, they have access to finances, and they are also known to influence their parents' expenditure (Stats SA, 2018). Among Generation Y members (23-38 years old) in South Africa, about a half of the population (49.5%) have employment, whereas around 23.8% are unemployed, and 26.7% are not active in the economy (Stats SA, 2020).

Statista (2020b) shows that for 2018 on average the disposable income for Generation Y consumers was $58 628 in the US. South African Generation Y cohort had a direct spend of about R120 billion per year of their own disposable income during 2018 (HDI Youth Marketeers, 2018). The average consumer personal disposable income for South Africans grew to around R3.1 million in the third quarter of 2020 from R2.6 million disposable income in the second quarter of 2020 (Tradingeconomics, 2020).

Generation Y's high percentage of the population and significant spending power (direct spending and the influence on household spending) is adequate to make them a material group for consumer studies. In this study, it motivated the researcher to formulate a holistic understanding of the cohort, in order to make meaningful conclusions and recommendations.

3.2.6 Generation Y and mobile phone usage

Generation Y consumers' mobile phone usage is not restricted to mobile shopping, but to various mobile platforms such as social media, where they are most likely to be exposed to social influences on the type of purchases they ultimately make (Rogers, 1995; Lu et al., 2003; Bhatti, 2007; Wei et al., 2009). A study among Generation Y consumers by Mahapatra (2017) provides evidence that the mobile phone is an effective channel for shopping due to search, evaluation, possession and post-purchase convenience. Mobile technologies play an essential role in enhancing Generation Y's experience with mobile online platforms (Cobanoglu et al., 2015). In 2015, South African Generation Y consumers between the ages of 18-25 boasted the most active smartphone and app users, and the search for preferences regarding mobile apps (Potgieter, 2015).

Most Generation Y consumers in the US do not remember a social life without mobile phones and nearly two-thirds of Generation Y representative of the US keep or regularly use their mobile phones to update their online social networking platforms (Yang & Jolly, 2008; Twenge, 2009). Smartphone usage is also popular among Generation Y consumers in the US, and around 94.2% of Generation Y consumers were smartphone users (Dolliver, 2019b). Gore et al. (2019) propose that there are various factors that positively influence smartphone usage while travelling, which include security, the need for virtual comfort, and anxiety. Muñoz et al. (2019) found that Generation Y respondents prefer a smartphone device above other technological devices such as

desktops, laptops, or tablet computers. They also claim to consult their smartphones around 45 times during the day and their smartphones are on the bedside table when they sleep. Generation Y consumers enjoy using their smartphones during the planning stage of their trips (Jamal & Habib, 2020).

3.2.7 Marketing to Generation Y

Strategic marketing decisions and their implementation can be best understood by taking a generational approach. Generation cohort-determined lifestyles and social values influence buying and purchasing than more commonly understood demographic factors such as income, education, and gender (Ordun, 2015). Consumer groups within different generational cohorts and demographics are exposed to different types of activities such as social and economic opportunities as well as barriers, technology activities, social perceptions and community norms, and different life experiences and events (Hume, 2010). As noted above, Generation Y consumers in South Africa want to belong and be accepted by their chosen groups which have unique characteristics (Ruzane, 2010). When marketing to Millennial consumers globally, social media platforms are crucial as marketing communication channels in that around 35% of millennials bought through social media click and buy buttons, according to a survey showing results that a third of the respondents who had not used such tools mentioned that they would consider using them in the future (Chadha, 2019).

In recent times brands have used the influencer marketing tool to reach the Generation Y target market through various campaigns (Chinkanda, 2019; Dolinschek, 2019; Flemming & Goolam, 2019; Monyai, 2019; Ndashe, 2019; Bizcommunity, 2020; Droesch, 2020; Enberg, 2020). The use of influencers in South Africa is growing following major markets such as the American and European continents. Although South Africa is a unique market compared to the major markets, influencers around the globe are categorised into similar segments such as mega influencers who have the largest followership on social media platforms, followed by macro, mid-tier, micro, and nano influencers who have the lowest followership (Dolinschek, 2019). Flemming and Goolam (2019) mention that the influencer marketing tool has come with certain major setbacks in the industry, in that some campaigns have been perceived to be non-authentic, which then results in a negative effect on consumers. Chinkanda (2019) believes that most marketing campaigns by brands have focused on an idea, product, or a service when deploying marketing campaigns rather than focusing on understanding and relaying messaging that the youth or Millennials would grasp. He further mentions that brands should be immersed in the youth culture first, and then create relevant offerings to the youth.

Social media platforms have been the driving vehicle for campaign deployment when using the influencer marketing tool (Ndashe, 2019). Monyai (2019) suggests that around 60% of consumer who participated in a study state that they learn about new products or services on Instagram. Although Facebook remains the number one choice for marketers when deploying campaigns, a social media platform called TikTok has seen fast growth globally among consumers during 2020 (Bizcommunity, 2020).

Williamson (2020a) states that a study by Morning Consult showed that Generation Y members hold the view that when companies are marketing products or services through the use of influencers they look out for elements such as the influencer being knowledgeable about the product, service, brand, or industry they are promoting for (57%); the influencer is a person they can relate to (50%); 48% of Generation Y consumers said that the influencer should display authentic enthusiasm for the product, service, brand, or industry they are promoting; 44% of the respondents also noted that the content should be enjoyable or funny; and some respondents mentioned that an influencer should be someone they aspire to be (38%). Survey results of GlobalWebIndex indicates that about one out of five Generation Y respondents from the US and UK have made a purchase inspired by the use of the influencer marketing strategy, such as the use of celebrities, popular personnel on social media, and athletes (Droesch, 2020; Enberg, 2020). Thus, the above marketing tools should be considered among the different marketing communication strategies among businesses globally.

3.2.8 Mobile app adoption rates

Mobile web usage has been overtaken by mobile app usage. The mobile app market is swamped, and mobile consumers have a wide variety of mobile apps from different mobile app stores as well as operating system platforms, which are downloaded from the internet (Taylor & Levin, 2014; Malika et al., 2017). Some statistics relating to mobile app adoption show that 25% of installed mobile apps are never used by consumers, while the use of about 26% of mobile apps are discontinued after single use. Mobile customer retention has become a concern that marketers need to prioritise since the mobile app market acquisition statistics show that 80% of all mobile apps are abandoned within 3 months, and 20% are retained and further used (Tiongson, 2015; Perro, 2018).

A report by Bizrate Insights shows that in the US, 61% of Generation Y internet users stated that they used a mobile app to buy a product or service in 2019 (Droesch, 2019b). Koch (2019a) believes that the Generation Y consumers' demand for technologically savvy offerings is fuelling the growth of digital banking apps in the US; the number of Generation Y users of digital banking apps is expected to reach 57.5 million by the end of 2020, accounting for more than 75% of the

total Generation Y population in the US. Generation Y adoption rates surpassed 90% for internet and smartphone usage, and 92% for social media app usage in Canada. Millennials are also highly reliant on the use social media apps for activities such as personal engagement and entertainment (Briggs, 2020).

The use of mobile app has increased in international markets such as India with a mobile app penetration rate of 30%, and consumers are using mobile apps mostly for shopping, social networking, banking, health, and entertainment (Okumus & Bilgihan, 2014; Elangovan & Agarwal, 2015; Bhatt, 2016; Olivier & Terblanche, 2016). A survey conducted by Marqeta in 2019 found that 27% of Generation Y consumers in the US perceive digital app services as the most critical services that banking providers are currently offering in the market. Generation Y consumers are likely to switch banking providers according to the superiority of the digital apps developed (Koch, 2019a). Newer apps such as TikTok are also recently growing by number of Generation Y users (27% of the Generation Y population mentioned that they use the app) in the US, according to research by CivicScience (Williamson, 2020b). Social apps that have been in the market for longer, such as Facebook, Twitter, and Instagram have also grown in usage by restaurants as more Generation Y consumers are frequently engaging using social media platforms. Apps such as Uber Eats, DoorDash, and SkipTheDishes have also seen an increase in usage that is fuelled by Generation Y consumers in Canada (eMarketer Editors, 2020a).

Generation Y consumers globally have the highest incidence when it comes to mobile application adoption, engagement, or continued usage; hence they are the target research group in this study.

3.3 Determinants influencing consumer behaviour

Consumers are faced with factors that influence their behaviour, and these influences are both external (culture, subculture, demographics, social status, reference groups, families, marketing activities) as well as internal factors that include exposure, attention, and interpretation (Evans et al., 2006; Evans et al., 2009; Hawkins & Mothersbaugh, 2010). These factors are elaborated further in the following sections:

3.3.1 External influences

3.3.1.1 Culture

Culture is the system of meaning that members of a specific group use to inform their lives. A society is usually homogenous in its belief, knowledge, law, art, morals, customs, and any other capabilities and habits attained by humans as members of society (Roberts-Lombard & Parumasur,

2017; Perner, 2018). Several aspects of culture require elaboration. Culture is a comprehensive concept in that it comprises nearly everything that influences thought processes and behaviours (Hawkins & Mothersbaugh, 2010). It comprises cognitive elements and beliefs such as what the society 'knows' about the physical and social worlds and the way in which society works and its religious beliefs, values and norms, as well as signs, signals and symbols (these include language and a variety of conventions in society for conveying meaning) (Roberts-Lombard & Parumasur, 2017). It is learned since one is not born with it, and it does not include inherited responses and predispositions. Human behaviour is learnt rather than innate. Therefore, culture affects a wide array of behaviours (Hawkins & Mothersbaugh, 2010; Roberts-Lombard & Parumasur, 2017; Perner, 2018). For most societies, culture imposes restrictions within which most persons think and act (Hawkins & Mothersbaugh, 2010). Consumer products are part of this system of meaning, in that the food people eat, the clothes they wear, and all different types of preferences serve as an expression of meaning to a specific culture (Roberts-Lombard & Parumasur, 2017).

Culture influences are such that individuals are usually unaware of them, but still conform. Individuals behave, think, and feel in a manner consistent with other individuals of the same culture because it seems normal to do so (Hawkins & Mothersbaugh, 2010; Perner, 2018; Schiffman & Wisenblit, 2019). For this study, it is essential to understand cultural influences since it falls under the social influence antecedent of this current study's conceptualised research model.

3.3.1.2 Subculture

Hawkins and Mothersbaugh (2010) refer to a subculture as a segment of a larger culture whose members share differentiating behavioural patterns and values. Groups within a society that possess distinct characteristics are referred to as subcultures (Perner, 2018; Schiffman & Wisenblit, 2019). These distinct groups self-select based on shared commitment to a product class, brand, or consumption activity (Roberts-Lombard & Parumasur, 2017). Figure 3.2 shows the degree to which a person behaves in a manner distinct to a subculture depending on the extent to which the individual identifies with a specific subculture. Understanding subcultural influences is important for this study since it falls under the social influence antecedent of this current study's conceptualised research model.

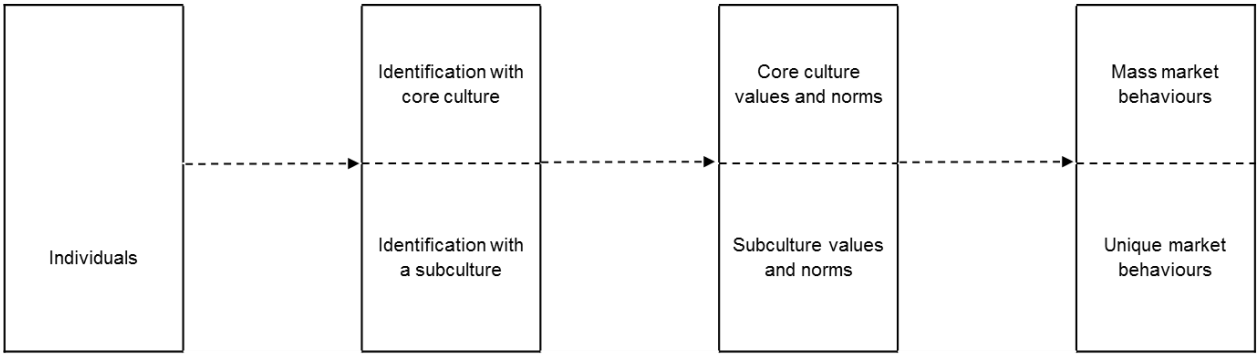

Figure 3.1: Identification with a subculture produces unique market behaviours

Source: Hawkins and Mothersbaugh (2010)

3.3.1.3 Demographics

Demographics define a population through its structure, distribution, and size. An individual's occupation, education level, income bracket, and age demographic variables are used to analyse and understand what influences decision-making. Demographics influence consumption behaviours both by affecting other attributes of individuals and directly, such as their personal values and decision styles (Hawkins & Mothersbaugh, 2010; Perner, 2018; Schiffman & Wisenblit, 2019). Demographic factors will be used to cross-analyse the results of this study to see if there are significant differences in terms of customer satisfaction.

3.3.1.4 Social status

Social classes are the segments of a society in which families and individuals with similar values, behaviour, and interests are categorised. Social classification of an individual is learned through socialisation, by social interaction and observation (Roberts-Lombard & Parumasur, 2017; Schiffman & Wisenblit, 2019). Brands of services and products are usually associated with social class segments, which affects the products, and services consumers buy. Social classes and status systems exist globally, and countries have similar or different types of social stratification in their economies (Hawkins & Mothersbaugh, 2010; Roberts-Lombard & Parumasur, 2017; Schiffman & Wisenblit, 2019). Nine variables are essential in ascertaining social class. The variables include economic factors such as wealth and income, occupation, interaction variables that include personal respect, socialisation and association, and political elements, namely class-consciousness, power, and mobility. Employment is usually the most suitable factor of social class, in that the job/s one does is often related to one's education, which affects one's status, consumption and life style, and the type of household and residential area of choice (Hawkins &

Mothersbaugh, 2010; Roberts-Lombard & Parumasur, 2017; Schiffman & Wisenblit, 2019). Because social status is essential to this study, the questionnaire used also includes employment and income factors, which are related to social status.

3.3.1.5 Reference groups

Reference groups are real or imaginary institutions, individuals or groups considered to have relevance to an individual's evaluation, aspiration, and/or behaviours (Lessig & Park, 1978; Moutinho, 1987). A person's reference group consists of all the groups that have a direct or indirect influence on the individual's attitude or behaviour (Kotler, 2003). Reference groups can be summarised as any individual or group that serve as a point of reference (or comparison) for an individual in forming either general or specific attitudes, values, and behaviour. Reference groups can be classified into different criteria, and may interact or overlap (Lin & Chen, 2009). Three types of reference groups have been identified from the consumers' point of view: peer group, contrast group and inspirational group (Cowan et al., 1997), while Blackwell et al. (2001) suggest that there are eight types of reference groups, known as primary or secondary, membership, formal or informal, dissociative, inspirational, and virtual groups. Three important dimensions are identified, namely informational influence, which is based on the need to make logical decisions; utilitarian reference group influence, which is reflected in efforts to comply with the aspirations of others; and value-expressive, which entails the need for psychological association with a person or group. Three primary types of influence affect an individual's decisions, behaviours, purchase, and lifestyle choice (Park & Lessig, 1977; Blackwell et al., 2001). In addition, a study by Lin and Chen (2009) suggests that a higher informational influence from a reference group positively moderates the influence between purchase intentions and repurchase decisions; a greater value expressive reference group influence results in an increased positive moderating impact between purchase intentions and repurchase decisions; and a higher psychological risk results in a negative moderating impact between purchase intentions and repurchase decisions. Reference groups also fall under the social influence antecedent, which are important to understand in this current study.

3.3.1.6 Family

A family is deemed an essential decision-making unit, because of the huge quantity of products and services that are part of the everyday life of households (Martínez & Polo, 1999). Members of a family group have an influence over each other's behaviour, and thus over the activities that are part of customer decision-making (Cox, 1975). Different variables are involved when determining

who makes the decisions within a family that will show how the power dynamics within the family are produced. A spouse's influence on economic choices varies from one family to another (Martínez & Polo, 1999). A husband and wife usually have interests in different types of products and services (Martínez & Polo, 1999), nonetheless, the greater the interest in a product or service from one spouse, the more influence that one spouse can exercise (Corfman & Lehmann, 1987). Lavin (1993) states that the traditional classification of wife and husband is maintained since neither of them has an interest in purchasing services or products purchased by the other unless the purchase involves limited economic outlay. Yavas et al. (1994) suggests that spouses' decision-making also depends on the culture of the society being studied. Consumer socialisation process in terms of family communication is a very important aspect (Palan 1998). Family context of interpersonal communication results in a greater impact on the attainment of knowledge, consumer skills, and attitudes, than the impact mass media advertising has (Palan, 1998). Social and concept orientation are the determinants of family communication (Chavda et al., 2005). The intention of socially oriented communication element is to produce compliance from children and to nurture agreeable and positive relationships in homes (Chavda et al., 2005). In such a communication style, children are influenced to make purchase decisions that are like their peers, and agreeable with others, thus repressing their feelings and avoiding the controversy of offending others. Concept-oriented communication, in contrast, allows children to develop their own views, and encourages children to make decisions and purchases by weighing up different options even though they might be different to others. Thus, a lower social orientation results in a higher concept-orientation by which children have more influence on their family's decision-making (Geuens et al., 2003). External influences literature is important for this study given that the study encompasses a social influence antecedent within the conceptualised research model to measure its influence on customer satisfaction with mobile commerce.

3.3.2 Internal influences

Evans et al. (2006), Evans et al. (2009) and Hawkins and Mothersbaugh (2010) suggest that internal influences result in customer perceptions of a product or service, and perception is a procedure that begins with customer exposure and attention to marketing communications, and ends with customer interpretation.

3.3.2.1 Exposure

Exposure happens when a stimulus is placed within an individual's relevant environment and comes within range of their sensory receptor nerves (Evans et al., 2006; Evans et al., 2009; Hawkins and Mothersbaugh, 2010). To be effective, marketers must make sure that consumers are exposed to their marketing activities. From a marketing point of view, exposure ensures that the marketing offering or message is in the right place, at least potentially, for the target market to have access to it. Exposure is a basic requirement if marketers want to change consumer perceptions, attitudes or behaviour. While not every consumer will be exposed to certain marketing activities, marketing practitioners must base their decision on audience reach numbers (Evans et al., 2006; Evans et al., 2009; Hawkins and Mothersbaugh, 2010). Reach is the percentage of a target audience that would be exposed at least once to an advertisement in a medium such as a newspaper or a magazine. If consumers are only exposed once to a message it is usually not enough for them to understand or accept a message, thus, messages must be repeatedly delivered during a certain time (Evans et al., 2006; Evans et al., 2009; Hawkins and Mothersbaugh, 2010). The number of times a message is placed or shown during a certain time-period is referred to as frequency (Evans et al., 2006; Evans et al., 2009; Hawkins and Mothersbaugh, 2010). Fragmentation of media poses concern about the ability of marketers to reach large a mass audience (consumers) using a mass medium such as television. Therefore, relying only on a single mass medium, marketers can still reach their target audience using an integrated marketing strategy (using multiple media).

3.3.2.2 Attention

While exposure is important, it is not enough to ensure that consumers will respond to a marketing activity such as an advertising message. Consumers often scan the media to see whether there is something interesting in media such as television or a newspaper. As such, consumers focus on what is interesting to them (Evans et al., 2006; Evans et al., 2009). Attention reflects the amount of mental energy or effort that we allocate to stimuli. Consumers normally pay selective attention to marketing stimuli and are often unaware of most of such stimuli in the environment. The main aim of marketers is to receive focal attention from consumers on their marketing activity to utilise more of consumers' cognitive processes while responding to marketing efforts. The probability is higher that consumers will pay attention to messages is if they are relevant and are of interest to them. (Evans et al., 2006; Evans et al., 2009). The number of messages that consumers are exposed to suggests that there is an advertising clutter, and a cumulative effect of clutter is that consumers

become very selective of the messages they chose to pay attention to, where in a medium such as television they apply advertisement avoidance strategies such as “zipping and zapping” (channel hopping and fast warding through advertisements) to maintain control over their psychic space (Olney et al., 1991; Cronin & Menelly, 1992; Evans et al., 2006; Evans et al., 2009).

3.3.2.3 Interpretation

Once noticed, the message or offering should be perceived and interpreted or understood in the intended way (Evans et al., 2006; Evans et al., 2009). This phase draws information from the psychology of perception (Hawkins and Mothersbaugh, 2010). Engel et al. (1999) understand perception as “the process whereby stimuli are received and interpreted by the individual and translated into a response”. Interpretation is the allocation of meaning to sensations, in that it is related to how individuals understand and encode information based on characteristics of stimuli, and the situation (Hawkins and Mothersbaugh, 2010). Consumers become aware of their environment through the five senses; through a receptor (such as visual or aural) sensations can be experienced by individuals (Evans et al., 2006; Evans et al., 2009). Table 3.1 summarises the sort of perceptions that can follow from each sense.

Table 3.1: Perceptions and the use of sense

Perceiving through	Illustration
Vision	Use of colour and pack/product/logo designs are important.
Sound	Music sound tracks in television advertisements can affect how the advertising message itself is interpreted; use of fast music in-store to speed up the momentum of shopping; and pleasant music likely to arouse positive emotions.
Touch	Consumers like to touch and feel products, which might be a challenge for online markets.
Taste	Blind tests show importance of brand image.
Smell	Aroma of bread baking in store suggest the bread is fresh.

Source: Evans et al. (2006); Evans et al (2009)

Within the conceptual model of the current research, usefulness, ease of use, perceived enjoyment, and involvement constructs are related to the literature researching internal influences on consumers, in that the antecedents somehow relate to the inner influences that happen during a consumer’s exposure, attention, and interpretation of mobile shopping app functionalities and post-usage experiences.

3.4 Consumer post-purchase behaviour

Consumer post-purchase behaviour determines whether they will buy the product/service again, or whether they will spread positive or negative word of mouth. Post-purchase evaluation and behaviour are thus key issues in marketing during the current relationship-marketing context. Within this evaluation, expected and actual quality of the product or service plays a key role in leading to a decision as to whether the product represents value for money; a product or service that falls below expected quality will create dissatisfaction (Hawkins and Mothersbaugh, 2010; Blythe, 2013). The process of post-purchase evaluation is illustrated in Figure 3.3.

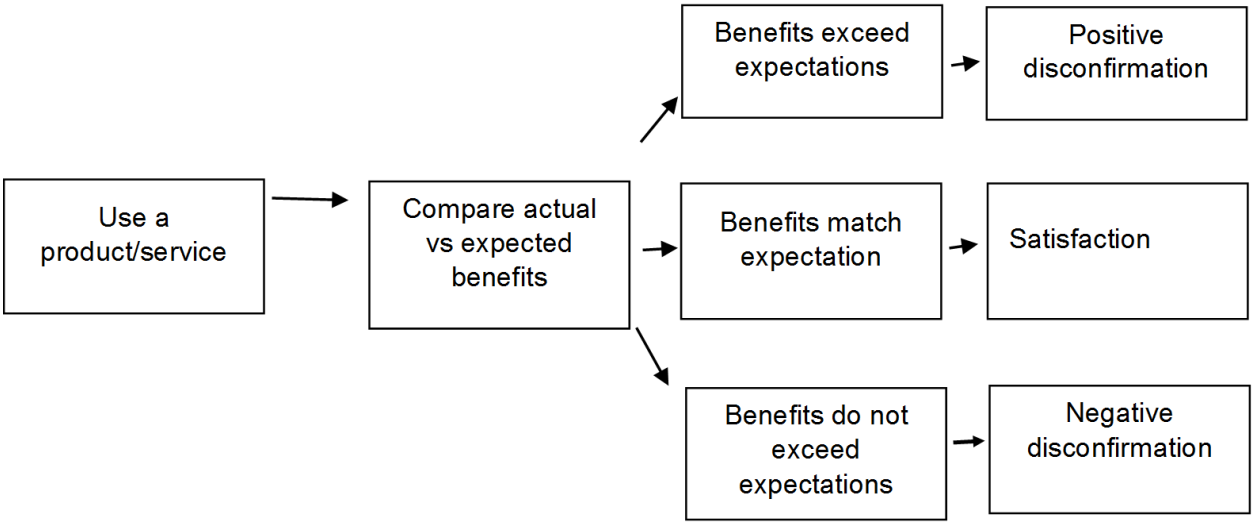

Figure 3.2: Post-purchase evaluation process

Source: Blythe (2013)

Measuring satisfaction and dissatisfaction relies on the disconfirmation paradigm, and two variables in this paradigm are pre-purchase expectations and post-purchase disconfirmation (positive or negative). Expectations are matched by either positive disconfirmation (the product/service performs better than expected) or negative disconfirmation (the product/service performs worse than expected). The greater the positive disconfirmation, the greater the satisfaction, and if the difference between the two is large enough, the consumer feels delight. Thus, managing expectations is a key factor in overall satisfaction (Churchill & Surprenant, 1982;

Blythe, 2013). There are four post-purchase affective states ("the physical or psychological condition of an individual which may lead to an interruption in planned behaviour" (Santos & Boote, 2003)), and they are as follows:

3.4.1 Customer delight

This state occurs when either performance of the product/service falls between the individual's ideal and desired level of performance or when the consumer expected to be delighted (Santos & Boote, 2003). Within this study, if a customer's experience of a specific mobile app exceeds their expectations that would result in customer delight or significant level of customer satisfaction.

3.4.2 Post-purchase dissonance

This is a state in which a customer regrets making a purchase decision, or feels that they have made the wrong purchase after seeking out more information (Jain et al., 2018; Yang et al., 2019; Lazim et al., 2020). This dissatisfaction occurs when a product or service quality falls between the minimum tolerable and the worst imaginable levels of expectation. If the consumer expected to be dissatisfied, there will be a confirmed experience of dissatisfaction or regret (Santos & Boote, 2003; Lazim et al., 2020). This would therefore lead to a negative social influence or word of mouth when recommending a product or service to others (Lamb et al., 2008; Jain et al., 2018; Yang et al., 2019).

Customers who usually focus on spreading negative word of mouth are those who are prevention-focused due to anxiety and retaliation in revealing the negative impacts (Takács et al., 2016). Ismail et al. (2019) state that certain products or services that are affected by negative perceptions can distort consumers' perceptions of other brands or products, which are in the same category. Those customers who are more focused on enhancing themselves and gaining benefits from society are bound to be motivated to share positive word of mouth via digital community platforms (An et al., 2019; Sohaib et al., 2019; Trung & Khalifa, 2019; Verkijika & De Wet, 2019).

If a conceptualised driver of satisfaction with the hypothesised model in this study shows a significant negative influence on the customer satisfaction dependent variable, then the result will be translated as customer dissatisfaction or post-purchase dissonance.

3.4.3 Customer satisfaction

Customer satisfaction occurs when a product or service quality performs between the desired and predicted level or when the consumer expects to be satisfied (Santos & Boote, 2003; Tam et al., 2020). Results of a post-purchase evaluation determines customer satisfaction, that is, whether the

customer perceives it to exceed their expectations, positive satisfaction will result, and vice versa (Yeh & Li, 2009; Almarashdeh et al., 2019). Customer satisfaction is the fulfilment of the expectations of the purchase, and perceived results of the purchase or the post-purchase relationship with the mobile commerce provider (Agrebi & Jallais, 2015; Chalomba et al., 2019). Responses based on the purchase evaluations during the purchase process can also be the determinants of customer satisfaction (Lee et al., 2015; Alalwan, 2020).

A customer's perception and experience and the way they rate their purchasing journey after a business transaction is seen as customer satisfaction, and it is an important issue within marketing knowledge and practice, in that repeat purchases result of it, as do positive referrals and customer loyalty (Mahapatra, 2017; Marinkovic & Kalinic, 2017). The quality of a service received affects customer trust as well as their satisfaction prior to purchasing (Ribbink et al., 2004; Cyr et al., 2008; Shankar & Jebarajakirthy, 2019). The level of service quality, perceived value, and trust has an influence on customer satisfaction (Deng et al., 2010; Samadara & Fanggidae, 2020). Customer satisfaction, after trust, is a key to continued m-commerce adoption (Chong, 2013; Marinković & Kalinić, 2020). Once customers are satisfied, they are most likely to have repurchase intent as well as favourable word of mouth (Wang & Liao, 2007; Kalinić et al., 2019).

For this study, overall customer satisfaction is measured to validate factors that influence the overall customer satisfaction with mobile commerce, during the post-purchase phase. Customer satisfaction in this study will be a result if consumers participating in this study rate mobile commerce apps positively on the overall customer satisfaction measure.

3.5 Consumer behaviour conceptual models

3.5.1 Theory of Reasoned Action

The TRA framework developed by Fishbein and Ajzen' (1975) has been used extensively to define behavioural intention as an individual's attitudes toward that behaviour, as illustrated in Figure 3.7. The main cause of behaviour is behavioural intent (what an individual intends to do or not to do). Behavioural intent, sequentially, is ascertained by attitude, which is an individual's assessment of the behaviour, and is determined by subjective norms (an individual's assessment of what is socially important to do based on those around them) (Ajzen & Fishbein, 1980; Fishbein, 1979). Attitudes are said to be affective and are based upon a set of beliefs regarding the object of behaviour (e.g. mobile shopping is convenient) (Fishbien & Ajzen, 1975). Attitudes are ascertained by an individual's belief about the outcomes of performing the behaviour (behavioural beliefs),

versus the evaluation of these outcomes. (Fishbein & Cappella, 2006). The second factor is an individual's subjective norms of what they perceive as important according to their immediate society's attitude towards a certain behaviour (e.g. "My friends are using mobile apps to shop and it is also high status to engage in mobile shopping").

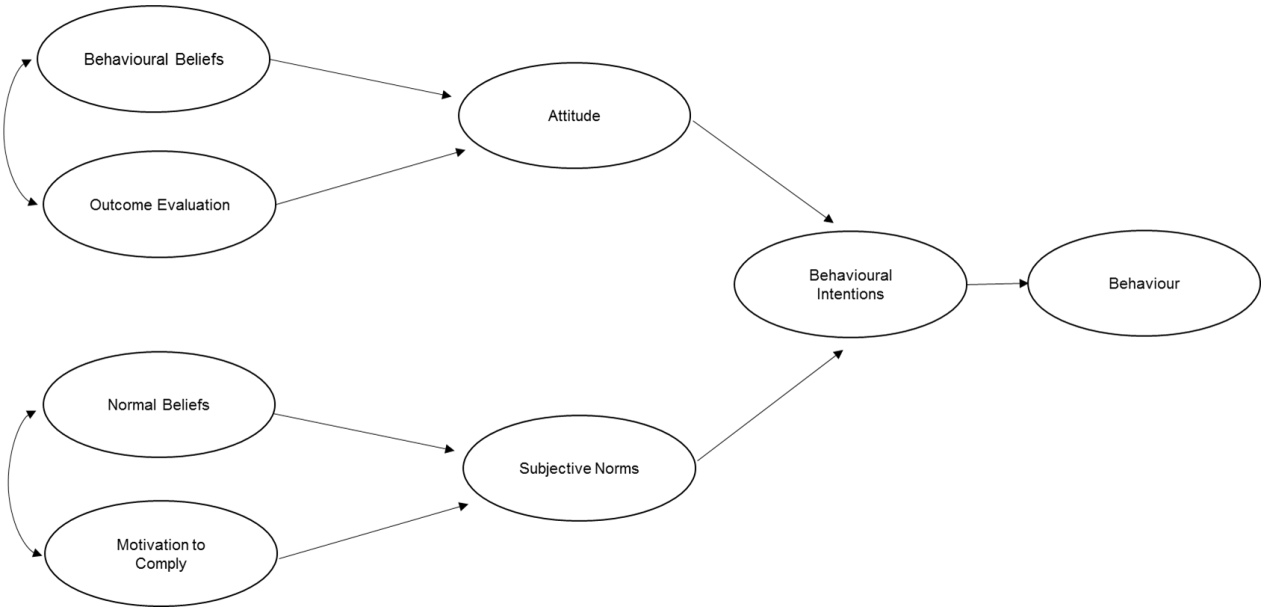

Figure 3.3: The Theory of Reasonable Action

Source: Fishbein and Ajzen (1975)

3.5.2 The Theory of Planned Behaviour

The TPB was developed by Ajzen (1991) and is about a singular factor, which determines behavioural intention of an individual's attitudes toward that behaviour. Figure 3.8 illustrates the theory in the form of a structural diagram. The first two factors in the theoretical model are the same as the TRA theory (Fishbein & Ajzen, 1975). Perceived control behaviour construct (the third factor) is the control, which consumers perceive that may limit their behaviour (e.g. "Do I qualify for credit payment, what are the requirements?"). Although some behaviours may meet such a requirement, the performance mostly depends at least to some degree on such non-motivational factors such as availability of essential opportunities and resources (for example, money, time, skills, and cooperation of immediate society) (Ajzen, 1991). Taylor and Todd (1995) developed the Decomposed Theory of Planned Behaviour theory, which consists of three key factors influencing

behaviour intention and actual behaviour adoption, and these are subjective norms, perceived behaviour control, and attitude.

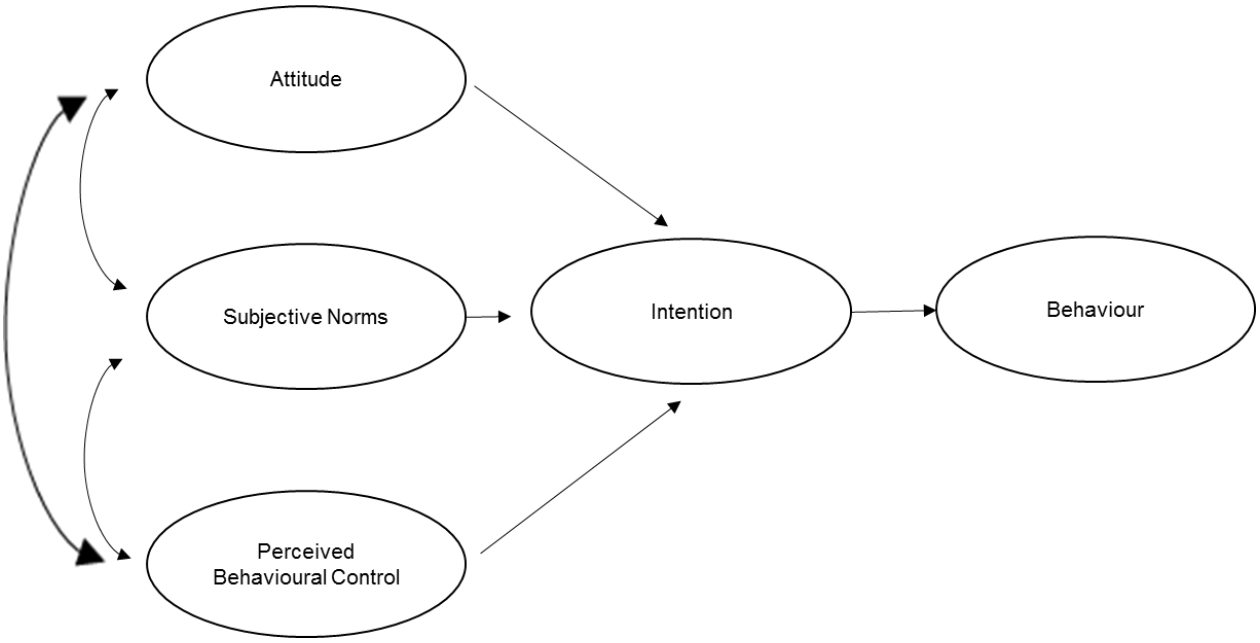

Figure 3.4: The Theory of Planned Behaviour

Source: Ajzen (1991)

3.5.3 The Technology Acceptance Model

The objective of the TAM model is to explain the determining factors of computer acceptance and the users' behaviour across a variety of end-user computer technologies and consumer populations (Davis, 1989). The TAM model includes two particular beliefs; perceived usefulness, termed as the prospective user's subjective possibility that the use of a certain technological system (e.g. mobile shopping application system) will improve their action, and perceived ease of use which refers to the level to which a prospective user expects a certain technological system to be easy to use and effortless (Davis et al., 1989). In Figure 3.5 below, TAM is illustrated to explain computer usage behaviour.

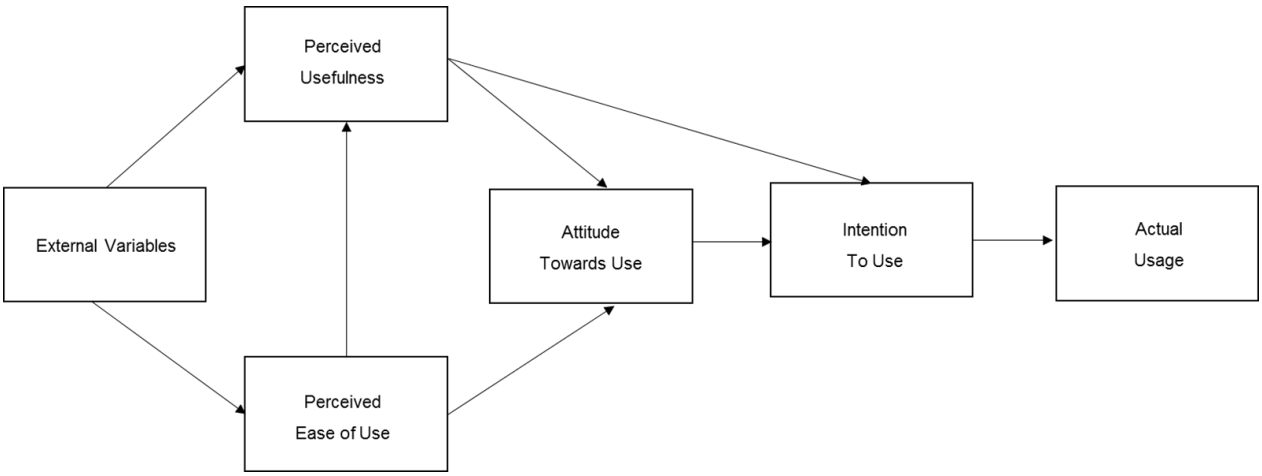

Figure 3.5: The Technology Acceptance Model

Source: Davis et al. (1989)

3.5.4 Revised Technology Acceptance Model

Venkatesh and Davis (1996) developed a revised TAM as shown in Figure 7. They found that both perceived ease of use and perceived usefulness were found to have a direct influence on behaviour intention, consequently removing the need to have the attitude construct within the TAM model.

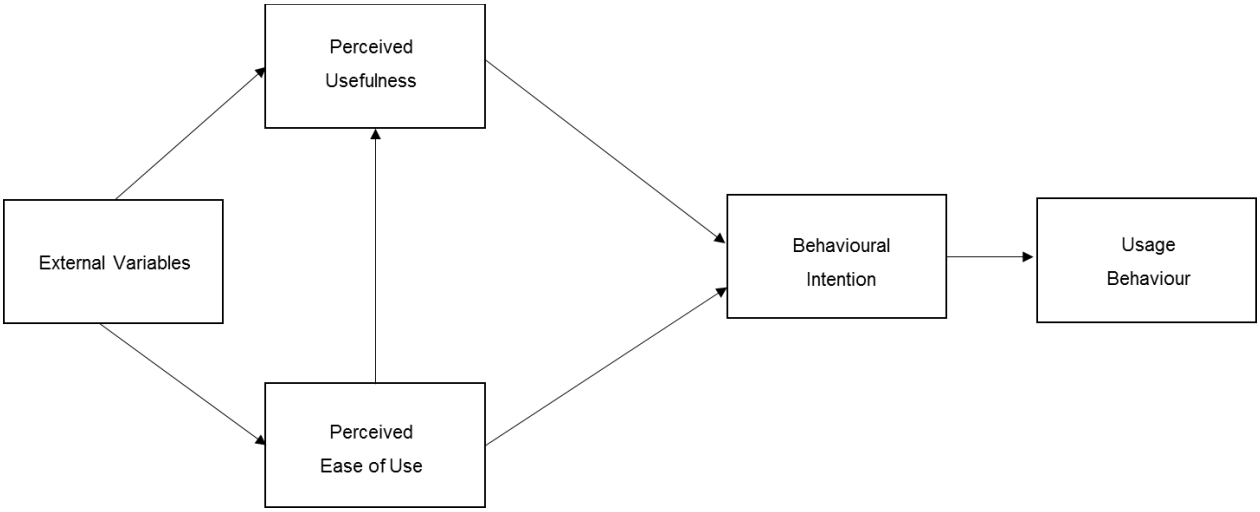

Figure 3.6: Revised Technology Acceptance Model

Source: Venkatesh and Davis (1996)

3.5.5 Trust building model

The trust building theoretical model (Figure 3.7) suggests that two sets of constructs, namely perceived site quality and perceived reputation influence the trusting beliefs of a user (having perceptions of the characteristics of a specific online business platform) and having trusting intentions towards online business platforms (McKnight et al., 2002). Trusting beliefs and trusting intention jointly constitute the theories of Rousseau et al. (1998) and McKnight et al. (1998) on trust. Trusting intention, trusting beliefs, as well as perceived web risk influence consumer intentions to engage in three specific behaviours, namely to share information with the online business entity, to follow online business entity's advice, and to purchase from the online platform. Relationships are also postulated between willingness to depend and trusting beliefs as illustrated below in Figure 3.7 (McKnight et al., 2002).

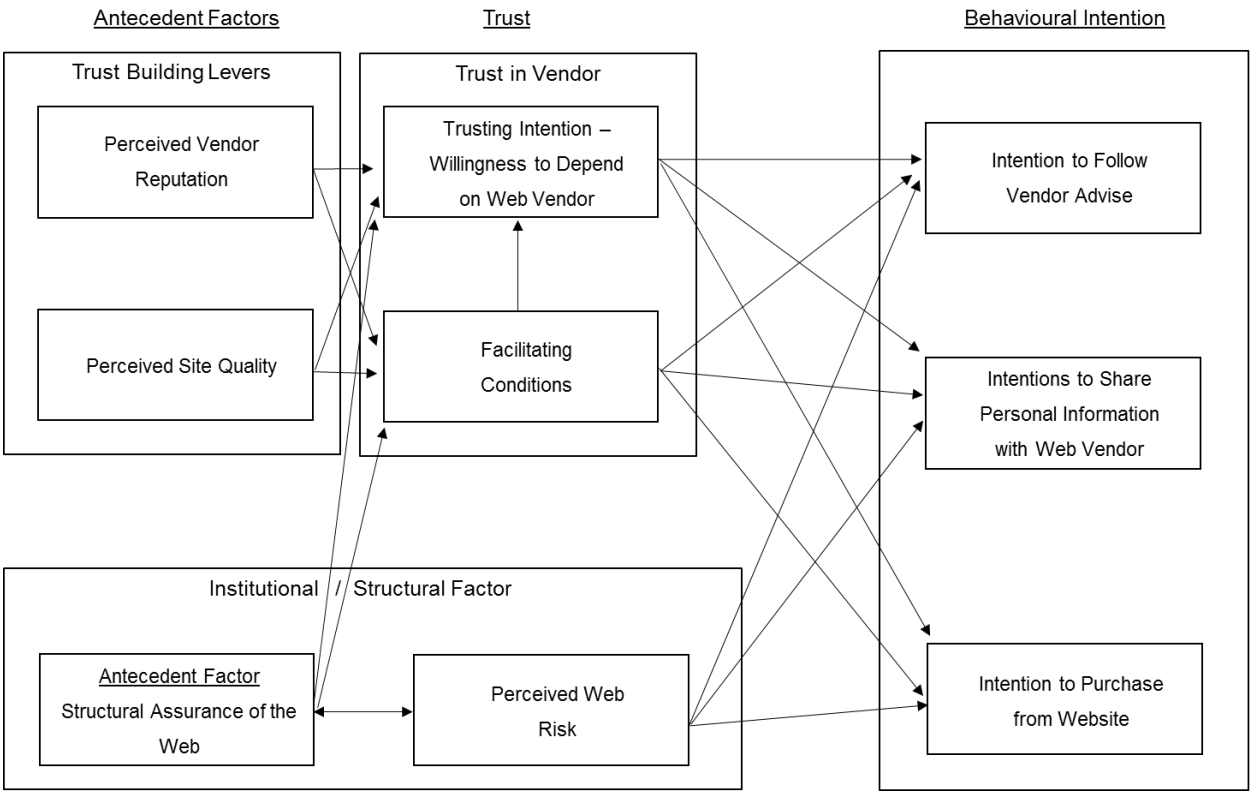

Figure 3.7: Trust building model

Source: McKnight et al. (2002)

3.5.6 Conceptual model explanation

The conceptual model for this study has been adapted from the above research frameworks. The social influence construct aligns with the Theory of Reasoned Action model within the conceptualised model for this study and normative social influence is said to lead to pressure on an individual to comply with a group's social norms (Aronson et al., 2005). Social influence is known to have a high persuasive influence on individuals. An individual will intend to behave in a certain way if they perceive that important people think they should do so. Important people could include a spouse, family, close friends, among others (Fishbein & Yzer, 2003).

The Theory of Planned Behaviour (TPB) model has been adapted within the context of this study in that mobile shopping consumers would have had to go through these psychological theoretical steps prior to adopting or engaging in mobile shopping apps for the first time, or for repeat purchase purposes (Taylor & Todd, 1995).

This study adopted constructs from the Technology Acceptance Model (TAM) such as perceived usefulness and perceived ease of use, and these have been hypothesised as drivers of customer satisfaction with mobile commerce. External variables that also contribute towards acceptance of technological advancements were also included in this study, which include perceived enjoyment and perceived mobility constructs that were found to predict users' intentions of adopting mobile systems (Huang et al., 2007). Customer involvement is another external variable adopted from the acceptance model, and has been validated as one of the strongest antecedents of the intention to use m-commerce (Liébana-Cabanillas et al., 2017). Lastly, the consumer innovativeness antecedent used in this study's conceptual model is also a key antecedent to improve digital banking adoption directly (Aldás-Manzano et al., 2009).

The Revised Technology Acceptance Model (TAM) is also related to this study in that it incorporates perceived usefulness and perceived ease of use constructs as antecedents of consumer behaviour within the technological context.

Lastly, the Trust Building Model was adopted so that the trust construct can be integrated into a conceptual model, since trust was considered a driver of customer satisfaction with mobile commerce (Ibrahim & Wadlid, 2014; Shaw, 2014; Boonsiritomachai & Pitchayadejanant, 2017; Marinkovic & Kalinic, 2017; Verkijika, 2018).

The conceptual model for this study is further explained in detail in Chapter 4 where all research constructs are more fully discussed.

3.6 Current research on customer attitudes to mobile commerce technologies

In this section, the study focuses on current research related to mobile commerce consumer behaviour, since this study focuses on the satisfaction of consumers on their use of a mobile app for mobile shopping tasks. Thereby this section does not only focus on current research related to customer satisfaction with mobile commerce, but also includes research on some drivers of satisfaction such as technology acceptance, attitudes to mobile technologies, and usage characteristics (Hung et al., 2007; Zahir Irani et al., 2013; Agrebi & Jallais, 2015; Chen et al., 2015; Natarajan et al., 2018). The Technology Acceptance Model that predicts the use of information systems consists of five major constructs, such as perceived ease of use, perceived usefulness, attitude, intention, and use (Davis, 1989; Davis et al., 1989).

This section is essential for this study in that it will provide insights from numerous studies focusing on mobile commerce research. These finding will also enable the researcher to include them in the discussion of findings section so to have a comparative view during the discussion of results originating from this research.

3.6.1 Technology and mobile commerce acceptance relating to the trust construct

Various studies have included the trust construct to measure its influence on consumer attitudes to technological advancements within commerce. Al-Debei et al. (2015) examined consumer attitudes toward online shopping in Jordan. An integrated model was introduced in the paper, which included trust, perceived benefits, perceived web quality, and electronic word of mouth along with their relationships to examine their effects on consumer attitudes toward online shopping. The study used a survey as a data collection tool, and the sample consisted of 273 online shoppers in Jordan. The results suggest that attitudes toward online shopping are determined by trust and perceived benefits. Ibrahim and Wadlid (2014) investigated what the trust influencing factors of mobile app learning were among 297 university students in Malaysia. The study used a survey to collect primary research data. The results show that the main trust build factor that influenced users to trust mobile app learning were information, familiarity, interaction, third party recognition, attractive reward, feasibility, quality, goal setting, and rules. Researchers such as Mallat (2007) examined adoption of mobile payment, and found that there are several obstacles to the adoption of mobile payments. These barriers include premium pricing, complex payment procedures, perceived risks, and a lack of bank acceptance. A study by Shaw (2014) aimed to validate the mediating influence in the adoption of the mobile wallet channel. The study was a quantitative data collection method (survey), and the sample consists of 284 students from a university in Canada. The results indicated that trust positively influenced intention to use a mobile wallet. Perceived usefulness also positively influences intention to use a mobile wallet. An investigation by Arcand et al. (2017)

focused on the multidimensional concept of mobile banking service quality and the impact service quality has on the quality of the relationship (commitment, trust and satisfaction) between consumers and mobile banking brands. The study followed a quantitative data collection approach where a survey was used to collect data. The total sample size amounted to 375 mobile banking customers in Canada. The results affirmed that trust significantly and positively influenced commitment or satisfaction with mobile banking apps. Boonsiritomachai and Pitchayadejanant (2017) explored the determinants affecting the adoption of mobile banking services among Generation Y consumers in Thailand. The research used a survey as a method of data collection. The sample includes 480 university students in Canada. They confirmed that mobile banking system security concerns had a negative relationship with the willingness to adopt mobile banking services. Moodley (2011) conducted among 150 mobile users at a university and social media networks using a quantitative approach (survey). Primary objectives included to determine if mobile retailers engaged with mobile consumers using push and pull (the targeting and promotion of products based on customer geographic location) location-based services would grow trust and the intention to transact in m-commerce. The results ascertain that using push and pull location-based services increased the trust and the intention to transact in m-commerce. Salih (2017) conducted a study among 145 public sector officials in the Sudanese government who used mobile devices. The objective was to investigate the security barriers and challenges facing the adoption of mobile commerce in Sudan. The results showed that the perceived risk of transacting through mobile commerce was negatively correlated with mobile commerce adoption. Verkijika (2018) published a study with the objective to determine the key factors that influence mobile user's adoption of m-commerce apps in Cameroon. The study used a survey to collect data among 372 mobile phone users. The results show that perceived trust, perceived risk, social influence, facilitating conditions, and hedonic motivations were significant predictors of the behavioural intention to adopt m-commerce apps. These results are insightful for this study as it is essential to understand consumers' general willingness to engage in digital commerce channels.

Some authors also focused on understanding the influence trust has on satisfaction with the digital commerce industry. The main objective of a study by Eid (2011) was to ascertain the factors that influenced the extent to which consumers trust, were satisfied with, and were loyal to e-commerce. The sample for this study consisted of 235 tertiary students and other members of the public in Saudi Arabia. Data was collected using a self-administered questionnaire. The results of this research indicated that e-commerce customer loyalty in Saudi Arabia was strongly influenced by customer satisfaction, but weakly influenced by customer trust. Masrek et al. (2014) investigated the relationship between mobile banking app usage satisfaction and trust. The sample for this study included 312 mobile banking app users in Malaysia. The data collection method used for this

study was a survey. They ascertained that trust had a positive relationship with mobile banking satisfaction. Bilgihan (2016) published a research study that had the primary objective to develop and test a detailed model that explains how Generation Y develops loyalty to a booking website for a hotel in US. An online survey was distributed among Generation Y university students in the US and 242 complete responses were received. The research findings suggest that trust is the most important antecedent of e-loyalty in online shopping among Generation Y customers. The objective of a research paper by Kassim and Abdullah (2010) empirically investigated the relation between trust, satisfaction, and loyalty within e-commerce. The study used a quantitative approach using a survey to collect data among 600 shoppers in Malaysia and Qatar. It was found that trust has a significant effect on customer satisfaction. A study by Lee and Wong (2016) hypothesised that there is a positive significant relationship between trust and customer satisfaction in m-commerce. The study used a quantitative approach, using an online survey to collect data. The sample consisted of Malaysian mobile shopping users, with the sample size being 214 respondents. The study proves that there is a positive significant relationship between trust and customer satisfaction in m-commerce. A study was conducted by Marinkovic and Kalinic (2017) among 224 customers (aged between 18-45 years old) who use specific mobile network providers in Serbia. The data was collected using self-completed paper questionnaires. Their research findings suggest that trust, perceived usefulness, perceived mobility, and enjoyment are noteworthy drivers of customer satisfaction. As the main objective of this current study is customer satisfaction with digital commerce channels, it is important to understand the impact in developing markets, and Marinkovic and Kalinic (2017) research assist with the research outcomes.

3.6.2 Technology and mobile commerce acceptance relating to the social influence construct

The social influence/social norm factor is one of many customer external influencers within the customer decision-making process, hence, it is essential to measure and understand other research studies that have included the factor as part of their research models. Kulviwat et al. (2009) examined the role social influence has, and whether it has a moderating effect on consumers' intended adoption of high-tech innovations. This research was quantitative in nature and conducted among 260 university students in the US. They ascertained that adoption attitude and social influence have a positive effect on consumers' intent to adopt a technological innovation. Alalwan (2020) published a paper that identified and empirically examined the main factors predicting the e-satisfaction with mobile food ordering apps and customers' intention to use such apps again. The study utilised a survey to collect the data. The sample consisted of 337 Jordanian customers. Social influence was found to have a negative role in predicting e-satisfaction and continued intention to reuse mobile food ordering apps. Carter and Yeo (2016) used constructs

from the theory of planned behaviour and construct variables from existing literature as a basis to establish similarities and differences among undergraduate and postgraduate users of mobile apps. The study used a semi-structured questionnaire to gather the data, and included a sample size of 40 Malaysian students. The findings highlight that there are more similarities than dissimilarities in terms of perceived attitude, for instance mood, ethical guilt, addiction, and familiarity. However, the investigation also found that there were more differences in perceived subjective norms such as family, friends, classmates and teammates. A study by Lo´pez-Nicola´s et al. (2008) hypothesised that social influence results in a favourable influence on consumers' attitude towards mobile technological innovations. The sample consisted of 543 Dutch consumers and followed a quantitative data collection approach using surveys. Their study found that social factors have an influence on people's decision to adopt mobile services. Relatives and friends have a significant impact in this regard. Malhotra and Galleta (1999) conducted a study that aimed at explaining factors that drive the adoption of new information technologies. They surveyed 239 students in the US and used a quantitative data collection methodology. Their findings suggest that social influences has a positive effect in determining the usage behaviour and the acceptance of new adopters of new information technologies. Singh et al. (2020) developed a conceptual model to determine the factors influencing user's satisfaction, intention and recommendation to use mobile wallet services. The study used a quantitative approach (online survey) and had a total sample of 206 consumers in India. The study shows that pressure to use and social influence has a significant moderating effect on consumer's satisfaction and recommendation to mobile wallet services. Slade et al. (2015) applied the Unified Theory of Acceptance and Use of Technology model to their study, to explore the factors affecting non-users' intentions to adopt mobile payment services in the United Kingdom. The research used a quantitative approaching (survey instrument), among a sample size of 268 British consumers. They ascertained that variables such as social influence, performance expectancy, perceived risk, and innovativeness significantly influence intentions to adopt mobile payment services. Mobile payment services knowledge as a moderating variable shows that there is a significant difference between trust and behavioural intention in terms of those who know about mobile payment services versus those who do not know. Lu (2014) conducted a study investigating the impact of personal innovativeness in information technology and social influence on users' continuance intention toward mobile commerce. The research was done among 376 university students at a regional university in the US. A quantitative data collection methodology was followed for this research. The results show that social influence affects continuance intention. User personal innovativeness as measured by personal innovativeness in information technology and perceived usefulness, are strong determinants of user continuance intention. Ruiz-Mafe et al. (2016) investigated the role and impact of emotions and social influences on loyalty formation to online travel platforms. The data collection

methodology for this study was quantitative in nature. The study was conducted among 385 active users of online travel platforms in Spain. They suggest that subjective norms and social presence (feeling the presence of other travel community members) boost positive emotions towards online travel platforms. The objective of a study by San-Martín et al. (2016) was to ascertain the determinants of mobile shoppers' word of mouth. The study explored the issue of word of mouth about mobile shopping, including activities conducted by consumers using the internet to make a purchase. The research was conducted among 447 Spanish mobile phone buyers and followed a quantitative data collection methodology. It was found that control over the process, shopping experience, group influence, and satisfaction with mobile purchasing affected subsequent word of mouth mobile shopping recommendations. Social influence is an influential external influence factor for various attitudinal measures, and these results of various studies will assist in comparing the results with this current study.

3.6.3 Technology and mobile commerce acceptance relating to the perceived usefulness construct

Customers prior to engaging or adopting a technological commerce transaction have to understand its usefulness for their needs. Authors have conducted research studies to measure the influence perceived usefulness has among various attitudinal constructs, for example Suryo Guritno and Siringoringo (2013) who conducted a study to measure the influence of perceived ease of use and usefulness on attitudes to the usage of the online channel for purchasing airline tickets among 283 internet users in the US. The research followed a quantitative data collection approach using surveys. The results of the study show that perceived usefulness influences the attitudes to usability of airlines ticket reservation significantly more than perceived ease of use or trust. A more recent study by Li and Fang (2019) investigated the drivers of continuance intention toward mobile branded apps. The study had a sample size of 497 Chinese users of MyStarbucks. It was found that the brand attachment–satisfaction relationship for both these factors positively influenced continuance intention. Expectation confirmation also influences brand attachment and perceived usefulness. Moreover, perceived usefulness influences continuance intention directly or indirectly through customer satisfaction. Davis (1989) developed and validated new scales with regard to two hypotheses, namely that perceived usefulness and perceived ease of use were determinants of technology user acceptance. A quantitative research approach was adopted for this research and the sample consisted of 152 experienced computer users in the US. It was found that perceived usefulness had a significant correlation with usage behaviour in contrast with perceived ease of use. Elhajjar and Ouaida (2019) developed a conceptual model that explained the most essential factors influencing mobile banking adoption. The study had a sample size of 320 Lebanese banking customers, and it followed a quantitative approach. The results affirm that factors such as

usefulness, ease of use, resistance to change, perceived risk, and digital literacy are the main drivers of users' attitudes toward adoption of mobile banking, while compatibility and awareness showed no significant impact on mobile banking adoption. Dai and Palvia et al. (2009) conducted a study among 190 mobile commerce users in China and US using a quantitative data collection method and found that perceived usefulness and perceived ease of use have a significant impact on consumers' intention to use m-commerce. They confirmed that in the US factors such as innovativeness, perceived usefulness, consumer privacy, compatibility, and perceived enjoyment were highlighted as influencing intentions to use. ul Hassan et al. (2014) investigated determinants that influence the intention to use smartphone apps; these included perceived ease of use, perceived usefulness, perceived enjoyment, and social influence. The study followed a quantitative data collection approach using a survey instrument, and the sample consisted of 263 university students in Pakistan. The results of this study suggest that usage of smartphone apps is influenced by perceived ease of use, perceived usefulness, and social influence. Rezaei and Valaei (2017) interviewed consumers in Malaysia, and they hypothesised that the impact of experiential value, post-usage usefulness, and mobile app satisfaction affected consumers' repeat usage intention of mobile retail apps for shopping activities. The data collection method used for this study was via a survey measurement tool, and the sample included 467 smartphone app shoppers in Malaysia. It was found that all direct hypotheses between constructs were supported. They further suggest that experiential value partly mediates the relationship between post-usage usefulness and mobile app satisfaction. Munoz-Leiva et al. (2017) studied the beliefs and behavioural variables that influence the use of mobile banking apps. An online survey was used to collect data, and the sample consisted of 103 online banking users in Spain. Their study shows that there is a positive influence of ease of use on the usefulness of mobile banking apps. Lu et al. (2015) investigated factors that could affect mobile travel app adoption among tourists in China. The sample for this study consisted of 613 tourist smartphone user in China. A survey was used to collect the primary data. In their study, they found that perceived ease of use, perceived usefulness, and compatibility were antecedents of the intent to use mobile travel apps. The objective of Suki's (2011) research was to offer an overview of antecedents of trust and customer satisfaction with mobile commerce (m-commerce) vendors. This study followed a quantitative data collection methodology and a sample consisting of 200 respondents in Malaysia. The results confirmed that customer satisfaction with m-commerce vendors was not affected significantly by factors of the vendor's website quality: customisation and interactivity, and mobile technology quality, which encompassed perceived usefulness and perceived ease-of-use. The abovementioned studies do show that perceived usefulness is indeed an essential antecedent of attitudes to digital commerce channels, hence it was included as part of the conceptual model for this study.

3.6.4 Technology and mobile commerce acceptance relating to the perceived enjoyment construct

Enjoyment received from engaging with a digital platform is the reason many users develop positive attitudes. Several research studies have examined the influence of perceived enjoyment on digital commerce platforms. Pipitwanichakarn and Wongtada (2019) investigated the role of perceived enjoyment and trust in the Technology Acceptance Model by distinguishing distinct stages of adoption. The study collected primary data through a structured questionnaire where 415 street vendors were interviewed in Thailand. The study had two distinct street vendor groups, and the results show significant similarities and dissimilarities among the groups. It was found that one of the two distinct groups was influenced by perceived enjoyment and perceived ease in the adoption of m-commerce. Alalwan et al. (2018) conducted a study in Saudi Arabia in the hope of further understanding the adoption of mobile internet. The study used a survey to collect data. 357 completed surveys were received from respondents from major cities. It was found that the perceived enjoyment construct had a positive impact on Saudi Arabian customers' intent to adopt mobile internet. Suki and Suki (2011) examined the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention to use 3G mobile services. The sample for this study included 100 3G mobile service subscribers in Malaysia. A survey was used to collect the primary data. The results show that perceived enjoyment did not significantly influence subscribers' intention to use 3G mobile service. A study by Koenig-Lewis et al. (2015) extended the Technology Acceptance Model framework by including social influence, knowledge and perceived risk, and perceived enjoyment. The study used a survey as data collection method. The sample consisted of 316 Generation Y smartphone users between the ages of 18-34, residing in France. They tested their model among Generation Y with regard to adoption of mobile payment. They found that perceived enjoyment has no direct effect on adoption intention but a significant effect on perceived ease of use and usefulness of mobile payment technologies. Bruner and Kumar (2005) conducted a study to help understand consumer acceptance of mobile smartphone devices. The sample for this study was 789 members of a national panel in the US. The study followed a quantitative data collection method, in that an online survey was used to collect primary data. Their main finding was that the enjoyment of using a mobile smartphone device is a more powerful determinant of attitudes toward usage than the perceived usefulness of the device itself. Cheema et al. (2013) tested their adapted Technology Acceptance Model among a sample of 150 professionals and students in Pakistan, in order to find the factors that influence online shopping intentions. The research used a survey as a data collection tool. Their results show that perceived enjoyment and perceived ease of use are the main factors that influence online shopping intention. Barutçu et al. (2015) published a paper that assessed the drivers of customer

satisfaction in mobile shopping among Turkish student mobile shoppers. The study followed a quantitative approach in which a survey instrument was used to gather primary data. The sample consisted of 245 Turkish students. The study had the entertainment/enjoyment construct as one of the drivers, and found that entertainment is a significant predictor of customer satisfaction with mobile shopping apps. Ramayah and Ignatius (2005) explored the relationship between perceived usefulness, perceived enjoyment, perceived ease of use, and intention to shop online. The research used a survey to collect primary data, and a sample size of 150 staff from a higher learning institution in Malaysia. The results affirmed that perceived enjoyment and perceived ease of use were positively related to intention to shop online, while perceived usefulness did not show any significant relationship with intention to shop online. Khedhaouria et al. (2014) conducted a study that examined the influence of perceived enjoyment on the intention to continue using mobile internet services in daily. The study utilised a questionnaire for data collection, with 623 responses from current mobile internet service users in France. The researchers concluded that perceived enjoyment of mobile internet services resulted in the continuance intention to use the services on a daily basis. Praveena and Thomas (2014) published a study, of which the objective was to identify the continuance intention of using mobile apps, specifically Facebook. A survey was used to sample 197 undergraduate and postgraduate students in India. It was found that the research model explained 36% variation in the intent of continuance usage of mobile applications. The perceived enjoyment antecedent proved to be a strong determinant of attitude towards using mobiles apps. The results of various studies do show that users' attitudes are greatly influenced by enjoyment of engaging with digital commerce platforms and will assist this study to form conclusions on the influence that the perceived enjoyment antecedent has on customer attitudes.

3.6.5 Technology and mobile commerce acceptance relating to the perceived ease of use construct

Perceived ease of use is an important influencing factor when it comes to adoption and continuance intention to use digital commerce channels. Humbani's (2019) research study investigated the determinants of the acceptance and intent to continue paying through mobile apps. The sample included 416 respondents comprising South African consumers who were older than 18, owned a credit card, and had downloaded a mobile payment app during the period of the study's fieldwork. The results showed that ease of use of mobile payment technologies has a positive influence on the usefulness and satisfaction with mobile payment services. A study by McLean et al. (2018) examined customer experience in relation to retailers'' m-commerce mobile applications, with the aim of developing a Mobile Application Customer Experience Model (MACE). The study used a survey as a data collection method, and a sample size of 1024 consumers in the United Kingdom. The results indicate that perceived ease of use significantly influences customer's

satisfaction with mobile shopping apps. The findings also suggest that perceived enjoyment significantly influences customer satisfaction with mobile shopping apps. Alalwan et al. (2018) conducted a study in Saudi Arabia in the hope of further understanding the adoption of mobile internet. The study used a survey to collect data from 357 respondents resident in major cities. They affirmed that perceived usefulness positively influences customers' intent to adopt mobile internet. Experienced consumers' intentions to repeat a purchase from the previous online-based business from which they purchased depends on both trust and the two beliefs identified by the Technology Acceptance Model, perceived ease of use and perceived usefulness. Kim et al. (2009) conducted a study that investigated the effects of perceived usefulness, perceived enjoyment, perceived ease of use, and subjective norms concerning the use of smartphone users' attitudes toward mobile commerce and mobile communication. The sample consisted of 341 college students in the US. The research used a quantitative data collection approach (survey) to collect primary data. They found that effects such as perceived ease of use, usefulness, enjoyment and subjective norms of using a smartphone were the noteworthy determinants of attitudes toward m-commerce, mobile communication and mobile shopping intention. The results also showed that positive attitudes toward mobile communication influence attitudes toward m-commerce, thereby positively influencing mobile shopping intention to engage. Suki and Suki (2011) examined the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention to use 3G mobile services. The study surveyed 100 3G mobile service subscribers in Malaysia. They confirmed that perceived ease of use, perceived usefulness, and attitude are equally responsible in determining subscribers' intention to use 3G mobile service. Ozturka et al. (2016) empirically tested a research model that includes antecedents of mobile shopping loyalty to hotel mobile booking. The study surveyed 396 mobile hotel booking users in the US. Their research verified that perceived ease of use, compatibility, and convenience have a significant impact on the users' loyalty to hotel mobile booking technology. Amin et al. (2014) investigated the impact that perceived ease of use, perceived usefulness, and trust have on mobile website customer satisfaction. The target subjects of this study were mobile users in Malaysia, and the sample size was 302 respondents. The investigation followed a quantitative data collection approach (survey). It was found that there was a positive relationship between perceived ease of use, perceived usefulness, trust, and mobile website customer satisfaction. Leong et al. (2011) empirically investigated the influence that perceived ease of use and perceived usefulness had on the intention to use mobile entertainment among 423 mobile entertainment users in Malaysia. The study utilised a questionnaire to collect data. It was found that perceived ease of use, perceived usefulness, and past usage behaviour were factors that influenced Malaysian mobile entertainment adoption. Yoon (2010) investigated the antecedents of customer satisfaction with online banking in China. The study used a survey as a tool for data collection, and the sample included 224

university students in China. It was found that perceived ease of use did not have a significant influence on customer satisfaction. Elements such as the design, security, speed, relevant content, and customer support service have a significant influence on customer satisfaction. Perceived ease of use of digital commerce platforms is an essential factor when it comes to positive attitudes to the adoption, and continuance intention to engage in digital commerce platforms. This study will also measure the influence this construct has towards customer satisfaction with mobile commerce.

3.6.6 Technology and mobile commerce acceptance relating to the mobility construct

One of the main objectives for developing mobile digital commerce platforms is the convenience or mobility benefit it gives to the users since they can easily transact and engage while on the move. The main objective of a study by Marinkovic and Kalinic (2017) was to determine drivers of customer satisfaction in mobile commerce that were statistically significant. The sample size included 224 Serbian local mobile network clients. The study adopted a quantitative research approach, collecting data using a questionnaire. The study showed that perceived usefulness, trust, perceived enjoyment, and mobility were noteworthy drivers of customer satisfaction in mobile commerce. Lu et al. (2016) investigated how perceived mobility and perceived enjoyment drive user intention to continue using mobile applications. A survey was utilised to collect primary data among a voluntarily sample of 584 users of smartphone mobile apps in the US. The results showed that perceived mobility and perceived enjoyment were primary drivers of the changes in users' attitude and satisfaction toward intention to continue using mobile apps. Yen and Wu (2016) assessed antecedents that influence continued usage intention in mobile financial services. They proposed a model that included three external antecedents namely perceived mobility, perceived enjoyment, and personal habit and integrated into the Technology Acceptance Model. A survey was utilised to collect primary data for this study. The sample consisted of 386 mobile financial services users in Taiwan. It was found that perceived mobility, personal habit, perceived usefulness, and perceived ease of use positively influenced continued usage intention in mobile financial services. Schierz et al. (2010) developed and tested a conceptual model in order to uncover which factors influence the acceptance of mobile payment services. The sample for the study included 1 447 experienced mobile app users in Germany. The study collected the primary data using a survey. They affirmed that factors such as individual mobility, compatibility, and subjective norms have the most influence on the acceptance of mobile payment apps. Barutçu et al. (2015) published a paper that assessed the drivers of customer satisfaction in mobile shopping among Turkish student mobile shoppers. A survey was utilised to gather the primary data, and the sample consisted of 245 Turkish students. The study had the mobility construct as one of the drivers, and they confirmed that mobility was not a significant driver of customer satisfaction with mobile shopping apps. The main purpose of a study by Huang et al. (2007) was to propose and

verify that mobile learning acceptance can be used to clarify and predict using the Technology Acceptance Model. Perceived enjoyment and perceived mobility value were identified as two factors that accounted for individual differences in the research model. Primary data was collected using an online survey. A sample size of 313 students in two of Taiwan's universities participated in the study. Overall results of the study showed that consumers held positive attitudes to mobile learning, viewing it as an effective tool. Individual differences were found to have an impact on users' acceptance, and that two constructs, perceived enjoyment and perceived mobility, can predict users' intentions of adopting mobile learning. The aim of a study by Zmijewska et al. (2004) was to find out what drives the user acceptance of a new information technology system, particularly mobile payment systems. The study followed a qualitative data collection approach where literature research was used to analyse the findings. The result of the study show that tested constructs (perceived mobility, perceived usefulness, perceived ease of use, cost, trust, and expressiveness) influenced user acceptance of mobile payments. Nikou and Economides (2015) investigated the impact of perceived mobility, perceived usefulness, perceived ease of use, and satisfaction on students' behavioural attitudes to mobile-based assessment. The study followed a quantitative data collection approach, and surveys were used and completed by 47 secondary school students in Greece. It was found that perceived usefulness, perceived mobility, perceived ease of use, and satisfaction were significant determining factors of behavioural intention to use mobile-based assessment. The background theory of a study by Mallat et al. (2006) was drawn from acceptance of technology and innovation theories, which were combined with perceived usefulness, as well as perceived mobility constructs. The study used a survey as a data collection tool. The sample consisted of 360 outer city residents in Helsinki, Finland. The results suggest that perceived usefulness, perceived mobility, and benefits of mobile ticketing services have a significant effect on intention to use mobile ticketing services. The studies discussed above do prove that the mobility construct is indeed an essential influencing factor towards positive attitudes within mobile digital commerce channels, thus it is also important for this current study's primary research objective.

3.6.7 Technology and mobile commerce acceptance relating to the involvement construct

Several studies have examined the influence that customer level of involvement in a product or service has on customer attitudes. Liébana-Cabanillas et al. (2017) conducted a study, which aimed to determine the key factors that influence consumers' adoption of m-commerce. 224 m-commerce consumers were interviewed. The study followed a quantitative data collection approach. They found that customisation and customer involvement are the strongest antecedents of the intention to use m-commerce. A study by Morosan and DeFranco (2016) examined hotel visitors' intentions to use hotel mobile apps to access personalised services. A quantitative data

collection (structured survey) approach was followed in this study. The sample consisted of 320 hotel visitors nationally (representative) in the US. Their study verified that the main driver of intention to use mobile hotel apps was involvement, followed by perceived personalisation and app-related privacy concerns.

Levin (2014) examined how the mobile phone operating system (Apple iOS vs Android) and the level of involvement or interest in a mobile app affect consumers' probability of using mobile apps for information-sharing activities and purchasing. Data was collected using a survey for this study. The sample consisted of 345 customers of a major retailer in the US. It was found that the level of involvement or interest in a retail mobile app positively affected consumers' intention to participate in both information-sharing activities and purchasing. Suh and Yi (2006) specified and tested the moderating role that product involvement has in determining the customer satisfaction-loyalty relationship. A survey was used to collect the primary data, and the sample consisted of 1940 household goods purchasers. It was found that customer satisfaction had a greater effect on brand loyalty and brand attitudes when product involvement was low. Holmes et al. (2014) explored attitudes to the use of mobile app shopping, mobile devices usage at various stages in the decision making process, and the influence involvement has on the mobile consumer decision-making process, and mobile shopping location. The study used an online survey to collect primary data. The sample consists of 1005 consumers in the United Kingdom. It was found that when consumers utilised smartphones for shopping, they valued its accessibility and convenience. They also confirmed that the extent of use of mobile devices is higher with highly involved products in the decision-making process.

The objective of a paper by San-Martín and López-Catalán (2013) was to study the role that constructs such as trust, impulsiveness, involvement, and innovativeness might play as antecedents to customer satisfaction with mobile shopping apps. The study used a quantitative approach where data was collected using a survey instrument. The sample consisted of 447 Spanish mobile shoppers. Their study suggests that trust, innovativeness, and involvement showed a positive influence on mobile shopper satisfaction, whereas impulsiveness had a negative impact on mobile shopper satisfaction. A research study by Prayag and Ryan (2011) evaluated a theoretical model based on hypothesised relationships among various antecedents, The study considered personal involvement and customer satisfaction as antecedents of loyalty towards hotels in the island of Mauritius. The study surveyed 705 visitors from across the world staying in hotels in Mauritius. The results showed that there was no direct relationship between personal involvement and customer satisfaction among hotel visitors in Mauritius.

One of the hypotheses of a study by San-Martín et al. (2011) was to validate whether the influence of customer satisfaction on customer trust would be consistent regardless of whether a customer

had a low or a high level of involvement with online shopping. The data collection technique was quantitative at nature, using a questionnaire. The sample consisted of 457 internet users who had bought through online shopping in Spain. The findings of their study affirmed that the effect of customer satisfaction on customer trust varied according to the customer's level of involvement in online shopping. Kang et al. (2015) examined whether characteristics of retail mobile app location-based services – interactivity, compatibility, effort expectancy, and time convenience – were related to users' affective and cognitive involvement, which in turn were related to their intention to download and use retail mobile app location-based services. They also examined the moderating effect of experiential orientation on the links between consumers' affective and cognitive involvements and usage intention. Primary data was collected using an online survey, which was distributed to a sample of 853 mobile internet users in the United State America. They showed that compatibility and perceived interactivity were influential constructs that formed users' affective involvement with retail mobile apps location-based services, which in turn influenced their intention to download and use the retail apps. The link between usage intention and affective involvement was greater for mobile users with high experiential orientation compared to those with low experiential orientation. It is essential for this current study to include this construct as an antecedent of customer satisfaction with mobile commerce since customers' level of involvement in a service or a product does influence different consumer behaviours, as seen in the abovementioned results.

3.6.8 Technology and mobile commerce acceptance relating to the innovativeness construct

User innovativeness is one of the main reasons users engage digital platforms in general. Several authors have studied the influence that the users' or customers' level of perceived innovativeness has on attitudes, since they need to have some sort of understanding and fluency in using these platforms. Chauhan et al. (2019) conducted a study that sought to understand the intention to adopt internet banking. The study adopted the Technology Acceptance Model with additional constructs such as consumer innate innovativeness, domain-specific innovativeness and perceived security risk. The study used a self-administered survey to collect the primary data. The sample consists of 487 consumers in the Indore and Bhopal districts of Madhya Pradesh of India. The results show that there is a significant positive influence of ease of use, perceived usefulness, attitude, innate innovativeness and domain-specific innovativeness on consumer's adoption intention for internet banking usage. The perceived security risk has a significant negative influence on consumer's adoption intention for internet banking usage, and domain-specific innovativeness negatively influencing perceived security risk. Alalwan et al. (2018) conducted a study in Saudi Arabia in the hope of further understanding the adoption of mobile internet. The study surveyed 357 participants from major cities. The findings showed that the innovativeness construct had a

positive impact on Saudi Arabia customer intent to adopt mobile internet. Kumar and Mukherjee (2013) conducted a mobile shopping study among Montclair University students aged 18-45 years. The objective of the study was to a) assess the effect of individual traits regarding technology on perceptions of mobile shopping; b) to assess the effect of perceptions regarding mobile shopping on attitude to mobile shopping; c) to assess the effect of attitude toward mobile shopping on intention to purchase using a mobile device. The study utilised a questionnaire for data collection, and received 289 responses from undergraduate students in the US. They confirmed that mobile shopping does not necessarily lead to purchase through the mobile device. The results also indicate that personality traits with respect to technology use play a significant role in perceptions around mobile shopping. They also suggest that optimism, innovativeness and insecurity have a direct impact on perceptions and an indirect impact on attitude and purchase intention.

Aldás-Manzano et al. (2009) published a research paper in Spain, among Spanish online banking users, which aimed to analyse how consumer innovativeness can be used to influence online banking adoption positively and reduce consumer perceived risk. The study used a survey to collect primary data, and a total sample of 511 Spanish internet users was achieved. Results show that consumer innovativeness is a key construct to improve online banking adoption directly, and by the effective role that it plays in reducing consumer perceived risk of using the internet channel for financial services. Parveen and Sulaiman (2008) examined the factors that influenced the intention to use wireless internet on mobile devices among Malaysian consumers. Their research followed a quantitative data collection approach using a survey. The sample for this study consisted of 301 internet users in Malaysia. They found that factors such as technology complexity and personal innovativeness had a positive impact on intention to use the wireless internet on mobile devices. Aldás-Manzano et al. (2009) examined how user innovativeness can be used as a construct to affect internet-banking usage positively both directly and by reducing users' perceived risk. The research used a quantitative data collection method (online survey measuring tool). The sample consisted of 511 Spanish internet-banking services. It was found that consumer innovativeness was a key variable to improve internet-banking usage, both directly and by reducing users' perceived risk. Hirunyawipada and Paswan (2006) investigated consumer innovativeness from a hierarchical perspective, and examined the concurrent impacts of hierarchical perspective of consumer innovativeness, and perceived risk on adoption of a new product. The study adopted a quantitative data collection technique (self-administered questionnaire). Structural equation modelling was utilised to test the hypothesis using empirical data from 746 respondents within the context of high-tech products at a university in the US. The findings provide support for the hierarchical perspective of consumer innovativeness; domain-specific consumer innovativeness mediates the relationship between global consumer innovativeness and new product adoption.

Particularly, cognitive and domain-specific innovativeness increases chances for the actual adoption of new product innovations. The objective of a paper by Thakur and Srivastava (2015) was to develop and scientifically test a conceptual model to determine how customer innovativeness is used as a construct to stimulate online shopping adoption intention directly positively and while reducing consumers' perceived risk. The sample consists of 433 internet users in India. An online questionnaire was used to collect data among respondents. Findings of their study confirm that consumer innovativeness is a key variable to improve online shopping adoption intention, both directly and by its positive influence in reducing consumer perceived risk of using the online channel to purchase products. The studies discussed above prove that consumer innovativeness does result in different attitudinal responses; hence, it is essential within the conceptual model of this current study.

3.6.9 Technology and mobile commerce acceptance relating to the customer satisfaction construct

Several studies have studied customer satisfaction with the context of digital commerce channels such as an investigation by Marinao-Artigas and Barajas-Portas (2020) that proposed a research model to measure mobile shopper satisfaction, and the experiential dimensions that influence satisfaction. The study used a questionnaire to collect the primary data, and received full responses from 1464 Chilean and Mexican mobile shoppers. The findings show that mobile shopping can result in customer satisfaction, and is mainly driven by customer trust and reputation of the mobile commerce vendor. Kalinić et al. (2019) developed and evaluated a predictive research model for measuring customer satisfaction with m-commerce and customer willingness to recommend m-commerce services. The inquiry surveyed 402 Serbian shoppers. The results show that the most significant driver of customer satisfaction in mobile commerce is customer trust, followed by expectancy, and perceived value. Customer satisfaction and affective commitment were found to be the leading predictors of word of mouth. A study by Chung (2019) explored issues affecting customer satisfaction with mobile commerce in Taiwan. The study adopted a quantitative data collection approach, and 237 surveys completed by Taiwanese mobile shoppers were received. The findings confirmed that shoppers were expecting convenience, availability of relevant information, simplified shipment taxes, and convenient delivery services when shopping internationally using mobile commerce. Respondents were also somewhat satisfied with their overall mobile commerce experience. There were also some issues affecting customer satisfaction with mobile commerce such as non-user friendly e-platforms, disturbing advertisements, unstandardized pricing of products, and poor logistical planning.

Thakur (2019) found that the effect of customer satisfaction on continuance intention is higher among customers who are most frequent users. The study examined the moderating role of customer engagement experiences in the satisfaction–loyalty relationship with mobile shopping and travel apps. A qualitative technique explored relevant engagement experiences in this study. The sample comprised 353 complete responses among mobile shoppers and travellers in India. Kuo et al (2016) examined consumers' awareness of mobile commerce app service quality, and explored how service quality might influence customer satisfaction and loyalty within mobile commerce. The study followed a quantitative data collection approach where a survey was used to collect data among 211 mobile commerce users in Taiwan. Overall, mobile commerce usage results in customer satisfaction, and factors such as personalisation, privacy/security, tangibility, as well as reliability significantly influence customer satisfaction with mobile commerce. Customer loyalty was also significantly driven by privacy/security, reliability and personalisation. Consumers' perceived mobile commerce security results in a significant influence on consumers' intent to use, being satisfied, and remaining loyal to mobile commerce apps. A study by Xu (2013) confirmed the aforementioned finding, and the research used a quantitative data collection approach where a survey was distributed and completed by Chinese mobile commerce users. Choi et al. (2008) examined factors that influence customer satisfaction and loyalty in m-commerce. The study followed a qualitative data collection approach to collect and analyse the data. The study indicates that mobile commerce usage does lead to customer satisfaction, and factors such as transaction process and customisation are significant drivers of customer satisfaction. Lee and Wong (2016) aimed to close the gap by examining the factors that might affect mobile commerce customer loyalty in Malaysia using e-service quality research models, and using relationship quality theories within the context of m-commerce. Their study examined the relationship existence between service quality dimensions of system availability, efficiency, fulfilment and privacy, relationship quality dimensions of customer satisfaction, trust, and commitment with customer loyalty in m-commerce. Online surveys were used to for data collection in this study, and 214 responses were received back from m-commerce users in Malaysia. The results show that customer satisfaction has a more significant effect on trust than commitment. Customer trust has a greater influence on commitment than customer loyalty, while commitment is also found to have a stronger influence on customer loyalty than customer trust. Their results suggest that overall customer satisfaction enables a starting point, and it is driven by customers' willingness to have a personal relationship with the mobile commerce provider.

A study by Wijesooriya and Sritharan (2018) examined the determinants of mobile commerce users' satisfaction. Antecedents used for the research model included trust, usefulness, social influence, perceived mobility, customisation, and perceived enjoyment. The study followed a

quantitative data collection approach where a survey was used to collect the data. The sample included 250 undergraduate student users of mobile commerce from various universities in Sri Lanka. The findings suggest that overall, the use of mobile commerce results in customer satisfaction among the respondents regarding antecedents such as trust, mobility, perceived enjoyment, and customisation. Marinkovic and Kalinic (2017) assessed customer satisfaction with mobile commerce, and examined factors that influenced customer satisfaction. The sample comprised 224 Serbian local mobile network clients. The study adopted a quantitative research approach, collecting data using a questionnaire. It was found that mobile commerce usage results in customer satisfaction. Antecedents such as trust, perceived enjoyment, perceived mobility, and usefulness were concluded to be significant influencings factors on customer satisfaction in m-commerce. The abovementioned studies do show that there is a growing need to understand customer satisfaction with digital commerce channels since it results in customer loyalty, and ultimately repeat purchases. The primary objective of this current study also focuses on customer satisfaction with mobile commerce.

3.7 Independent variables: usage characteristics

This section focuses on results related to the usage characteristic factors from other studies within the context of digital commerce platforms.

3.7.1 Mobile app categories

There are various mobile app categories available for customer to use. Several authors have conducted their research focusing on some of these categories such as Thaker et al. (2018) who explored customer loyalty or continuance intention to use Islamic mobile banking services among Islamic customers in Malaysia. The primary data was collected using a self-administered survey, which was dispersed to 250 participants in the Klang Valley in Malaysia. The results show that continuance intention to use mobile banking services depended on the usability of mobile banking services, customer service, customer satisfaction, and trust of customers towards mobile banking services. Moreover, the mediating effect of mobile banking services continuance of usage is influenced significantly by trust and customer satisfaction.

Thakur (2018) conducted a study that focused on retail brands' mobile shopping applications and examined the relationship between post-adoption satisfaction, loyalty, and self-efficacy in the usage of mobile retail shopping apps. A survey was used to collect the primary data among 424 retail mobile app shoppers in India. The findings confirm that satisfaction and self-efficacy have a positive impact on mobile shopping app continuance intention. Ramadan and Aita (2018) published

a study that investigated the impact of satisfaction with mobile payment apps because of user experience, and expectations on brand loyalty and intention to use in the future. The study was a mixed data collection methodology where both qualitative and quantitative data collection techniques were used. The first phase of the study used a focus group to explore elements of the study to feed into the quantitative data collection. The second phase of the study used an online survey and data was collected among 305 mobile payment app users in across nine different Middle Eastern countries. They confirmed that satisfaction with the quality of mobile payment apps increased with use experience and enhanced users' expectations, which in turn positively affected brand loyalty and intention to purchase through the mobile apps.

A study by Thakur (2014) examined whether usability and customer service are determinant factors of satisfaction and loyalty in the mobile banking, as one of its objectives. The research adopted a quantitative data collection method, using an online questionnaire to collect data from 433 mobile banking customers in India. The research findings showed that customer satisfaction from mobile banking based on previous interactions had a positive effect on customer loyalty. Jun and Palacios (2016) affirmed that within mobile banking apps, dimensions such as accuracy, mobile convenience, diverse mobile application service features, continuous improvement, and ease of use were seen as the main sources of customer satisfaction or dissatisfaction. The study followed a qualitative data collection approach where they employed the critical incident technique to uncover the essential dimensions of mobile banking service quality as perceived by mobile banking customers in the US. An analysis of 803 incidents was used in order to produce the results.

Sampaio et al. (2017) focused on the use of mobile banking apps, and examined how perceived justice affects the relationship between the benefits offered by mobile banking and customer satisfaction with mobile banking apps. A questionnaire was utilised for data collection among 383 customers in Brazil, India, and the US. They prove that the benefits through using mobile banking apps are positively related to customer satisfaction with mobile banking apps. In a study focusing on mobile food delivery apps, Lee et al. (2017) investigated the relationships between the determinants that affect users' attitudes to mobile food delivery apps. Primary data was collected using online surveys, and 350 questions were completed among mobile delivery app users in Korea. Their study confirms that brand-generated information, user-generated information, and mobile app system quality had a significant positive effect on perceived usefulness of mobile delivery apps.

The aforementioned studies show that engagement with different mobile app categories results in varying results, hence it is essential for this study to analyse the findings by mobile app category used.

3.7.2 Access

Users use different devices to access digital commerce platforms. A paper by Soomro et al. (2019) explored the intention to use smartphone apps. The data was collected through a questionnaire, which was distributed among a sample of 280 entrepreneurs in Pakistan. The findings show a positive significant relationship between perceived ease of use, perceived enjoyment, perceived usefulness, and satisfaction with an intention to use smartphone apps. Wang's (2019) study aimed to uncover potential compatibility and causal relationships or consistency between smartphone mobile apps and travellers' perceived technological similarities and technological value, attitudes toward price change, prior experiences and usage intentions. A quantitative data collection approach was followed where an online survey was completed by 619 travellers in the US. The findings indicated that travellers' smartphone usage experiences were significantly affected by their perception of the device's technological value in terms of the need to travel, and thus resulted in positive attitudes toward the price of a new mobile app and the intention to start using it. Prior trip experience was however not confirmed to be an influential factor in acceptability of smartphones.

Rezaei and Valaei (2017) focused on uncovering the impact of post-usage usefulness, experiential value, and mobile app channel satisfaction on consumer continuance intention towards using smartphone mobile shopping apps. A survey was used to collect primary data among Malaysian mobile shopping users, and a sample size of 467 was achieved. The study found a relationship between smartphone mobile shopping app satisfaction and mobile app continuance intention. They also suggested that there was a positive relationship between mobile shopping app experiential value and mobile app satisfaction. Using the System Usability Scale model, Kortum and Sorber (2015) examined the usability of mobile apps on two kinds of mobile platforms, smartphones and tablet computers, across two operating systems, iOS and Android. A quantitative data collection was used, and the sample included 3,575 users in the US. Results indicate that majority of respondents rated apps on smartphones were to be more usable than apps on tablets. A research study by Kim (2016) investigated whether a user's perceptions of hotel tablet apps serve as determinants of users' behavioural intention towards the hotel app's usefulness, credibility, ease of use, and subjective norm. The study utilised a questionnaire for data collection, and received 751 responses from hotel customers in the US. The findings showed that three of four constructs

hypothesised as determinants positively influenced users' behavioural intention toward hotel mobile apps.

Burford and Park (2014) explored young adults' information behaviours when given unlimited access to mobile tablets. Their research used netnography as a data collection approach in which a group of 35 Australian-based iPad users' human behaviour and interaction in the online world was explored. Their study found that access to tablets resulted in significant behavioural shifts for young adults who were immersed in digital information world. A study conducted among travellers in India, had the objective to identify factors contributing to tourists' behavioural attitudes to travel mobile apps installed in their smartphones (Gupta et al., 2018). The primary data was collected using a survey, which was completed by 343 participants. The results indicated that predictors with a significant impact on smartphone mobile app usage intention included perceived trust, social influence, performance expectancy, perceived risk, price saving, and prior usage habits.

As a result, it essential for this study to gain a perspective of other studies that have considered the influence that using different devices to access digital commerce platforms has on user attitudes.

3.7.3 Length of usage

The amount of time users or usage experience that consumers have when it comes to using digital commerce platforms has an influence on various consumer attitudinal responses. Various researchers have considered the influence that usage experience of digital commerce platforms has, such as Chen (2018) who empirically explored the marketing factors driving consumers' mobile shopping based on lifestyle perspective. The research followed a quantitative data collection approach using an online survey among 168 mobile shopping app consumers in Taiwan. The results indicate that mobile app platform use habit, shopping independence preference, promotion marketing, and quality price comparison preference are associated with consumers' post-purchase satisfaction with mobile shopping apps/websites. In addition, consumers' usage and usage experience satisfaction with mobile shopping apps/websites are important factors in aiding continuous use intention.

Gong et al. (2018) explored why experienced users of smartphone mobile apps were likely to continue using them. They proposed a conceptual model to validate the key drivers of continuance intention of WeChat users in China. The study employed a quantitative data collection technique where a self-administered survey was used. A sample size of 295 valid responses was achieve. It was found that trust plays a crucial role in influencing continuance intention among experienced smartphone mobile app users. Pappas et al. (2014) aimed to ascertain the moderating effect of

experience on the relationship of antecedents with satisfaction, and the relationship of satisfaction with repurchase intention. A survey was used to collect primary data among respondents in Greece. The final sample consisted of 393 online shoppers who successfully completed the questionnaires. The findings showed that user experience had a moderating effect on the relationships between satisfaction and performance expectancy, and repurchase intention and satisfaction.

Srinivasan and Raghavender (2006) conducted a study to investigate the influence of mobile apps on three travel-related dimensions: unplanned rideshares arranged by using mobile devices, unplanned activity chaining, and mobile app shopping. A survey was used to collect the primary data among 400 mobile app users in India. Their results suggest that consumers who are technologically savvy and have owned and used apps on a smartphone for more than one year are more likely to use unplanned rideshares or e-hailing services than the less technological savvy or recent owners of smartphones.

The abovementioned studies prove that consumer length of usage duration and familiarity results in continuous use intention.

3.7.4 Mobile shopping engagement frequency

Thakur (2019)'s study examined the moderating role of customer engagement experiences in satisfaction-loyalty relationship with mobile shopping and travel apps. The study employed a qualitative technique to explore relevant engagement experiences. The analysis included 353 complete responses among mobile shoppers and travellers in India. It was found that the effect of customer satisfaction on continuance intention was higher among customers who were most frequent users. Linnhoff and Smith (2016) investigated mobile app usage and the relationship between mobile app usage and users' satisfaction in general. The research obtained data using a quantitative data collection approach with an online questionnaire among 107 college students in the US. The results suggest that there is a significant relationship between a user's level of mobile app usage and their satisfaction with life in general. Dlodlo and Mafini (2013) conducted a study among 204 Generation Y consumers. They quantitatively examined the nature of relationships that exist between technology acceptance and the frequency of m-commerce usage. The study used the m-commerce acceptance dimension to measure the correlations. They found that there were positive correlations between frequency of use and five mobile commerce acceptance dimensions.

Hew et al. (2015) adapted the Unified Theory of Acceptance and Use of Technology 2 to investigate the determinants of consumer behavioural intention towards the use of mobile apps. The research followed a quantitative data collection approach where self-administered surveys were distributed among mobile app users in Malaysia. A sample of 288 was achieved after fieldwork completion. The results confirm that most of the constructs included in the Unified Theory of Acceptance and Use of Technology 2 (effort expectancy, performance expectancy, facilitating conditions, habit, and hedonic motivation), except for social influence and price value, significantly drive behavioural intention to use mobile apps.

Habit has been shown to be the strongest influence on behavioural intention to use mobile apps. Kim et al. (2016) explored the role of mobile app usage experience as a moderator of customer satisfaction. The research used a face-to-face interviewer administered survey. The final sample included 700 smartphone users in major cities in Korea. The findings proved that the device features (design, usability, and functions) and business factors (corporate image and customer services) significantly influenced customer satisfaction with mobile apps. Usage variables such as usage length and usage experience also moderated customer satisfaction. The research question for a study by Calvo-Porral and Levy-Mangin (2016) was whether purchasing frequency influences consumer behaviour in the speciality food retailing setting. A quantitative data collection technique was used in which a structured questionnaire was dispersed among 592 retail shoppers in the US. Results indicate that customer satisfaction and loyalty to specialty food retail stores were largely influenced by consumers' frequency of purchase. The results also support the moderating role of frequency of purchase on the relationship between perceived service at the store and customer satisfaction. Engagement frequency of digital apps in general assists certain consumers when it comes to fluency of using commerce digital platforms to transact with businesses. Hence, it is important for this study to understand the influence engagement frequency has on customer satisfaction with mobile commerce.

3.7.5 Mobile shopping app spending

The amount that consumers spend on various products or services on digital commerce platforms varies, and so do consumer attitudinal responses towards those product or services. Nisar et al. (2017) aimed to determine the factors that affect customer satisfaction and its relationship with consumer spending in e-commerce. Secondary sources were used to gather information in research focusing on DataStream and Statista.com websites. The sample included the American customer satisfaction index and sales value data for the leading 115 e-commerce retailers in the US. Findings show that online customer satisfaction has an impact on consumer spending among

American e-commerce retailers. They also confirm that the relationship between online customer satisfaction and online consumer spending is positive in nature, in that higher online customer satisfaction results in more spending within e-commerce.

Kim et al. (2015) investigated if the spending power would change after using a brand's mobile app. Primary data was collected using an online survey, and the total achieved sample amounted to 273 responses from college student consumers in the US. The study showed that the use of a brand's app increased future spending. They also suggested that attractive apps could be persuasive marketing tools in that they are portable, convenient, and provide a platform for consumers to interact with the brand. Liu et al. (2019) conducted a study among Chinese consumers using an online retailers' transactional data. They explored whether consumers' app adoption encouraged additional purchases, and how this change in purchasing behaviour varied across consumers with different shares of spending power for different product categories, as well as customer loyalty. For this study, secondary data was used to conclude the findings where information of 3378 distinctive customers with 13654 orders was obtained, and the data belonged to an existing customer database from a retailer in China. The results indicate that mobile app users have higher purchase incidence, they buy more frequently, and they spend more in each basket order than non-users. They also indicate that mobile app adoption has a stronger positive effect on the basket order size for customers who have a lower share of spending power for high-price products, and for customers who are less loyal to the online retailer.

Buoye et al. (2016) explored the relevance and validity of customer satisfaction as an antecedent to share of wallet. A quantitative data collection methodology was used where a questionnaire was completed by 4 263 customers in the US. The findings showed that if customer satisfaction was measured using an absolute satisfaction rating of a brand, the effect of satisfaction on share of wallet was very weak. Nonetheless, it was also found that when adopting customer satisfaction metrics relative to competing brands, customer satisfaction was seen as a strong predictor of share of category spending behaviour. Spake et al. (2011) conducted a study to examine the antecedents of consumer e-commerce spending. The study examined consumer experience of online shopping, level of technological savvy, level of confidence that online activities are not monitored, comfort providing personal information online, and trust towards other parties obtaining credit card information when predicting the amount a consumer would spend online. A research sample of 766 students from college in the US completed surveys after being intercepted on the college

campus. The results confirm that trust and customer experience are significant predictors of the amount spent by consumers on e-commerce.

Huang et al. (2016) investigated whether the introduction of mobile shopping apps by traditional online or e-commerce vendors had led to the cannibalisation of sales from e-commerce platforms or websites. They used 2½-years of secondary transactional data from an e-commerce vendor in China. Their findings suggest that after customers adopt the mobile shopping channel, the purchases on the web-shopping channel were slightly cannibalized. However, purchases increased overall, which suggests that the positive synergy effect of the new shopping channel superseded the negative cannibalisation. Narang and Shankar (2016) conducted a study that aimed to identify and estimate whether there were differences between mobile app adopters and mobile app non-adopters in resulting shopping outcomes such as the incidence and monetary value of purchases and returns. Secondary data was used for this study from transactions-related data from a retailer in the US, and they accessed data on mobile app usage for over 32 million customers and the retailer's loyalty program members. They confirm that app adopters buy 21% more often, but spend less per purchase occasion (12%), and return products 73% more often than non-adopters in the month after adopting mobile app shopping. Wang et al. (2015) evaluated changes in customers' spending behaviour upon adopting m-shopping using secondary data among online retailers in the US. The sample consisted of 3086 m-shoppers, who accounted for 45 346 orders, and 6 172 personal computer-only shoppers, who accounted for 83 042 orders. They confirmed that as customers adopted m-shopping the number of orders placed per year increased, especially among low spending customers.

The results of these studies show that the amount spent by customers is linked to their attitudinal responses towards the vendor, and thus spending patterns within mobile commerce are essential to understand the influence they have on customer satisfaction.

3.7.6 Usage hours

Kim et al. (2019) conducted a longitudinal study that analysed and provided insights about the trends within mobile app usage behaviour. The study used a secondary dataset collected from 162 006 volunteering iPhone and iPad consumers' usage data over four years. The results indicate that mobile app usage does change significantly over time, both at overall mobile app usage level, and mobile app category level. Zhao et al. (2019) investigated mobile app users' differences in app usage with respect to time context. The study used secondary data, a large dataset consisting of mobile app usage history lists from 106 672 Android operating system users from China. The

analysis proves that there are differences among mobile app users of Mango TV (a mobile app for videos, TV shows, and cartoons) based on their age. The usage percentage of each hourly slot of users between the ages of 0 – 24 years is much higher than those who are 25 or older. Uys et al. (2012) investigated the usage frequency and intensity of mobile apps among students from a South African university. The study followed a quantitative data collection approach where a questionnaire was used to collect data, and 60 questionnaires were successfully completed by university students. Their research affirms that students spend on average five hours per day using mobile apps on their smartphones for various activities such as communicating and interacting with others, and browse online for about 16 hours per day. The objective of a study by Lavanya and Varalakshmi (2019) was to examine the time spent on mobile smartphone apps and usage patterns of mobile smartphone usage. The research used a survey to collect data among 400 college students between the ages of 16 and 25 in India. The results indicate that the majority of college students spend up to 6 hours on mobile apps per day communicating with others. A study by Ashibani and Mahmoud (2019) ascertained that mobile app users spend approximately 5 hours a day using their mobile apps via smartphones. Data was analysed using a secondary source, utilising two datasets showing mobile app usage behaviour over 90 consecutive days. Böhmer et al. (2011) studied mobile app usage of users with smartphones running on the Android operating system for 3 months. The secondary data used in the study was from the 4125 users, who used Appazaar (an app store). The majority of users were based in the US and Europe. The analysis showed that users interacted with their mobile devices for about 59.23 minutes per day on average. The study also found that the average mobile app session (from opening the app to closing the app) lasted about 1.2 minutes. When looking at mobile app categories they found that a session lasted 36.47 seconds for unknown mobile app categories, 31.91 for finance mobile apps, and 4.12 minutes for libraries and demo mobile apps. The above results prove that younger consumers are more active on mobile app platforms in general, which is why in this study it is important to cross-analyse usage behaviour together with post-purchase satisfaction since it might influence the outcome.

3.7.7 Marketing communication response

Marketing communication messages that are sent through digital commerce platforms are mainly used to drive engagement with customers with the objective of closing sales. Researchers have studied the influence that these messages have on consumer behaviour, for example Hänninen and Karjaluoto (2017) conducted research that focused on a new perspective of industrial business-to-business relationships by linking the theoretical focus areas of relationship marketing and marketing communications. The data collection was quantitative in nature in that a questionnaire was utilised. A total sample of 121 customers of manufacturing companies operating

in industries such as mineral, paper, and metal processing in Finland was achieved. The results show that the influences of perceived value on customer loyalty are twofold, direct and indirect, since marketing communications mediate the relationship between the two antecedents. On the other hand, perceived effectiveness of various marketing communication channels contributes more to customer loyalty than the perceived quality of marketing communications.

Chen et al. (2012) evaluated mobile apps as an effective mobile marketing tool for hotels, and the extent of the marketing outcomes. A qualitative data collection approach was used from data that came from several observations and reports that included ratings and varied information on the mobile apps of InterContinental, Hilton Hotels, and Marriot Hotels. The findings indicate that mobile apps can be effectively used as a marketing tool, based on bookings directly from the mobile app, and the sales. They also found that hotels using mobile apps could improve their marketing performance by using tracking and reporting tools, which use results of the mobile app activities to make better versions, ensuring differentiation, and expanding features. A study by Persaud and Azhar (2012) investigated consumers' acceptance of marketing communications through their smartphone apps. An online survey was utilised to collect primary data, and 428 completed questionnaires were received back from a snowballed group of professionals living in Canada. It was found that consumers' brand trust, value, and shopping style are essential motivations for engaging in mobile marketing communications through smartphone apps. In 2013, a study by Watson et al. (2013) among smartphone users in the UK measured consumer attitudes to mobile marketing. The results confirm that consumers had negative attitudes to mobile marketing communications. The authors also suggest that acceptance can be enhanced by permission marketing, building trust, creating a sense of being in control, and a useful and entertaining platform.

Heinonen and Strandvik (2007) examined consumer responsiveness as a function of the perceived relevance of marketing communication and the acceptance of the medium of the communication. The study used a questionnaire to collect data from 1 179 digital consumers in Finland. The study shows that compared to traditional media such as direct mail and email, responsiveness to mobile marketing was significantly lower. The results also indicate that businesses need to consider users' responsiveness in order to understand mobile marketing communication effectiveness in various channels, including traditional and new communication media. Hsu et al. (2015) proposed a conceptual model to measure customer perceptions of mobile apps used. A questionnaire was distributed to mobile app users in Taiwan and 507 responses were received. Findings suggest that expectation confirmation is positively related to perceived value and customer satisfaction.

Elements such as app rating, free alternatives to paid apps, and value-for-money were found to have a direct impact on intention to download and use paid apps.

Alatalo (2007) developed a conceptual model to investigate factors that affect consumer attitudes to mobile marketing. A quantitative data collection approach was followed in this study. The sample consisted of 4062 mobile consumers in Finland. Their results show that the context, credibility of communication and subjective norm are positively related to intention to participate in mobile marketing, while financial rewards and perceived behavioural control were not associated with intention to engage in mobile marketing. Dinner et al. (2015) examined what drove customer usage of mobile apps and whether mobile app usage influences purchases via the online and offline channels. A questionnaire was utilised for the collection of data among 1 286 customers who had downloaded a retailer's mobile app in the US. The results show that mobile app access is mainly driven by online advertising, social media communication, state-dependency, mobile app upgrades, and purchase history. The research findings discussed above show that there are various attitudinal responses when it comes to the influence of marketing communication messages sent through digital commerce platforms.

Due to the importance of marketing communications and the results of other research studies, it is important for this current study to ascertain the influence that marketing messages sent via mobile commerce apps has on customer satisfaction.

3.8 Independent variables: demographic characteristics

This section will focus on discussing various studies and their findings that are related to the influence demographic factors have on consumer behaviour within the context of digital commerce platforms.

3.8.1 Gender

Valaei et al. (2019) examined the task-technology-performance feature characteristics that are most relevant to fit, satisfaction, and continuance intention to using mobile apps in the mobile banking category. The study followed a quantitative data collection approach where a survey was used to collect the primary data. The data collection yielded 250 completed surveys among experienced Asian mobile banking app users. The results show that task and performance characteristics are much more relevant than technology characteristics when transacting via mobile banking apps, and they found that there were no significant difference across gender groups. A study by Sharma (2019), however, confirms that there are differences between male and female

respondents' perceived value of mobile app ride-sharing services. The research findings also validate that male respondents give more importance to price and functional value of mobile app ride-sharing services, whereas females are motivated more by social factors. The study followed a quantitative approach where a survey was used to collect primary data, and 325 questionnaires were successfully completed among mobile app ride-sharing service users in India.

Mouakket (2019) developed a conceptual research model that classified social, extrinsic and intrinsic gratification factors as important individual factors influencing the users' disclosure of personal information through mobile instant messaging. They also examined the influence of gender on different factors of gratification. Data was collected using a questionnaire, and 596 completed questionnaires were received back from university students who used mobile instant messaging apps in the United Arad Emirates. The results verify that entertainment and escapism (intrinsic gratifications), and social interaction (social gratification) have positive influence on self-disclosure via instant messaging mobile apps. The study also affirms that females' self-disclosure is influenced by social influence, while males are not influenced by social gratification. Low et al. (2013) investigated the relationship between customer satisfaction and price sensitivity within the retailing industry. A questionnaire was utilised for the collection of data among 248 retail customers in China. The findings indicate that gender moderated the relationship between satisfaction and price sensitivity in the context of mobile commerce.

A study by Natarajan et al. (2017) confirms that the effect of factors such as personal innovativeness on satisfaction is more prevalent for the female respondents who participated in the study. Likewise, the influence of perceived ease of use on satisfaction was mainly for the male respondents who participated in the study. Their study used a quantitative data collection technique where an online survey was emailed to e-commerce users in India, and they achieved a total sample size of 675 respondents. Ha and Im (2014) developed and examined effects of perceived characteristics of mobile coupon services and the effects of their attitude, subjective norms, and personal innovativeness on behavioural intention to use mobile coupon services. The study also investigated gender differences in the process of mobile coupon service adoption. The study followed a quantitative data collection approach where an online survey was used to collect the primary data among 657 adult consumers in the US. The findings of the study show that perceived enjoyment and compatibility are more significant determinants of attitudes to mobile coupon adoption than perceived ease of use and perceived usefulness, while innovativeness and social norms proved significant drivers of behavioural intention towards using mobile coupon services. The results also verified that there were gender differences in the perceived characteristics that influence attitude towards mobile coupon services. Female consumers perceived enjoyment and

perceived usefulness as more important than males who were more influenced by perceived ease of use.

Douglas (2019) conducted a study that examined whether differences exist in mobile app usage between male and female business travellers in South Africa. The study followed a mixed methodology where data was collected using surveys and 232 were successfully completed by business travellers in South Africa. The study also used a qualitative data collection approach where telephonic in-depth one-on-one interviews were conducted among 10 business travellers in South Africa. The results confirm that females perceive mobile aps to be more important than males across the whole travel lifecycle. Kim et al. (2016) investigated whether customer perception of hotel mobile apps serves as a determinant to behavioural intention in terms of the mobile app's credibility, ease of use, usefulness, and subjective norms. Quantitative research was used, and 751 questionnaires were completed by hotel customers in the US. Findings indicate that out of the four proposed determinants of behavioural intention, only three were supported. They also suggest that gender does not have any noteworthy role between the relationship of the determining factors and behavioural intention.

Lee and Lee (2010) investigated consumers' adoption of mobile service channel extension (internet vs mobile) and considerations of gender differences. The study followed a quantitative data collection technique where a survey was used to collect data among 492 mobile consumers in the US. The results of the study indicate that mobile services most and least used were similar between both male and female, however, male respondents showed a higher use intent of mobile services. Singh et al. (2017) affirm that demographic variables such as gender influence usage rate and customer satisfaction of mobile wallets in North India. The study initially tested a conceptual research model on customer intention and satisfaction with mobile wallets. A survey was used to collect primary data among Northern Indians, and the data collection resulted in 204 completed surveys. A research study by Leon (2018) evaluated Millennials' intention to use service mobile applications, and to assess gender as a moderating factor. The research utilised a questionnaire to collect data, and there were 677 returned responses from undergraduate students from a university in the US. The results show factors such as self-efficacy, information quality, perceived usefulness and ease of use, and user attitude influence Millennials' intention to use service mobile applications. They also suggests that gender moderated the results of this study.

The studies discussed above prove that there are gender differences when it comes to the overall results for various attitudinal measures, hence, it is important for the study to test for any significant gender differences.

3.8.2 Age

Consumer age does result in different consumer behaviour responses as discussed below. Morosan and DeFranco (2019) examined the impact of several hotel promotional factors and consumers' behavioural and demographic factors on the actual use of certain interactive information systems (hotel's mobile app, website, push notification system, smart TV in room, kiosk, and computer tablet at front desk) in hotels. An online questionnaire was distributed for this study and a total sample of 841 was achieved among hotel customers in the US. The results indicate that promotional factors had a differential effect on consumers' use of certain information systems. The findings further indicate that information acceded through mobile devices, staff direct marketing, press releases and blogs, as well customer age and duration of stay, were found to have the greatest impact on information system usage behaviour.

A study by Doub et al. (2015) identified two consumer segments (users and non-users) in food-related technology and explained difference in their demographic characteristics, food-related app use, and interest the app functionality. The study used a survey instrument as a data collection technique. The sample included 615 consumers who were mainly responsible for grocery shopping and meal planning for their households in the US. The study found that about half of the respondents engaged with food and food-related apps and the younger adults segment (ages 18–34) were more engaged with technology and food than older adults (age 55 and above). Kim and Han (2015) examined individual's self-monitoring tendency and its relationship to the mobile dependency, fashion involvement, and tendency to experiment with appearance to better understand the influences of consumer's personal traits on their mobile device usages. A survey was used to collect primary data from 373 students from a university in the US. The results suggest that using mobile communication to promote products will appeal to those with high self-monitoring tendency. Thus, young adult consumers with high levels of sensitivity regarding self-monitoring as well as high levels of ability regarding self-monitoring would be a crucial target market for any retailers and/or marketers that adopt mobile communication and services to promote their products.

Foscht et al. (2009) investigated the factors that influence customer satisfaction, loyalty, and behavioural intentions towards banking needs. The research study utilised a questionnaire to gather primary data. The sample consisted of 242 Generation Y respondents from Austria who completed the surveys. It was found that there are differences among different age groups within the Generation Y cohort regarding information sources, financial services adopted, and the likelihood of switching. They concluded that as young consumers reach certain milestones, their banking needs become more complex, therefore the determinants of customer satisfaction also change. A study by Shah (2016) with a majority of young working professionals in the age bracket

of 25 - 35 aimed to ascertain the antecedents of user engagement and flow constructs, and their interplay during online product or service usage. The data collection procedure followed was quantitative in nature, where an online survey was dispersed to mobile banking app users in South Africa. The total achieved sample amounted to 274 valid usable responses. The results show that perceived usefulness, skills, perceived control, and perceived ease of use were significant predictors of flow experience when using mobile banking apps.

The results above indicate that four antecedents (perceived usefulness, skills, perceived control, and perceived ease of use) were significant predictors of flow experience within mobile banking apps. The results above do show that there are differences in consumer behaviour based on their age, hence it is essential for this study's analysis.

3.8.3 Education level

Education level of consumers does play a role in determining different consumer behaviours, and various studies have considered the influence of this demographic characteristic on various consumer attitudes. Baruk and Iwanicka (2016) conducted a study to determine the relations between final customers' expectations of elements of product packaging and three demographic characteristics (age, gender and level of education). The data collection method was quantitative in nature, where a questionnaire was used. The sample consisted of 550 dairy product consumers in the United Kingdom. The results indicate that the demographic factors influence the structure of customer expectations of dairy product packaging, thus shaping their purchase decision. A study by Aghdaie and Faghani (2012) applied a SERVQUAL model to investigate the relation between mobile banking and satisfaction of customers. A survey was used to collect the data for this study. The sample consisted of 120 participants of which 75% were masters' students in a university in Iran. The findings indicate that the variables within the SERVQUAL model such as tangibleness, reliability, responsiveness, empathy significantly correlate with the level of satisfaction.

A study by Deshwal (2016) aimed to ascertain whether there is a difference between groups based on demographic variables for dimensions of customer experience quality. A questionnaire was used, and data was collected from a sample of 346 Indian retail store consumers. The results show that there is a significant difference among different levels of education among the consumers, with respect to customer experience quality dimensions such as outcome focus, product experience, and peace of mind. Pakdil and Aydın (2007) conducted a study focusing on measuring service quality for a Turkish airline company. A questionnaire was utilised for the collection of data. The sample consisted of 385 international airline passengers in Turkey. A number of findings show that the most important variable affecting passenger expectations and perceptions of service quality is their level of education.

Cooil et al. (2007) investigated the relationship between customer satisfaction and loyalty in the Canadian banking industry; the study also aimed to determine the moderating effects of customer income, age, expertise, education, and the relationship length. Primary data was collected using a survey, and the sample included 12 249 observations from 4 319 households in Canada. The findings show a favourable relationship between variations in satisfaction and share of wallet. The study further suggests that two variables (length of the relationship and income) negatively moderate this relationship, whereas other demographic and situational characteristic variables have no impact on the relationship. Akeriwe (2013) conducted a study that focused on university graduates only. The research aimed to uncover how mobile technologies could be utilised to implement Web 2.0 based (mobile app) service delivery to graduates from the Graduate School of the University for Development Studies (UDS) Library in Ghana. A survey was used to collect data among 119 respondents. The results show that overall, the students had good abilities to use mobile apps, which means they would be likely to access their library resources through a mobile app. Chan and Chong (2013) examined the factors that influence m-commerce usage/adoption among a sample of 407 Malaysian mobile shopping app users. A quantitative data collection method (survey) was used for this study. They confirm that level of education, perceived usefulness, perceived ease of use, and perceived enjoyment are the most important variables. Yildirim (2015) aimed to ascertain the effect of education level gender, and age on customer evaluations of the atmosphere in retail furniture stores. A self-administered survey was distributed to customers to capture the primary data. The total sample consisted of 273 customers who shopped at the furniture store in Turkey. It was found that there were significant differences in customer evaluations of store atmosphere based on customer demographic factors such as education level, age, and gender.

The above studies show that education level plays a vital role in influencing different consumer attitudinal responses; hence, it is essential for this current study's results and analysis.

3.8.4 Employment status

Employment status of consumer plays a role in their interaction with digital commerce platforms since it determines an individual's economic activities, and several research studies have considered the influence it has on overall consumer behaviour. One of the objectives of a study by Kaila (2018) was to ascertain whether there is a demographic difference regarding the highest amount spent in single transaction by an online shopper. A questionnaire was distributed and completed by 308 online shoppers in India. The study reveals a significant association between yearly expenditure and demographic factors like occupation, gender, marital status, and age. The

findings further confirm that there is a significant association between occupation and the largest single basket transactional amount spent through online shopping.

The aim of a study by Phakane (2011) was to establish which elements influenced customers' choice in deciding a bank and a non-banking channel. Both an online and paper questionnaire were used to collect data from respondents. The sample included 52 consumers who use remitting services within South Africa. The results show that consumers prefer traditional channels to remit funds for both bank and non-bank remitting services. The results also show that consumers prefer physical channel of both bank and non-bank to remit funds. The overall aim of a study by Van Rooyen (2016) was to examine the current use of mobile apps by business travellers before, during, and after their business trips, and to ascertain their needs regarding development of mobile apps in the future, while also taking into consideration their different profiles, and the different characteristics of the trips they embark on. The primary data was collected using an online questionnaire distributed to 12,965 business travellers who had booked both local and international trips with a certain travel agent in South Africa. The sample included most of the respondents (96.8%) who regarded themselves as paid employees. The results confirm that there is a slight difference in preference in for those who have lower education and find mobile apps more useful during the booking phase, whereas those who have a higher education find mobile travel apps more useful during the travelling phase.

A study by Farhana (2014) consisted of mostly unemployed mobile banking customers in Bangladesh, with a total sample size of 57 respondents. The study aimed to examine the factors influencing the adoption of mobile banking in Bangladesh. Results indicate that consumers will consider adopting mobile banking as long as it is easy to use, perceived to be useful, and if it is affordable. The most critical factor for the customer is cost; the service should be affordable. Masinge (2010) conducted a study among a majority of unemployed respondents. The research investigated the factors that influence the adoption of mobile banking. The study focused on variables such as trust, perceived risk, and perceived cost. Primary data was collected using a self-administered questionnaire, and the total achieved sample consists of 309 low-income classified respondents in South Africa. The findings show that unemployed consumers would adopt mobile banking services as long as they are perceived to be useful, easy to use, perceived to have a low risk, and also if the service providers are trusted.

The abovementioned results show varying results pertaining to the influence of a customer's employment status, and thus it is important for the results of this current study.

3.8.5 Population group

Research studies have assessed the influence that population group or ethnicity has on overall attitudinal customer responses. Sun and Chi (2019) examined the factors that influence intention to use clothing m-commerce apps. The study followed a quantitative data collection approach where a survey was used to collect the primary data among 317 clothing mobile shoppers in the US. It was found that on an overall level consumers' intention to use clothing m-commerce apps is significantly influenced by perceived usefulness, social influence, perceived ease of use, compatibility, and education level. The results also indicate that consumers' ethnicity results in a noteworthy difference when it comes to trusting clothing mobile commerce apps.

A study by Lee and Lee (2010) affirm that a users' ethnicity has a significant effect on consumers' usage of mobile and internet services, as well as intentions to use mobile services. The study also suggests that among the demographic ethnic groups, Caucasian Americans were found to be the least engaged, while African Americans were found to be the most engaged mobile service users. This study initially investigated consumers' adoption of mobile service channel extension (internet vs mobile) as well as with consideration of ethnic differences. The study followed a quantitative data collection technique where a survey was used to collect data among 492 mobile consumers in the US.

Fikry (2010) investigated the differences that exist among Malaysian teenagers' ethnicities, influential strategies and family purchase decisions of mobile devices. A questionnaire was used to collect primary data among 700 Malaysian teenage respondents from a private school. Findings of this study affirm that there is no significant differences in family purchase decisions and bargaining strategies among Malaysian teenagers. The study also found that there was a significant difference between teenagers' ethnicities when it comes to persuasion strategies to buying mobile devices. Ting et al. (2016) investigated the influence of attitude, subject norms, and perceived behavioural control towards intention to use mobile payment systems. The respondent target group for this study were Malaysian and Chinese consumers in Malaysia. The study used questionnaires to collect data, and they received 311 successfully completed questionnaires. The results show that attitude, subjective norms, and perceived behavioural control positively influence the intention to use mobile payment systems. The study further found that there were significant differences among Malay and Chinese respondents regarding intention to use mobile payment systems.

The results mentioned above indicate that there are differences on the overall results based on consumers' ethnicity, as such; ethnicity will be cross-analysed to prove its influence on overall customer satisfaction with mobile commerce.

3.9 Summary

In this chapter, the theory focused on the target response group of this study (Generation Y). Focal areas pertaining to Generation Y consumers included understanding the innovativeness and economic impact, and mobile technologies usage habits of Generation Y consumers in the global market. For section 2 of this chapter, literature was reviewed related to internal and external consumer influences on behavioural actions. The third section of the literature review focused on research models pertaining to the research constructs included in this study's conceptual research model. The final section of this chapter focused on current and past research studies, which were related to the antecedents, usage and demographics characteristics of the target group of this study.

CHAPTER 4

RESEARCH MODEL AND RESEARCH METHODOLOGY

Details pertaining to the research design and the appropriate research approach adopted to address the research hypotheses are described in this section.

4.1 Hypotheses and conceptualised model

4.1.1 Trust

Trust is an important factor in every corporate relationship (Corbitt et al., 2003). Trust in m-commerce reflects consumers' positive expectancies of m-commerce vendors. Hence, building trust with a user is essential for the enhancement of customer satisfaction (Zhou, 2011). A publication by Safa and Van Solms (2016) explains how online loyalty, trust and satisfaction form within e-ecommerce with a focus on customer intent to buy. They explain that benefits for customers and enjoyment influence satisfaction within an e-ecommerce context, for instance, when consumers engage in business activities with ease; see the benefits; enjoy using a system; and are satisfied they will repurchase. Several research findings indicate that satisfaction and trust are strongly related constructs. Deng et al. (2010) found that when customers trust an m-commerce service provider, they would expect their satisfaction to improve and thus will become loyal over time, and will recommend the services to peers through word of mouth. Jimenez et al. (2016) suggests that satisfaction and trust can increase loyalty and motivate purchases via mobile devices. Trust significantly influences customer satisfaction and loyalty within the context of mobile commerce (Lin & Wang, 2006). Kassim and Abdullah (2008) and San-Martín and Lòpez-Catalan (2013) indicate that trust is an essential influential factor regarding customer satisfaction within mobile commerce. It is also essential to study the trust and relationship developed over time between consumers and companies (Gummesson, 2004). M-commerce is characterised by its ability to strengthen the relationship between consumers and businesses (Ngai & Gunasekaran, 2007; Zhang et al., 2012). Thus, in view of the influence of the trust antecedent in the context of mobile commerce, the hypothesis below is proposed:

H1. Trust positively influences customer satisfaction with the m-commerce channel.

4.1.2 Social influence

An individual's environment and social norms can be seen as essential to social influence in the formation of personal thoughts, and are equivalent to subjective norms that are the most investigated determinants of m-commerce adoption (Lu et al., 2003; Wei et al., 2009; Zhang et al., 2012). Social influence is predominantly essential during the initial stage of development or distribution of a new technological innovation, which is when the majority of customers do not yet have their own experiences and reliable information of the technological innovation; they rely on public opinion (Schierz et al., 2010) and individuals, particularly those who are young and follow trends set by others within their environment, in that it strengthens relationships with group members, and people tend to adapt to expectations set by other people (Bhatti, 2007; Tan et al., 2014). Social influence could be segmented into two forms: interpersonal influences (peers, friends, superiors, family) (Rao & Troshani, 2007); and external influences (TV, mass media which includes the internet, newspapers, radio, magazines) (Rogers, 1995; Bhatti, 2007; Lu et al., 2003; Wei et al., 2009). Wei et al. (2009) and Chong (2013) suggest that social influence is a noteworthy driver of mobile commerce usage, as well as a significant influencer of intention to use mobile commerce among Malaysian consumers (Wei et al., 2009). A study focused on understanding two cultures shows that social influence is a noteworthy determinant of the intent to start using mobile commerce amid Malaysian and Chinese customers, and it is the strongest predictor after the trust antecedent (Chong et al., 2012). Although some authors indicate that social influence has a positive influence on attitudinal responses, others found that it could result in negative influence due to negative word of mouth from feedback (Lamb et al., 2008; Jain et al., 2018; Yang et al., 2019). Among users of branded mobile apps, social value is proven to result in a negative impact on continuance intention (Chalomba et al., 2019). A study by Tam et al. (2020) mentions that social influence does not significantly influence the continuance intention to use mobile apps.

Thus, since social influence is an essential factor in influencing the decision to start using m-commerce or usage continuance, the following is proposed:

H2. Social influence negatively influences customer satisfaction with the m-commerce channel.

4.1.3 Perceived usefulness

Perceived usefulness is a key construct within the technology acceptance model (Davies, 1989). Perceived usefulness is the degree to which the customer trusts that online shopping will enable comparison-shopping, provide useful information, and facilitate quicker shopping (Vijayasarathy, 2004). It is also one of the most essential drivers of user satisfaction within an online banking services context, and has a noteworthy influence on satisfaction with mobile websites (Zhou, 2011;

Chong, 2013; Liebana-Cabanillas et al., 2013). Choi et al. (2008) indicate that perceived usefulness has an indirect influence on customer satisfaction in m-commerce, through attitudes to the usage of m-commerce. Perceived usefulness often is an antecedent of consumer satisfaction with technological advancements and mobile commerce (Wu & Wang, 2005; Wei et al., 2009; Yoon, 2010; Chong, 2013; Lu, 2014; Marinkovic & Kalinic, 2017). Thus, the following is proposed:

H3. Perceived usefulness positively influences customer satisfaction with the m-commerce channel.

4.1.4 Mobility

Mobile technologies have provided consumers with the mobility aspect, allowing "anytime, anywhere" access, which also reduces users' need to move or travel to purchase goods or services (Mallat et al., 2009). Mobility is a noteworthy construct of attitudes to usage and intent to use, and is a significant driver of perceived usefulness of mobile commerce services; nevertheless, studies have shown no noteworthy relationship between perceived mobility and ease of usage (Kim et al., 2010; Schierz et al., 2010). Schierz (2010) affirms that mobility is known as one of the key drivers of mobile commerce acceptance. Mobility had a strong influence on a decision to start using mobile ticketing services, which resulted in a noteworthy influence on mobile service acceptance (Mallat et al., 2008). Park and Kim (2013) also concluded that perceived mobility is an essential driver of perceived usefulness towards the acceptance of 4G mobile technologies. Research that examines the influence of mobility on customer satisfaction is still in its infancy; nevertheless, this study assumes that benefits of mobility could produce a positive level of satisfaction.

Therefore, the following is proposed:

H4. Mobility positively influences customer satisfaction with the m-commerce channel.

4.1.5 Perceived enjoyment

The hedonistic aspects of consumption are captured by enjoyment (Dai and Palvia, 2009). Siau et al. (2001) and Mahatanankoon et al. (2005) confirm that mobile commerce possesses unique attributes that offer customers elements that are unavailable in traditional e-commerce, including personalisation, identifiability, usability, and perceived enjoyment. Enjoyment has a positive relationship with perceived value, and is a noteworthy determinant of the intent to use mobile shopping apps for fashion merchandise (Dai & Palvia, 2009; Ko et al., 2009). Perceived enjoyment is also an essential contributor to the value proposition of mobile-based value-added services; it has a positive influence on key brand equity elements such as perceived quality, brand awareness, brand associations, and brand loyalty, and the brand equity factors significantly contribute to

interpreting consumer purchase intention in the context of mobile value-added service consumption (Wang & Li, 2012). Zhang et al. (2012) state that enjoyment significantly influences the acceptance of mobile commerce services. Chong (2013) also suggests that perceived enjoyment has a significant influence on satisfaction, after trust, and continuance intention to use mobile commerce. Perceived enjoyment also has a noteworthy relation with mobile commerce usage activities of transactions, content delivery, entertainment, and mobile location services (Chan & Chong, 2013). Thus, since perceived enjoyment is essential in the acceptance of mobile commerce as well as continuance intent in mobile commerce, the following is proposed:

H5. Perceived enjoyment positively influences customer satisfaction with the m-commerce channel.

4.1.6 Perceived ease of use

Perceived ease of use significantly influences continuance intention to use and customer satisfaction with information systems (Bhattacherjee, 2001). Perceived ease of use influences attitude towards using, but also indirectly improves attitude toward using, through perceived usefulness of an information system (Kulviwat et al., 2007). In the context of acceptance of mobile technology, Nysveen et al. (2005) found that consumers' perception of ease of use influences the formation of positive beliefs about perceived usefulness, in that customers who feel it is easier to use smartphones are more likely to trust that using smartphones increases enjoyment, as well as improve one's personal life. Kim et al. (2009) suggest that perceived ease of use is one of the noteworthy drivers of attitudes toward m-commerce, mobile communication, as well as mobile technology use intention for shopping. Their study also advised that attitude towards mobile communication positively predicted attitudes to m-commerce, thus positively influenced mobile technology use for shopping. Chen et al. (2010) studied self-service systems at retail convenience stores and determined that perceived ease of use has the greatest influences on users' attitudes and that it is more noteworthy than perceived usefulness. Brandyberry et al. (2010) propose that perceived ease of use has a positive direct effect on customer satisfaction. Therefore, since ease of use is an essential influencer of customers' adoption and acceptance of technological innovations, this study proposes the hypothesis below:

H6. Perceived ease of use positively influences customer satisfaction with the m-commerce channel.

4.1.7 Involvement

The high involvement of customers is driven by a better shopping experience, which typically results in a superior knowledge level regarding the industry that may lead to a better purchase

choice, and greater levels of customer satisfaction (San-Martin & López-Catalán, 2013). Customers who are highly involved are inspired to experience higher satisfaction, and because they have a better knowledge about the product, it leads them to a better purchase choice (Richins & Bloch, 1991; Shaffer & Sherrell, 1997). However, less involved customers deem particular purchase inessential, while the highly involved consumers display more of a purchase likelihood because they have identified the product as an important choice for their situation (Bennett et al., 2005). Therefore, based on the importance of customer involvement and the implication it has on someone's interest in and how they are committed to a buying environment, the following is proposed:

H7. Involvement positively influences customer satisfaction with the m-commerce channel.

4.1.8 Innovativeness

Being up-to-date with new technological innovations is a personal trait portraying a positive and proactive attitude towards the usage of new technologies and it is an essential trait for individuals (Eun Park et al., 2010; Rogers, 2003; San-Martin & López-Catalán, 2013). A greater personal exposure to technological advancements involves a greater tendency to shop (Dholakia & Uusitalo, 2002; Rogers, 2003). In the context of mobile commerce, it suggests a positive attitude towards mobile shopping (San-Martin & López-Catalán, 2013). The impact of an individual's level of innovativeness in technological advancements on the acceptance of mobile services has been examined by various previous studies (Jeong et al., 2009). Chen et al. (2009) affirm that innovativeness has an influence on satisfaction with self-service technologies, such as online banking and electronic funds transfers. The impact of products that are bought with a mobile device come with hedonic and symbolic benefits on satisfaction, which also increases consumer involvement (Demoulin & Zidda, 2012). Individuals who are innovative are expected to seek new ways of doing things, such as shopping, assume a lesser risk online, and be more likely to perceive online experiences as positive. Therefore, the following is proposed:

H8. Innovativeness positively influences customer satisfaction with the m-commerce channel.

Figure 4.1 illustrates the research model that specifies the hypothesised relationships among each independent variable and the dependent variable.

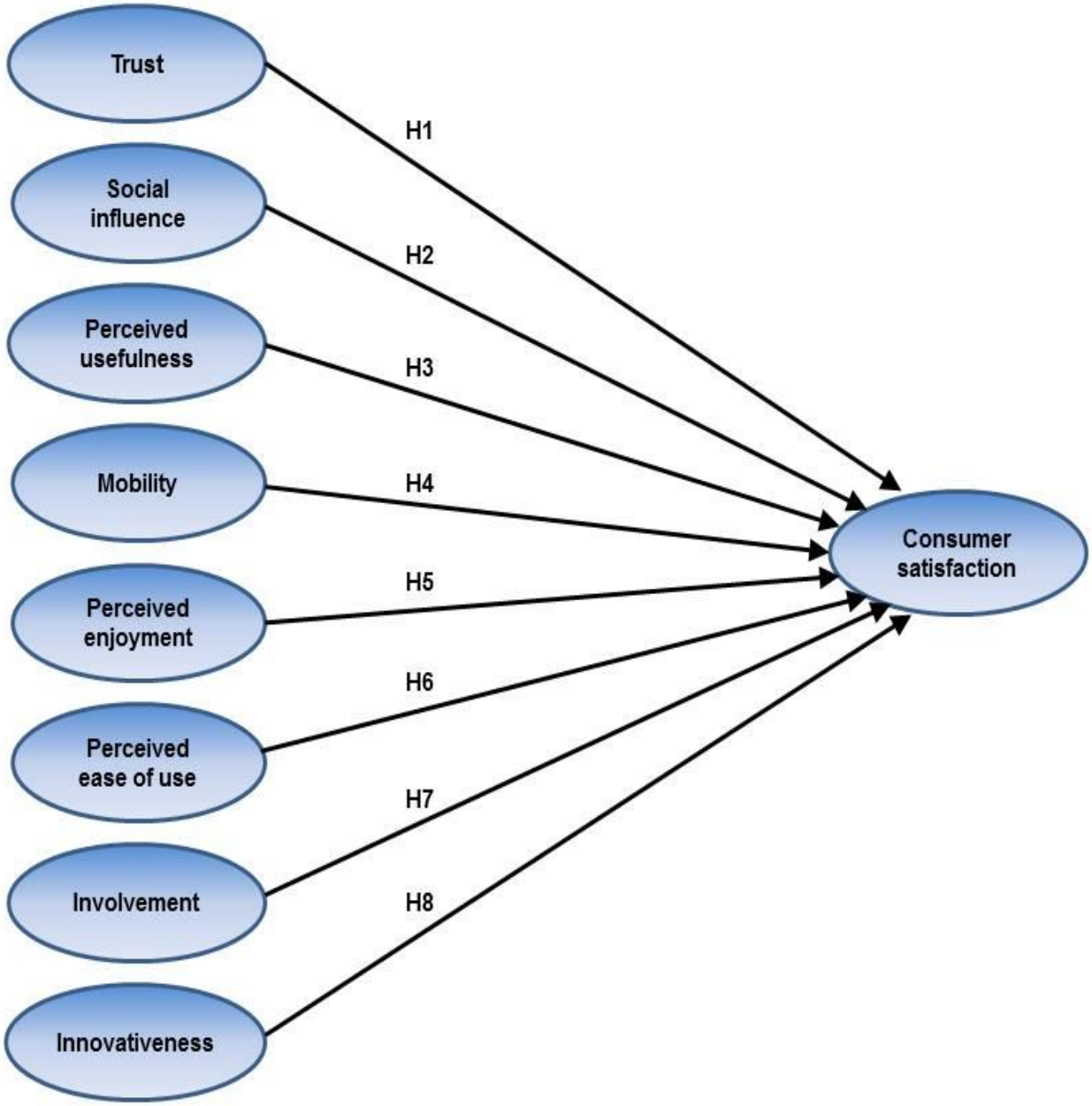

Figure 4.1: Research model

Source: Adapted from San-Martin and López-Catalán (2013); Lee et al. (2015); Marinkovic and Kalinic (2017)

4.2 Paradigmatic approach

The philosophy of this research observes the positivist deductive approach, and it uses the realist ontology belief, which is that the world constitutes an objective reality by nature (Burns & Bush, 2010). Easterby-Smith et al. (2002) state that objectivists "identify causal explanations and fundamental laws that explain regularities in human social behaviour resulting in the generalisation of results using a hypothetical-deductive process (the development of hypotheses from the researches conceptualisation of a particular phenomenon". Positivist studies are usually

considered as being scientific and trusted (Burns & Bush, 2010), hence, this study has followed this approach.

4.3 Research design

Research design is the blueprint of a research study (Maree, 2007; Lamb et al., 2008; Belch & Belch 2015), and it is the way the research is perceived, executed and how the results are finally compiled (Mouton, 2001). A procedural approach of research designs ensure that the relevant research question, objective or problem are instigated in the most valid economic, effective, unbiased and accurate means (Aaker et al., 2004; McDaniel & Gates, 2008). The descriptive research approach used for this study provides an overview of the research population's behaviour in a way that does not influence it and determines the association between factors and the occurrence frequencies (Churchill & Lacobucci, 2010). Maree (2007) suggests that a descriptive study establishes only associations between variables, and thus in this instance, validating the drivers of customer satisfaction in mobile commerce among Generation Y consumers. This study employed a descriptive research design for quantitative data collection using a questionnaire to validate the drivers of customer satisfaction in m-commerce, which include trust, social influence, mobility, perceived enjoyment, usefulness, ease of use, involvement and innovativeness.

4.4 Sampling

4.4.1 Research population

A population is as an entire group under study that poses some common set of characteristics in respect of a marketing research problem (Burns & Bush, 2010; Aaker et al., 2011). The target population for this study consists of Generation Y mobile device users within Cape Town. The target population for this study is further restricted to Generation Y mobile commerce users within Cape Town.

4.4.2 Sample frame

Cooper and Schindler (2006) and Churchill et al. (2010) define a sample frame as "a list of elements within the population from which the sample is drawn, and the list could consist of institutions, individuals, geographic locations, or other units". The description of a sample frame does not have to enumerate all population members, and it is sufficient to specify the procedure by which each sample unit can be located (Aaker et al., 2011). The sample frame for this study is a self-generating sampling frame, in the form of mobile phone shoppers in Cape Town.

4.4.3 Sample unit

A sample unit is the basic level of investigation and contains the elements of the target population (Burns & Bush, 2010; Haydam & Mostert, 2013). For this study, the sample unit is Generation Y mobile phone shoppers within Cape Town.

4.4.4 Sample element

A sample element is said to be a single unit (object or participant) selected from the population regarding which the measurement is taken (Cooper & Schindler, 2006). A Generation Y smartphone user who resides in Cape Town, and has shopped via their mobile devices, was the sample element for this study.

4.4.5 Sampling method

In non-probability sampling, it is said that there is no way of estimating, or probability that any element of the population will be included in the sample size, or non-zero chance to be included, and the sample relies on personal judgement of the researcher in the element selection process (Cooper & Schindler, 2006; Churchill et al., 2010; Aaker et al., 2011).

This study used a non-probability sampling procedure and employed a combination of convenient and snowballing sampling techniques.

4.4.6 Sampling procedure motivation

This study employed a non-probability sampling procedure for a few reasons. Firstly, there is no available list of the research population from which the sample can be drawn. Secondly, because the cost and time of handling and developing a sample frame are eliminated. Thirdly, because this study uses the whole of Cape Town as a sample frame, sample elements need to represent a wider range of the geographic area (sample frame). Finally, because the selection of the sample relied on the researcher's judgement, this is clearly because it is not possible to assume that every 'nth' person will be a mobile shopper within Cape Town.

4.4.7 Sampling method motivation

A combination of the convenience and snowballing sampling techniques was employed. The combination between the two methods allows for a large number of respondents to be interviewed, with information being collected more simply, quickly and inexpensively. In addition, the researcher had to conduct research in convenient areas where prospective sample elements, which represent

a wider range of the geographic location, could be easily contacted (Churchill et al., 2010; Aaker et al., 2011; Haydam & Mostert, 2013).

4.4.8 Sample size

A sample size must have a proportional relationship to the size of the population from which it will be drawn and researchers must have in mind that the number of subjects from whom valid data will ultimately be obtained may be smaller than the number which was drawn originally; thus drawing a larger sample than the one for which data is desired eventually is advisable (Cooper & Schindler, 2006). The sample size for this study was 5 497 with a confidence level of 95% and a margin of error of 5%.

4.4.9 Sample errors

Any research study is bound to introduce some errors into a specific study. The total error in a research study is said to be the difference between the true value of interest and the observed value. The total error in a study is said to consist of two major components, sampling and non-sampling error. Sampling error is defined as any error in a survey since a sample is used. It is said that if the difference in value (error) between the population parameter and sample statistics is only because of sampling, then the error is a sampling error (Burns & Bush, 2010; Aaker et al., 2011).

An error that occurred in this study is the representation of the selected research sample's perceptions and that of the entire Generation Y population within Cape Town. Overcoming this error can be achieved by replicating this research at a commercial level, where resources to accurately draw a sample and execute data collection on a representative sample are available.

4.5 Data collection and questionnaire design

Data collection is the process of gathering and measuring information on certain variables that are of interest to the researcher, collected in an established manner, which answer specified research questions (Aaker et al., 2011). Burns and Bush (2010) also state data collection is a market research procedure during which respondents provide information to inquiries posed by the researcher. Respondents were approached in convenient places around Cape Town, for example Cape Peninsula University of Technology (CPUT) because prospective respondents for this study were most likely to be on these premises (permission from CPUT was obtained to conduct this study on their premises). This study used a paper self-administered questionnaire and an online questionnaire to collect data, and research assistants were in the field to approach prospective respondents to complete the physical questionnaire if they qualified for this study (i.e. had previously engaged in a mobile shopping app). The online questionnaire was also available via a

link, which was disseminated utilising a variety of digital conduits such as WhatsApp, Peers24 Network, Facebook, LinkedIn, SMS and email. A total of 5 497 questionnaires were completed. The sample included respondents of any gender; over the age of 18 years or older; and from the Generation Y cohort. Prior to commencing to fieldwork, a pilot study consisting of a sample size of 50 to test the data collection process and the measuring tool was undertaken. During the pilot study, the researcher tested the questionnaire logic, flow, and ambiguities. Amendments were made as per the outcome of the pilot study.

The questionnaire for this study consisted of four sections, namely screening, mobile shopping usage factors (mobile platform, type of mobile device, length of usage, frequency of usage, monetary value, and demographic details (gender, age, employment, level of education, ethnicity and household income) (Duffett & Wakeham, 2016; Duffett, 2017). The Likert scale sections consisted of statements to be measured via a 5-point scale, with 1 indicating strong disagreement and 5 indicating strong agreement with each particular statement. The statements that were adopted for the measurement of variables in the model were selected based on the results of previously conducted research. The statements adopted for measuring one of the model's variables, from San-Martín and Lòpez-Catalan (2013), examined how mobile businesses satisfy their consumers, and three statements were used to measure customer satisfaction as an independent variable. Trust was selected based on a construct from studies that measured consumer decisions and adoption of m-commerce (Chong et al., 2012; Zarmpou et al., 2012). Chong et al. (2012), and Chan and Chong (2013) provided statements for measuring social influence. Statements used to measure mobility were adopted from a study that examined factors influencing the intent to use mobile payment facilities (Kim et al., 2010). A study by Chan and Chong (2013) provided the statements adopted to measure both perceived usefulness and perceived enjoyment, and these two variables were measured using three statements each. Perceived ease of use was measured using five statements, and innovativeness as well as involvement were measured using three statements respectively (San-Martin & López-Catalán, 2013; Lee et al., 2015).

4.6 Data analysis

Data analysis is a set of methodologies as well as procedures that are used to obtain insights from the data. Analysis also entails the breaking up of information into patterns, relationships and trends. This study analysed data using descriptive statistics that describe and display numerically/or graphically. "Descriptive statistics display characteristics of the location, spread, and shape of data array" (Cooper & Schindler, 2006; Aaker et al., 2011). Descriptive statistics are statistics that are usually related to frequencies that help summarise information presented in a frequency format.

The collected data was captured, coded, and analysed by cross tabulating the results and performing statistical techniques using SPSS (version 21) statistical software. SPSS was useful for this study because it can help to identify trends among a dataset and can be useful in comparing data. All completed surveys were thoroughly inspected to see whether these were complete and correct in general. The Likert questionnaire included Likert scale type questions, which were organised in a manner, which assisted to avoid having respondents selecting a single column throughout the Likert scale. The Likert scale statements were manipulated using SPSS; prior to that Cronbach's Alpha statistical technique was utilised to ascertain the customer responses' reliability. Descriptive statistical tests (means, frequencies, non-parametric one-sample bi-nominal standardized test, and standard deviations) were also used to describe the findings, and Pearson's correlation coefficient analysis was used to ascertain the strength of the relationship between two or more variables. This study also used generalized linear model statistical tests, whereas the Wald's Chi-square test and the Bonferroni pairwise comparisons post ad hoc tests were used to ascertain if there was a significant difference between the abovementioned variables.

4.7 Summary

In this chapter, the researcher focused on describing and applying methodological theories to the current study. Relevant literature was discussed with regard to the hypotheses and conceptual research model used to measure customer satisfaction with mobile commerce, and each of the influential antecedents that were hypothesised to drive customer satisfaction with mobile commerce. The discussion of literature then focused on the paradigmatic approach followed for this study (positivist approach). The research design was also described, which was descriptive in nature since this study observed and considered the research population's behaviour without adversely influencing it and determined the frequency with which the events under study occurred, and/or the relationship between variables. The chapter also described the sampling methodology followed, where a non-probability sampling technique was used (a combination of both snowballing and convenience sampling). This study adopted a quantitative data approach in which a questionnaire was used to collect the primary data. The data analysis techniques and statistical techniques used to valid the results were also discussed in this chapter.

CHAPTER 5

SUMMARY OF FINDINGS

5.1 Introduction

The findings section is essential for a research study as it provides the outcomes of the investigation as set out in the research objectives. This section contains bar graphs and pie charts representing the main findings that address the primary and secondary research objectives. A confirmatory factor analysis and the component correlation matrix was utilised to test for the reliability and convergent validity of the measurement model for this study. This section also contains results of the structural equation modelling (SEM) to test the hypotheses, and the generalised linear model (GLM) using the Wald Chi-Square test and pairwise post hoc Bonferroni correction measures to evaluate the influence of usage and demographics variables on the customer satisfaction attitudinal responses.

5.2 Mobile shopping app usage characteristics

5.2.1 Mobile shopping app categories (all)

This question was asked in order to establish all of the mobile shopping app categories respondents have previously used.

Figure 5.1: Mobile shopping app categories (all) frequency

Mobile banking (76.2%) was the most prevalent mobile shopping app category as claimed by the respondents, followed by e-hailing taxi services (58.4%), food outlets & delivery (55.8%), online retail stores (52.3%), retail stores, and other (6.6%).

5.2.2 Mobile shopping app categories (most engaged)

This study also sought to uncover which mobile shopping app category most engaged respondents. This question was also asked so that cross-analysis could be performed.

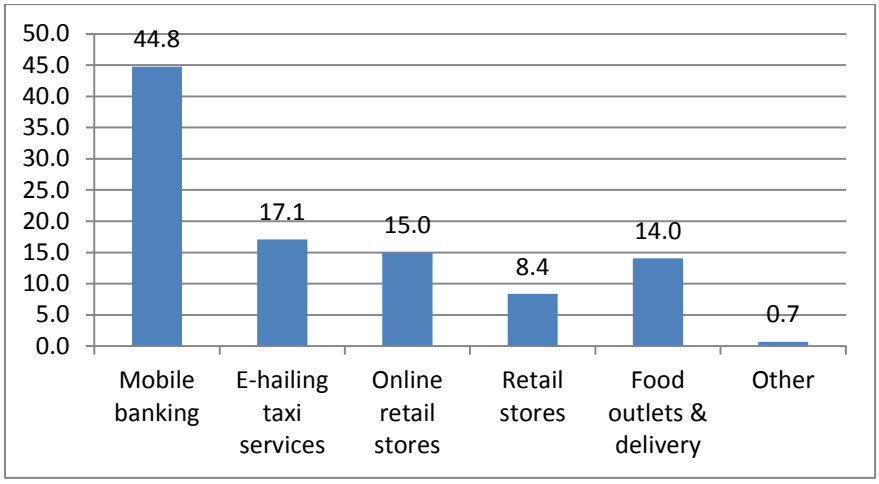

Figure 5.2: Mobile shopping app category (most engaged) incidence

As per the responses, the most engaged mobile shopping app category was mobile banking (44.8%), whereas e-haling taxi services (17.1%), online retail stores (15%), food outlets & delivery (14%) apps have less regular engagement among respondents.

5.2.3 Device access

Respondents were asked which mobile device they used to access mobile shopping apps. This variable was also used to conduct cross-analysis between the different mobile devices used to access mobile shopping apps and customer satisfaction.

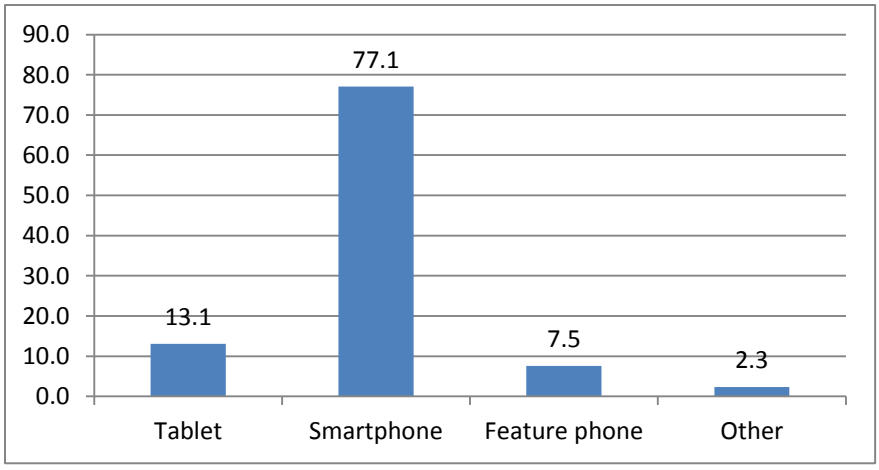

Figure 5.3: Device access frequency

A majority of respondents indicated that they accessed mobile shopping apps using smartphones (77.1%), followed by tablets (13.1%), feature phones (7.5%) and other devices (2.3%).

5.2.4 Length of usage

This study also aimed to ascertain how long respondents have been engaged with mobile shopping apps. This question also made cross-analysis possible.

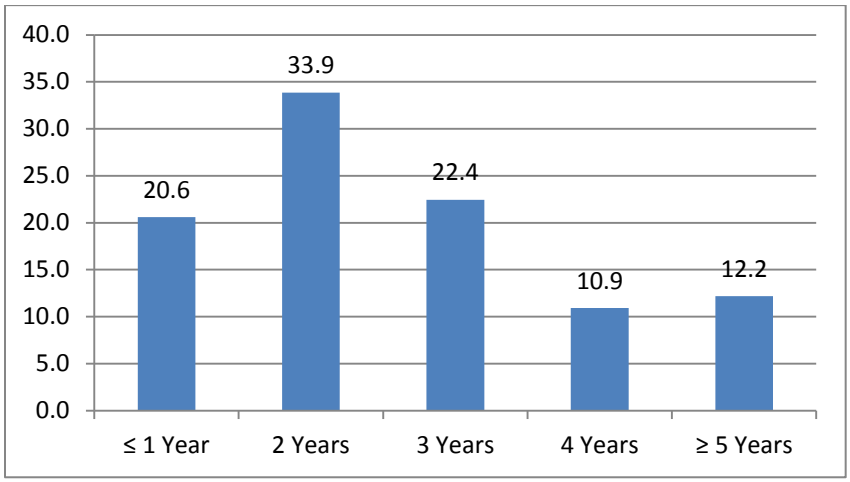

Figure 5.4: Length of usage rate

A little over a third of respondents stated that they had engaged with mobile shopping apps for 2 years (33.9%), less than one year (20.6%), 3 years (22.4%), 4 years (10.9%), and more than 5 years (12.2%).

5.2.5 Mobile shopping engagement

It is important for this study to consider how often respondents engaged with mobile shopping apps. This independent variable enabled a cross-examination between the frequency of engagement in mobile shopping apps and the level of customer satisfaction.

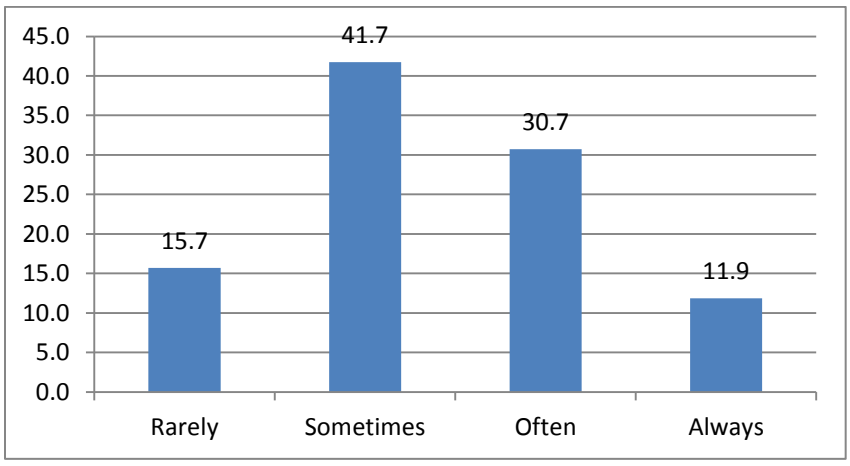

Figure 5.5: Mobile shopping engagement frequency

A higher proportion of respondents engaged with mobile shopping apps sometimes (41.7%), followed by those who claimed to engage with mobile shopping apps often (30.7%); rarely (15.7%); and always (11.9%).

5.2.6 Usage hours

Respondents were asked how many hours they spent on their mobile shopping app per shopping occasion. A cross-analysis of mobile shopping apps usage hours was essential for this study.

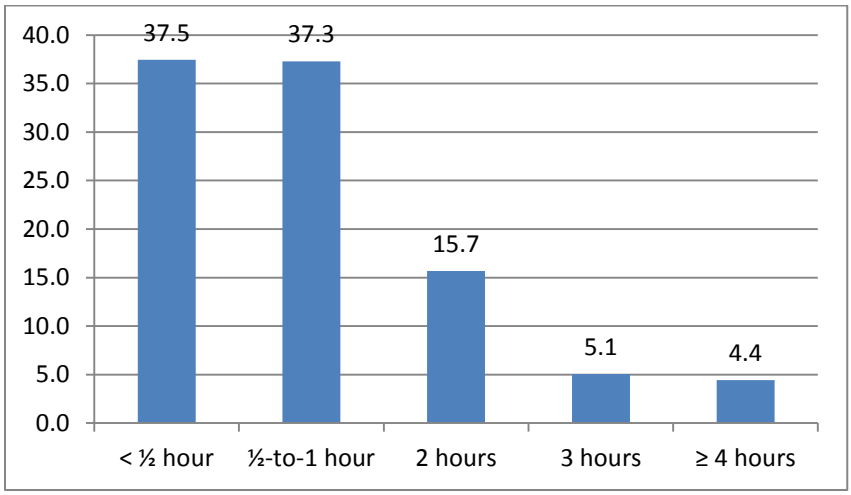

Figure 5.6: Usage hour frequency

Most respondents stated that they spent up to an hour (74.7%) per shopping occasion on their mobile shopping apps, while 15.7%) spent 2 hours and 9.6% spent 3 or more hours.

5.2.7 Marketing communication response

This study inquired if respondents respond to marketing communication that was channelled via mobile shopping apps. A cross-examination was possible using this question as well.

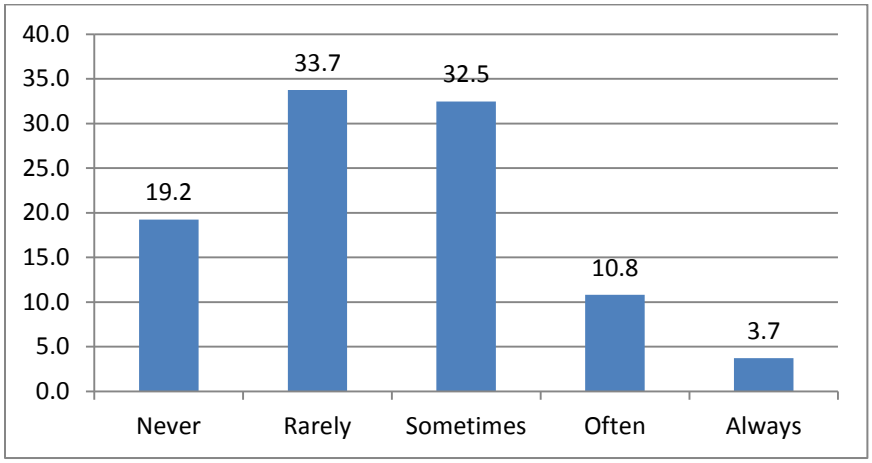

Figure 5.7: Marketing communication response rate

A higher proportion of respondents (33.7%) claimed to rarely respond to marketing communication via mobile shopping apps, while 32.5% sometimes engaged; 19.2% never engaged; 10.8% often engaged; and 3.7% always engaged with mobile communication via mobile shopping apps.

5.2.8 Mobile shopping app spending

Respondents were asked to indicate how much they spent on average per month on mobile shopping in order to cross-analyse the influence of spending behaviour on customer satisfaction.

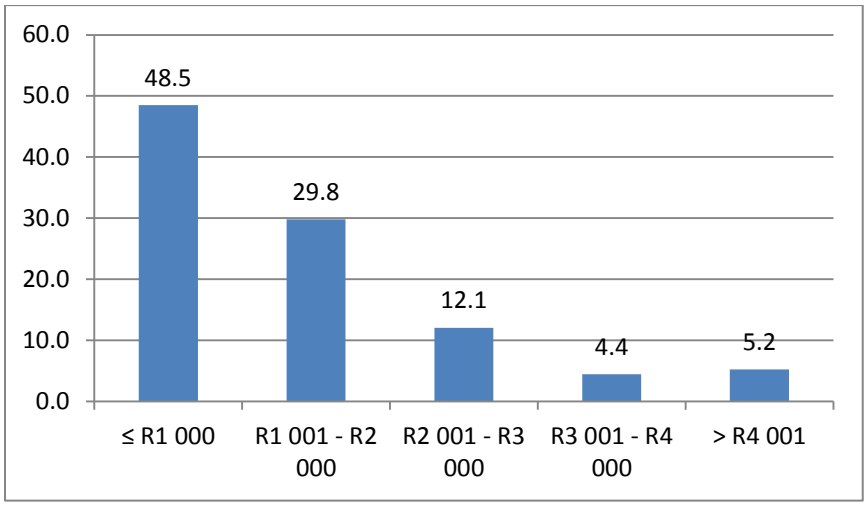

Figure 5.8: Mobile shopping app spending frequency

Many respondents (48.5%) spent less than or a maximum of R1 000 a month, 29.8% spent between R1 001 - R2 000 rand a month, 5.2% spent more than R4 000 a month, and 4.4% spent between R3 001 to R4 000 a month.

5.3 Demographic factors

5.3.1 Gender

It was necessary to ascertain the gender of respondents, since a cross-examination was conducted to determine whether gender has an influence on customer satisfaction.

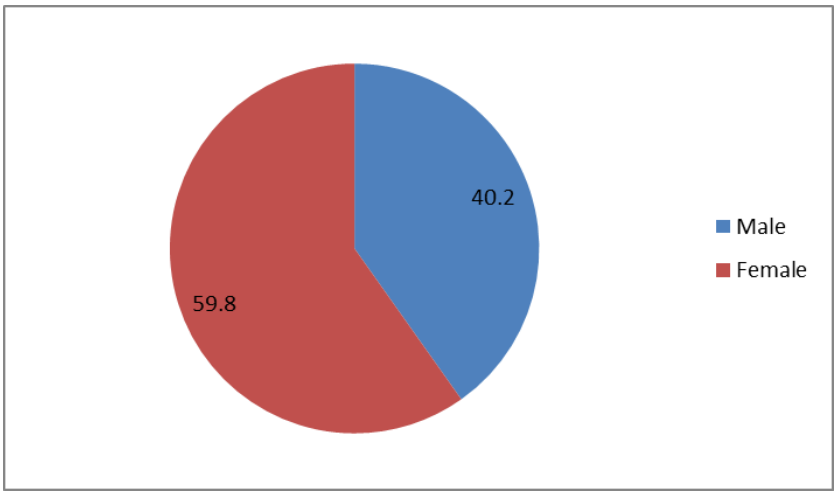

Figure 5.9: Gender incidence

A majority of respondents were female (59.8%) and 40.2% were male.

5.3.2 Age

It was essential to confirm the age of respondents, in order to be able to cross-analyse the effect that this independent variable had on customer satisfaction regarding mobile shopping apps.

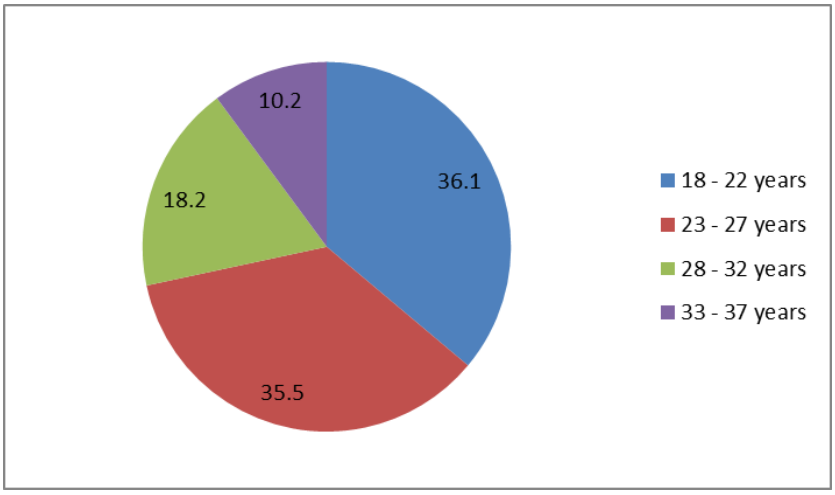

Figure 5.10: Age prevalence

18 - 22 year olds accounted for 36.1% of respondents, followed by 23 - 27 year olds (35.5%), 28 - 32 year olds (18.2%), and 33 - 37 year olds (10.2%).

5.3.3 Education level

The education level of respondents was asked to determine whether it had an effect on customer satisfaction.

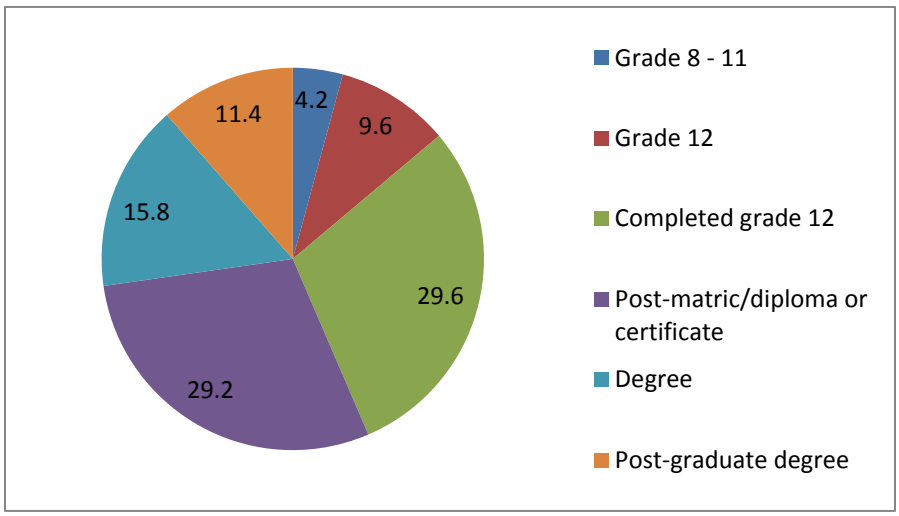

Figure 5.11: Education level rate

A number of the respondents had completed grade 12 (29.6%); followed by post-matric diploma/certificate (29.2%); degree (15.8%); postgraduate degree (11.4%); are currently in grade 12 (9.6%); and grade 8 - 11 (4.2%).

5.3.4 Employment status

Employment status is important in this study, since it was used to perform a cross-analysis against customer satisfaction.

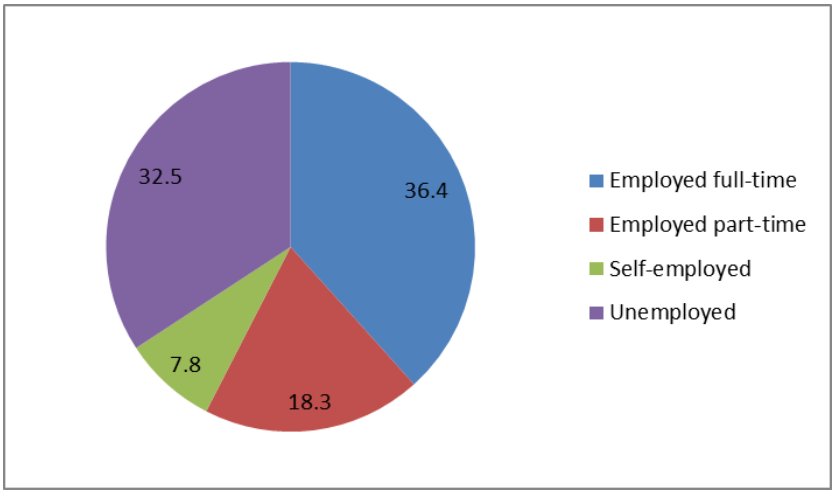

Figure 5.12: Employment status rate

Many of the respondents were employed full-time (36.4%), followed by those who were unemployed (32.5%), employed part-time (18.3%); and self-employed (7.8%).

5.3.5 Population group

Ascertaining which population group a respondent identifies with was essential for this study for the purposes of cross-analysis with the level of customer satisfaction.

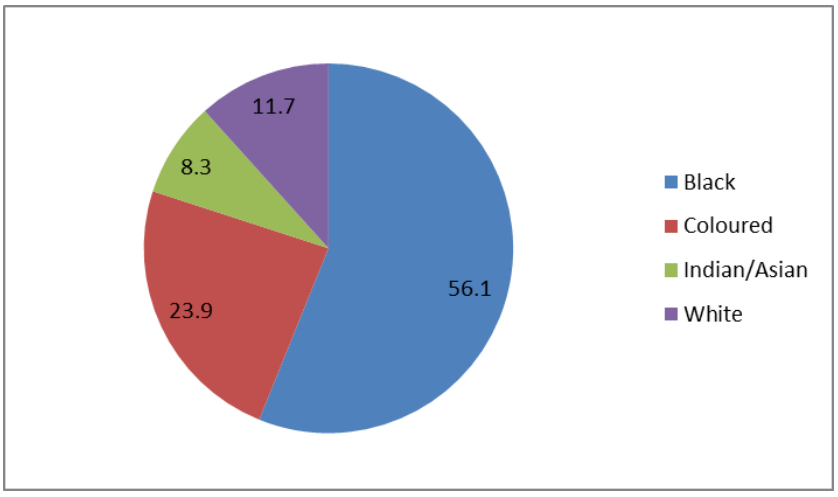

Figure 5.13: Population group rate

A majority of respondents identified themselves as members of the Black population group (56.1%), followed by the Coloured population group (23.9%), White population group (11.7%), and Indian/Asian population group (8.3%).

5.4 Consumer attitudes

The mean values and standard deviations of the mobile shopping app constructs are included in Table 5.1, while the weighted averages of the constructs are depicted in bar charts.

Table 5.1: Mobile shopping apps' constructs descriptive statistics

Constructs	M	SD
Trust	3.52	0.894
Social influence	3.49	0.953
Perceived usefulness	3.66	0.958
Mobility	4.10	0.853
Perceived enjoyment	3.84	0.894
Perceived ease of use	3.94	0.818
Involvement	3.42	0.963
Innovativeness	3.45	1.035
Customer satisfaction	3.76	0.910

5.4.1 Trust

Four Likert scale questions were utilised to establish the trust construct by computing the weighted average.

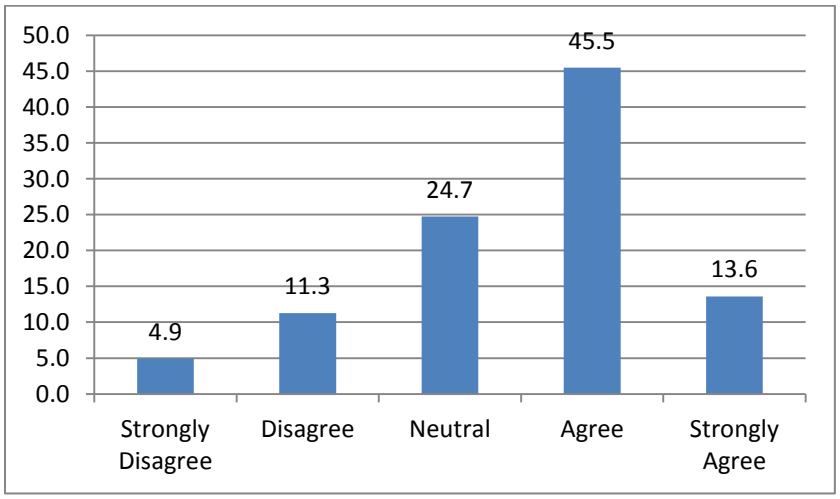

Figure 5.14: Trust frequency

A majority of respondents (59.1%) agreed (strongly agreed and agreed) that mobile shopping apps resulted in trust, when compared to the 16.2% who disagreed (strongly disagreed and disagreed).

5.4.2 Social influence

Three Likert scale statements were used to ascertain the social influence scale by calculating the weighted average.

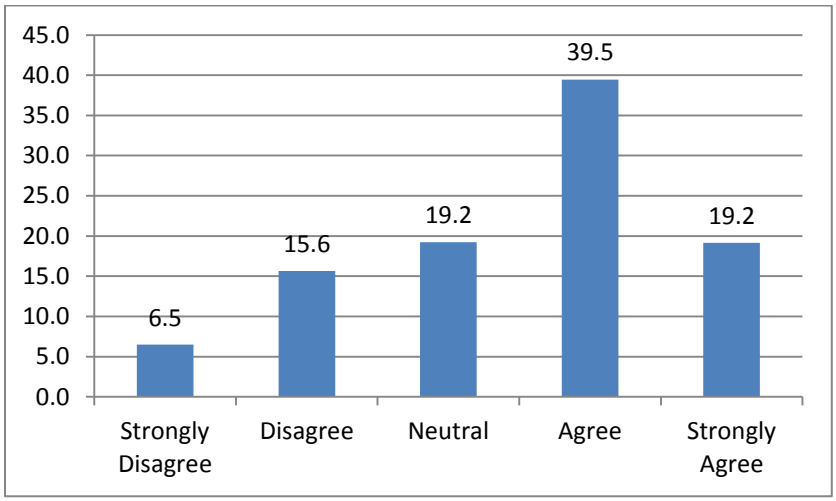

Figure 5.15: Social influence frequency

Most respondents (58.7%) agreed (strongly agreed and agreed) that social influence resulted in mobile shopping app usage, whereas 22.1% disagreed (strongly disagreed and disagreed).

5.4.3 Perceived usefulness

The perceived usefulness measure consisted of three Likert scale statements that were used to calculate the weighted average of this scale.

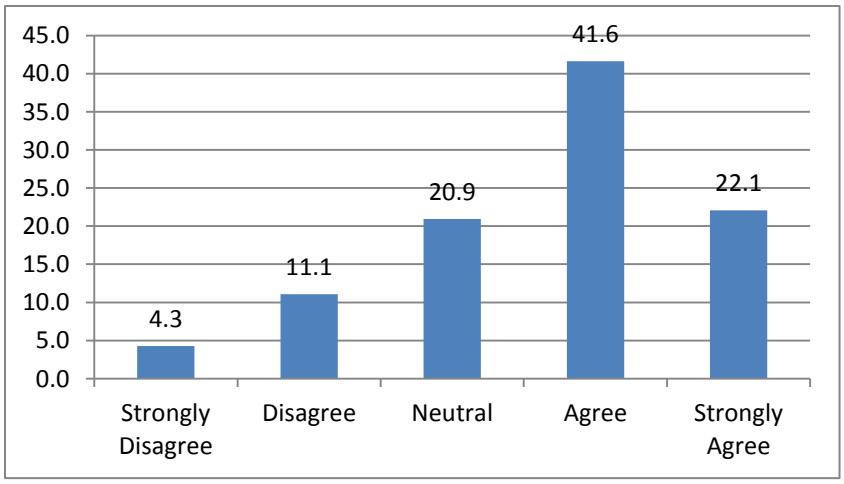

Figure 5.16: Perceived usefulness rate

63.7% of respondents agreed (strongly agreed and agreed) that mobile shopping apps were useful, compared to the rest of the respondents of whom 15.4% disagreed (strongly disagreed and disagreed).

5.4.4 Mobility

The mobility construct comprised four Likert scale statements, which were used to determine the weighted average of this construct.

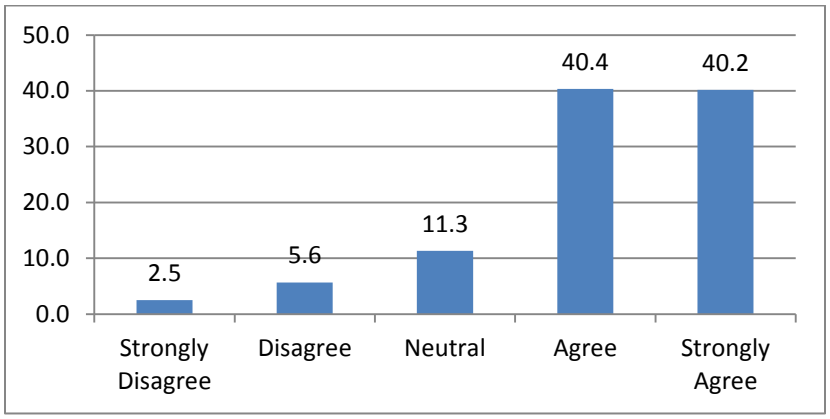

Figure 5.17: Mobility incidence

Respondents (80.6%) agreed (strongly agreed and agreed) that mobile shopping apps can be used while they are mobile, and only 8.1% disagreed (strongly disagreed and disagreed).

5.4.5 Perceived enjoyment

The perceived enjoyment measure included three Likert scale statements to calculate the weighted average of this measure.

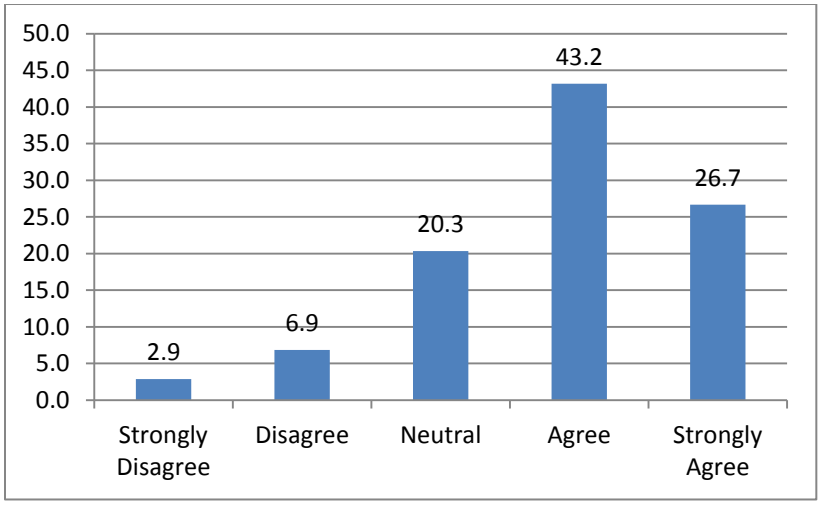

Figure 5.18: Perceived enjoyment frequency

Most respondents (69.9%) agreed (strongly agreed and agreed) that the use of mobile shopping apps resulted in enjoyment, and 9.8% disagreed (strongly disagreed and disagreed).

5.4.6 Perceived ease of use

Five Likert scale questions were used to establish the perceived ease of use of mobile shopping apps by computing the weighted average for the construct.

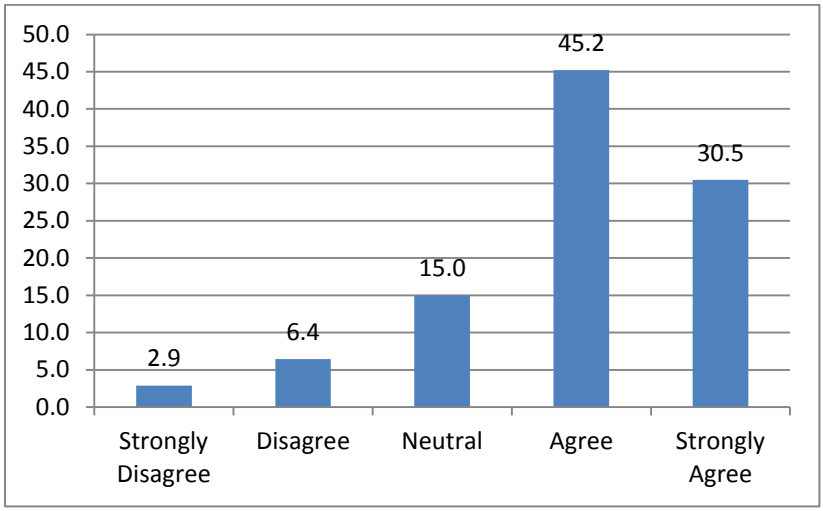

Figure 5.19: Perceived ease of use rate

A majority of respondents (75.7%) agreed (strongly agreed and agreed) that mobile shopping apps were easy to use, and the rest (9.3%) disagreed (strongly disagreed and disagreed).

5.4.7 Involvement

Three Likert scale statements were used to ascertain the social influence scale by calculating the weighted average.

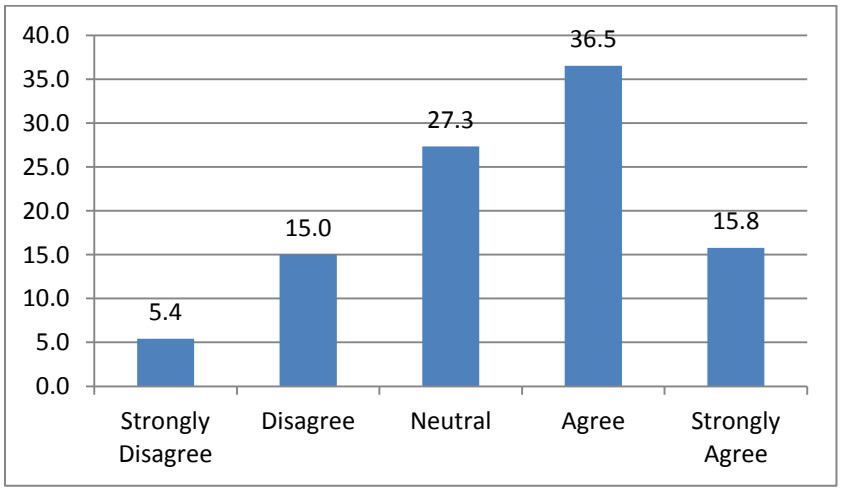

Figure 5.20: Involvement rate

Just over half (52.3%) of respondents agreed (strongly agreed and agreed) that they were highly involved in products and services provided through mobile devices, whereas 20.4% disagreed (strongly disagreed and disagreed).

5.4.8 Innovativeness

The innovativeness construct includes three Likert scale statements that were used in calculating the weighted average.

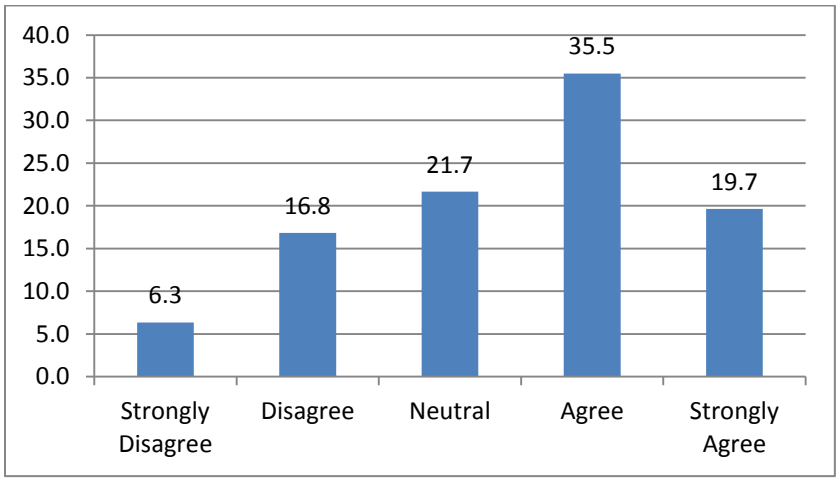

Figure 5.21: Innovativeness incidence

Most respondents (55.2%) agreed (strongly agreed and agreed) that they considered themselves as innovative (engaged in information technology), whereas 23.1% disagreed (strongly disagreed and disagreed).

5.4.9 Customer satisfaction

Customer satisfaction was determined by using three Likert scale statements to compute the weighted average for the construct.

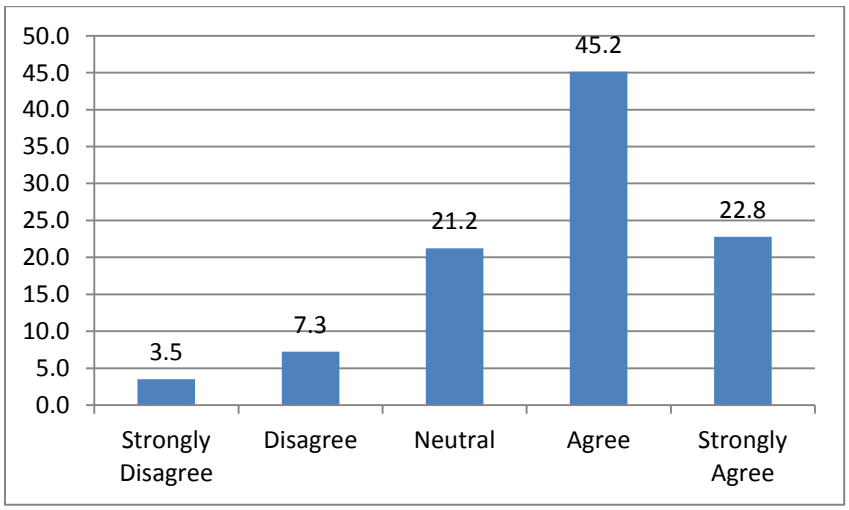

Figure 5.22: Customer satisfaction frequency

68% of respondents agreed (strongly agreed and agreed) that they were satisfied with mobile shopping apps, whereas 10.8% disagreed (strongly disagreed and disagreed).

5.5 Measurement model

Confirmatory factor analysis (CFA) was used to consider the 31 Likert scale statement items in order to identify various factors regarding the mobile shopping apps constructs. The Kaiser-Meyer-Olkin (KMO) test was utilised to evaluate the sampling adequacy, which revealed an excellent value of 0.927 (Pallant, 2010). The factorability of correlation matrix was assessed via Bartlett's Sphericity Test that was used to determine the various Likert scale correlations, which was found to be adequate, as the test was significant at $p < 0.001$ (Pallant, 2010).

5.5.1 Eigenvalues

Amos was utilised to perform CFA in order to determine how many factors were derived from the individual Likert scale items via eigenvalues and the total explained variance.

Table 5.2: Eigenvalues and total explained variance

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	10.912	35.201	35.201	10.912
2	2.412	7.780	42.981	2.412
3	2.346	7.568	50.550	2.346
4	2.000	6.453	57.003	2.000
5	1.423	4.591	61.594	1.423
6	1.335	4.305	65.899	1.335
7	1.240	4.000	69.898	1.240
8	1.169	3.772	73.671	1.169
9	1.131	3.647	77.318	1.131
10	0.536	1.728	79.046	
11	0.492	1.586	80.632	
12	0.466	1.502	82.134	
13	0.425	1.372	83.506	
14	0.398	1.285	84.791	
15	0.381	1.230	86.021	
16	0.376	1.213	87.234	
17	0.351	1.132	88.366	
18	0.338	1.090	89.456	
19	0.322	1.038	90.494	
20	0.295	0.950	91.444	
21	0.291	0.940	92.384	
22	0.284	0.915	93.299	
23	0.278	0.897	94.196	
24	0.264	0.852	95.048	
25	0.257	0.829	95.877	
26	0.249	0.803	96.680	
27	0.234	0.756	97.436	
28	0.215	0.693	98.129	
29	0.203	0.656	98.784	
30	0.193	0.624	99.408	
31	0.183	0.592	100.000	

The CFA produced nine factors where the eigenvalues were larger than one, which explained variance of 10.912%, 2.412%, 2.346%, 2.000%, 1.423%, 1.335%, 1.240%, 1.169%, and 1.131% respectively. The total factors sum explained 77.318% of the variance, which is indicative of very good correlation in the CFA (refer to Table 5.2).

5.5.2 Scree plot

The scree plot was used to determine the components (factors/constructs) that should be retained based on the PCA.

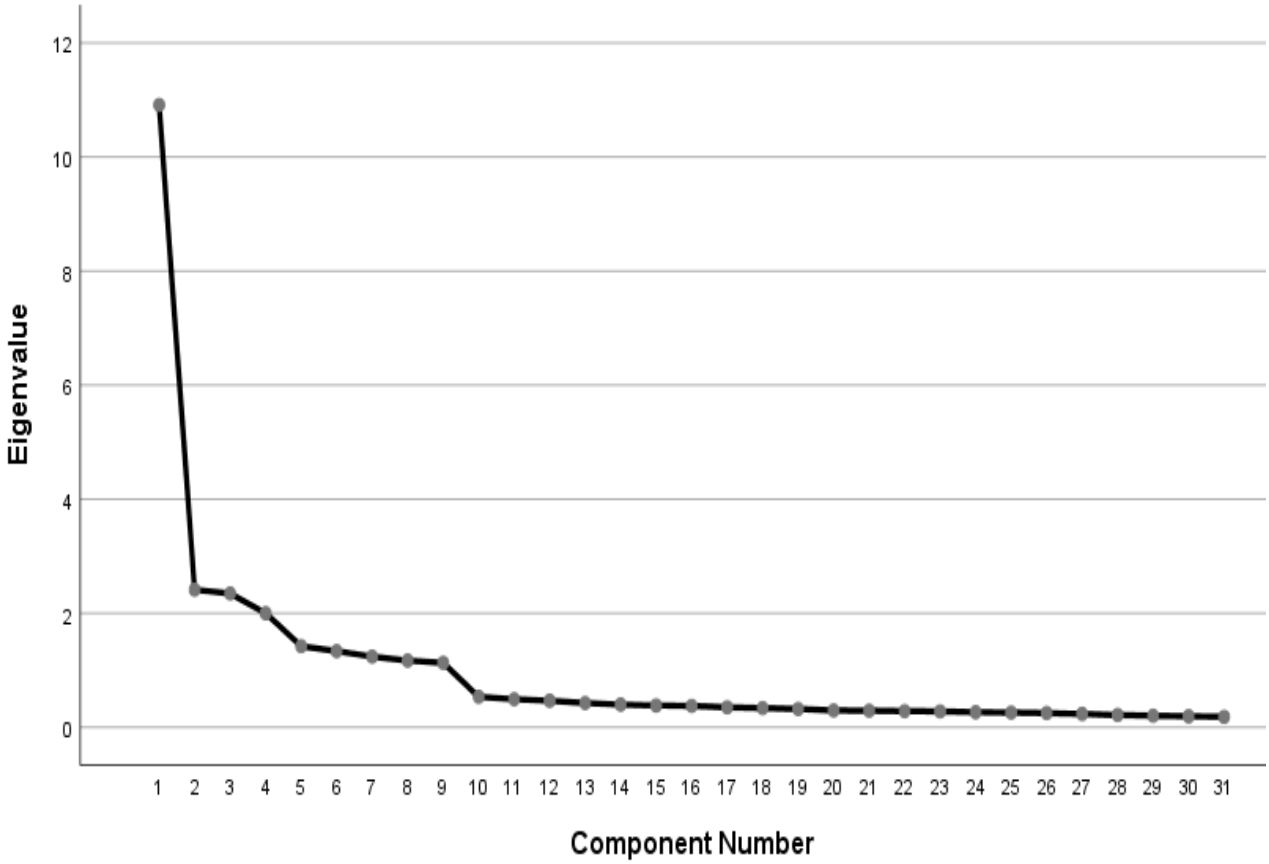

Figure 5.23: Scree plot

An examination of the scree plot revealed a distinct change in direction (point of inflection) at components 9 and 10, so all of the components prior to this point were retained (Pallant, 2010). Hence, the first nine components were considered for further analysis (refer to Figure 5.23).

5.5.3 Pattern matrix

The pattern matrix indicated nine distinct factors with factor factors loadings of greater than 0.5 and with two or more factors (Pallant, 2010) (refer to Table 5.3).

Table 5.3: Pattern matrix

Likert scale items	Factors (constructs)								
	1	2	3	4	5	6	7	8	9
Transactions via mobile shopping apps are safe	0.373	0.874	0.321	0.174	0.344	0.325	0.309	0.332	0.266
Privacy of mobile shopping app users is well protected	0.331	0.891	0.300	0.190	0.310	0.360	0.294	0.344	0.308
Mobile shopping app transactions are reliable	0.367	0.885	0.291	0.213	0.350	0.376	0.300	0.370	0.317
Security measures in mobile shopping apps are adequate	0.333	0.853	0.270	0.234	0.356	0.386	0.272	0.350	0.347
Family/friends influence my decision to use mobile shopping apps	0.172	0.274	0.202	0.181	0.190	0.285	0.264	0.251	0.842
Media (TV, radio, newspapers) influence my decision to use mobile shopping apps	0.193	0.326	0.285	0.223	0.176	0.331	0.286	0.311	0.830
I think I would be more ready to use the services of mobile shopping apps if they were used by people from my social circle	0.221	0.283	0.228	0.223	0.204	0.404	0.230	0.258	0.806
Mobile shopping apps improves work performance	0.305	0.357	0.396	0.283	0.282	0.865	0.398	0.316	0.413
Mobile shopping apps improves productivity	0.327	0.376	0.356	0.305	0.310	0.932	0.342	0.335	0.359
Mobile shopping apps improve efficiency	0.352	0.383	0.382	0.303	0.313	0.893	0.345	0.319	0.330
Mobile shopping apps can be used anytime	0.424	0.304	0.884	0.258	0.311	0.398	0.432	0.254	0.260
Mobile shopping apps can be used anywhere	0.428	0.298	0.908	0.269	0.320	0.369	0.451	0.278	0.248
Mobile shopping apps can be used while traveling	0.401	0.296	0.891	0.234	0.352	0.349	0.477	0.256	0.243
Using mobile shopping apps are convenient because my phone is almost always at hand	0.462	0.288	0.808	0.195	0.347	0.348	0.433	0.234	0.240
Using mobile shopping apps is fun	0.416	0.293	0.412	0.321	0.387	0.369	0.912	0.320	0.282
Using mobile shopping apps is enjoyable	0.439	0.315	0.491	0.315	0.410	0.359	0.927	0.337	0.274
Using mobile shopping apps is engaging	0.442	0.316	0.447	0.289	0.381	0.364	0.868	0.388	0.301
Learning to use mobile shopping apps is easy for me	0.824	0.340	0.456	0.321	0.449	0.319	0.467	0.271	0.177
My interaction with mobile shopping apps does not require a lot of mental effort	0.861	0.333	0.409	0.320	0.404	0.318	0.422	0.300	0.183
My interaction with mobile shopping apps is understandable.	0.864	0.341	0.422	0.286	0.411	0.335	0.429	0.339	0.201
I can install mobile shopping apps with my existing applications without any conflicts	0.805	0.326	0.356	0.291	0.390	0.267	0.311	0.398	0.218
Overall, I think mobile shopping apps are easy to use	0.805	0.332	0.378	0.269	0.478	0.278	0.355	0.433	0.179
I am very interested in the products and services offered over the mobile phone	0.415	0.378	0.320	0.370	0.422	0.349	0.371	0.864	0.302
My level of involvement with the products and services offered over the mobile phone is high	0.383	0.376	0.270	0.430	0.455	0.331	0.348	0.916	0.288
I am very involved with the mobile phone buying-selling environment	0.343	0.325	0.225	0.466	0.398	0.302	0.322	0.876	0.295
If I hear about some new information technology (IT), I will seek out ways of experiencing it	0.355	0.225	0.290	0.896	0.368	0.315	0.314	0.455	0.232
I am usually the first among my friends to try out new IT	0.278	0.195	0.194	0.895	0.349	0.285	0.284	0.419	0.252
I enjoy experiencing new IT	0.344	0.214	0.271	0.891	0.436	0.296	0.318	0.394	0.193
I am quite satisfied with mobile shopping app services	0.491	0.361	0.364	0.423	0.905	0.320	0.420	0.438	0.227
Mobile shopping app services meet my expectations	0.452	0.339	0.333	0.389	0.927	0.304	0.387	0.427	0.210
My experience with using mobile shopping apps is positive	0.460	0.372	0.345	0.358	0.906	0.304	0.382	0.429	0.195

5.5.4 Reliability and convergent validity

It was important to verify the reliability and validity of the factors, which were used to construct the model for customer satisfaction with mobile shopping apps. The CFA and the component

correlation matrix were utilised to test for the reliability, convergent and discriminant validity of the measurement model for this study. This process involved determining the factor loadings, average variance extracted (AVE), composite reliability (CR), Cronbach's Alpha, and the component correlation matrix. Reliability and convergent validity measures are displayed in Tables 5.4 and 5.5.

Table 5.4: Mobile shopping app constructs confirmatory factor analysis (means, standard deviations, factor loadings, AVE, CR and Cronbach's Alpha)

Antecedents/constructs	M	SD	Fact. load.	AVE	CR	Cronb. α
Trust						
Transactions via mobile shopping apps are safe	3.51	1.057	0.884	0.764	0.928	0.899
Privacy of mobile shopping app users is well protected	3.48	1.050	0.906			
Mobile shopping app transactions are reliable	3.57	0.983	0.872			
Security measures in mobile shopping apps are adequate	3.51	0.990	0.832			
Social influence						
Family/friends influence my decision to use mobile shopping apps	3.37	1.201	0.872	0.677	0.863	0.768
Media (TV, radio, newspapers) influence my decision to use mobile shopping apps	3.58	1.124	0.807			
I think I would be more ready to use the services of mobile shopping apps if they were used by people from my social circle	3.52	1.131	0.788			
Perceived usefulness						
Mobile shopping apps improves work performance	3.57	1.097	0.828	0.796	0.921	0.880
Mobile shopping apps improves productivity	3.65	1.066	0.952			
Mobile shopping apps improve efficiency	3.76	1.038	0.892			
Mobility						
Mobile shopping apps can be used anytime	4.09	0.976	0.898	0.754	0.924	0.897
Mobile shopping apps can be used anywhere	4.09	0.977	0.934			
Mobile shopping apps can be used while traveling	4.10	0.962	0.905			
Using mobile shopping apps are convenient because my phone is almost always at hand	4.13	0.991	0.719			
Perceived enjoyment						
Using mobile shopping apps is fun	3.83	0.983	0.902	0.799	0.923	0.889
Using mobile shopping apps is enjoyable	3.86	0.969	0.929			
Using mobile shopping apps is engaging	3.82	1.014	0.850			
Perceived ease of use						
Learning to use mobile shopping apps is easy for me	3.98	0.986	0.773	0.685	0.916	0.889
My interaction with mobile shopping apps does not require a lot of mental effort	3.90	1.014	0.882			
My interaction with mobile shopping apps is understandable.	3.95	0.934	0.873			
I can install mobile shopping apps with my existing applications without any conflicts	3.86	1.005	0.834			
Overall, I think mobile shopping apps are easy to use	4.00	0.975	0.770			
Involvement						
I am very interested in the products and services offered over the mobile phone	3.54	1.046	0.841	0.751	0.901	0.867
My level of involvement with the products and services offered over the mobile phone is high	3.40	1.082	0.900			
I am very involved with the mobile phone buying-selling environment	3.33	1.123	0.859			
Innovativeness						
If I hear about some new information technology (IT), I will seek out ways of experiencing it	3.50	1.139	0.873	0.782	0.915	0.876
I am usually the first among my friends to try out new IT	3.25	1.209	0.903			
I enjoy experiencing new IT	3.60	1.119	0.877			
Customer satisfaction						
I am quite satisfied with mobile shopping app services	3.75	0.987	0.864	0.818	0.931	0.901
Mobile shopping app services meet my expectations	3.72	1.000	0.942			
My experience with using mobile shopping apps is positive	3.82	1.000	0.906			

Cronbach's alpha is a reliability test technique that requires a single test to provide a unique estimate of the reliability of the test (Gliem & Gliem, 2003). For this study Cronbach's α ranged from 0.768 to 0.901 and CR values ranged from 0.863 to 0.931, reflecting an acceptable reliability

coefficient (refer to Table 5.4) which is above the acceptable test score of 0.7 (Nunnaly, 1978; Nunnally & Bernstein, 1994).

The attitudinal constructs' convergent validity was evaluated via factor loadings and average variance extracted (AVE). The AVE values ranged from 0.677 to 0.818, and the factor loadings values ranged from 0.719 to 0.942, which is indicative of convergent validity, as all values are higher than 0.5 (refer to Table 5.4) (Henseler et al., 2009; Hair et al., 2014; Dominguez & Mayrhofer, 2018).

Table 5.5: Component correlation matrix

Trust	**0.874**								
Social influence	0.399	**0.823**							
Perceived usefulness	0.483	0.337	**0.892**						
Mobility	0.353	0.229	0.272	**0.868**					
Perceived enjoyment	0.507	0.386	0.375	0.419	**0.894**				
Perceived ease of use	0.363	0.410	0.415	0.330	0.333	**0.828**			
Involvement	0.474	0.335	0.533	0.332	0.429	0.395	**0.867**		
Innovativeness	0.412	0.396	0.289	0.459	0.465	0.354	0.367	**0.885**	
Customer satisfaction	0.227	0.350	0.280	0.249	0.223	0.405	0.309	0.329	**0.905**

Discriminant validity was assessed by utilising the square root AVE for each construct, which must be larger than the correlations between the constructs. Table 5.5 reveals that each attitudinal construct AVE square root value is greater than correlation values, which is typical of discriminant validity (Hair et al., 2011; Hair et al., 2014).

5.6 Structural equation model (SEM) analysis

As recommended by Henseler et al. (2009) and Hair et al. (2014) the SEM goodness-of-fit statistics for this study resulted in a good overall measurement model fit: χ^2/df = 2.742; RMSEA = 0.018; NFI = 0.993; TLI/NNFI = 0.993; CFI = 0.996; GFI = 0.992; and SRMR = 0.016. A common method bias test compared the unconstrained common method factor model to the fully constrained/zero constrained common method factor model, and the chi-square test revealed a significant different at $p < 0.001$. Therefore, there was significant shared variance, which led to the retention of the unconstrained CMF model. A Cook's Distance test found that there was no record, which exhibited abnormal Cook's Distance, so all of the records were retained.

Table 5.6: Multi-collinearity statistics

	Tolerance	VIF
Trust	0.580	1.724
Social influence	0.541	1.848
Perceived usefulness	0.519	1.927
Mobility	0.472	2.120
Perceived enjoyment	0.467	2.143
Perceived ease of use	0.499	2.003
Involvement	0.512	1.952
Innovativeness	0.571	1.752

The SEM attitudinal constructs were assessed via a multi-collinearity test to establish whether the scales were too correlated to one another, which may unfavourably affect the reliability of the regression coefficients. The attitudinal constructs tolerance ranged from 0.467 to 0.580 (greater than 0.1) and the variation inflation factors (VIF) ranged from 1.724 to 2.143 (less than 5), which indicates that there is a moderate correlation between the constructs (Daoud, 2017). The constructs collinearity statistics can be referred to in Table 5.6.

5.7 Hypothesis testing

Structural equation modelling (SEM) was utilised to test the attitudinal scale hypothesised relationships. The SEM analysis standardised path beta coefficients (β), significance (p) and variance are depicted in Figure 5.24.

H1: Trust $\rightarrow$ customer satisfaction

The standardized path coefficients exhibited a significant favourable effect for the trust $\rightarrow$ customer satisfaction association ($\beta = 0.158$, $p < 0.001$). Hence, H1 was supported (refer to Figure 5.24 and Table 5.7). Furthermore, trust explained 51.6% of customer satisfaction variance among South African Millennials with regard to mobile shopping apps.

H2: Social influence $\rightarrow$ customer satisfaction

The standardized path coefficients showed a significant negative effect for the social influence $\rightarrow$ customer satisfaction relationship ($\beta = -0.098$, $p < 0.001$). Accordingly, H2 was supported (refer to Figure 5.24 and Table 5.7). Additionally, social influence explained 51.6% of customer satisfaction variance among South African Millennials owing to mobile shopping apps.

H3: Perceived usefulness $\rightarrow$ customer satisfaction

The standardized path coefficients did not display a significant effect for the perceived usefulness $\rightarrow$ customer satisfaction association ($\beta = 0.018$). Therefore, H3 was rejected (refer to Figure 5.24

and Table 5.7). Perceived usefulness explained 51.6% of customer satisfaction variance among South African Millennials with regard to mobile shopping apps.

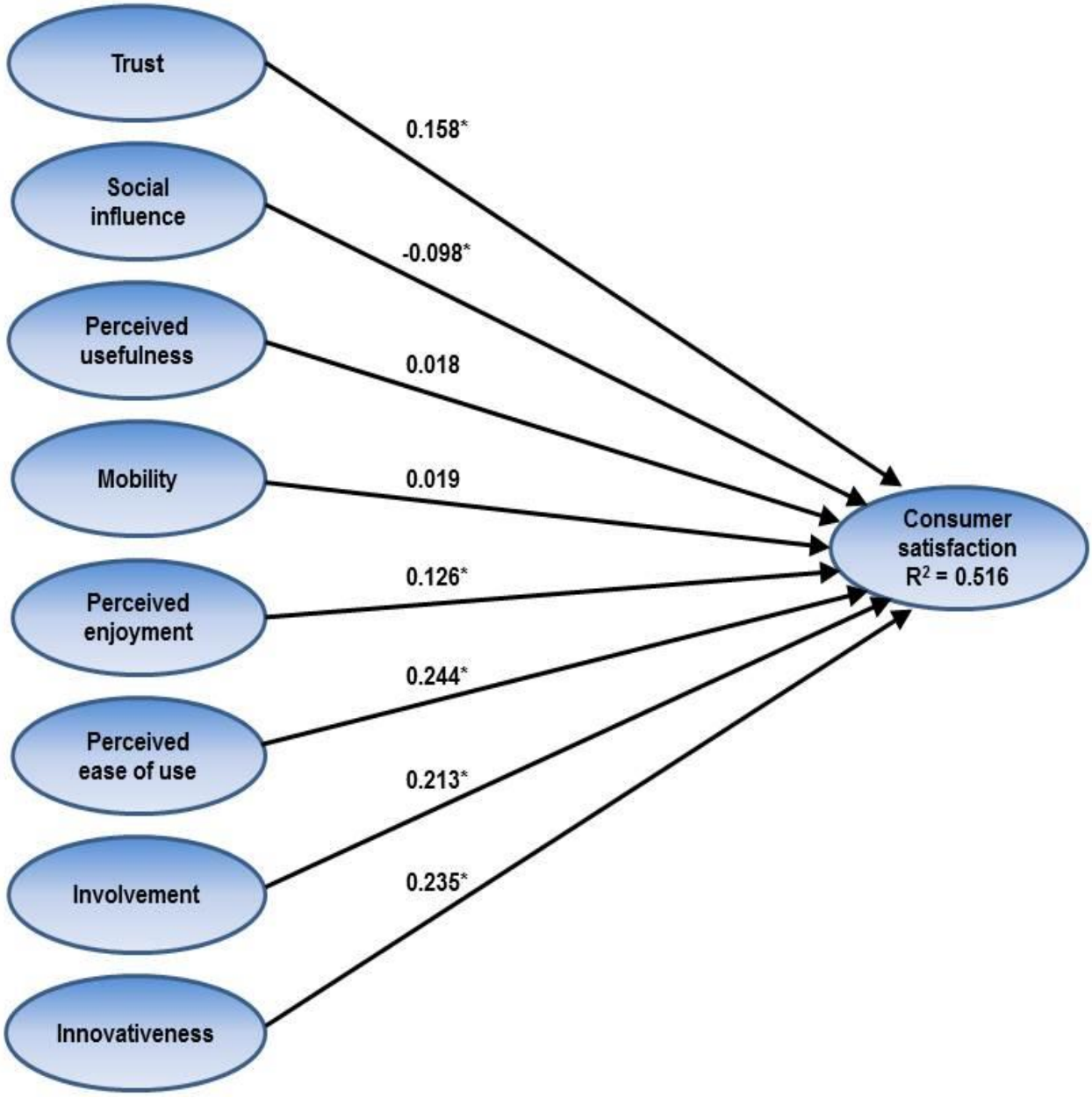

Figure 5.24: SEM analysis

*p < 0.001

H4: Mobility → customer satisfaction

The standardized path coefficients did not display a significant effect for the Mobility → customer satisfaction connection (β = 0.019). Hence, H4 was rejected (refer to Figure 5.24 and Table 5.7). Mobility explained 51.6% of customer satisfaction variance among South African Millennials with regard to mobile shopping apps.

H5: Perceived enjoyment → customer satisfaction

The standardized path coefficients exhibited a significant favourable effect for the perceived enjoyment → customer satisfaction relationship ($\beta = 0.126$, $p < 0.001$). H5 was supported (refer to Figure 5.24 and Table 5.7). Thereby, perceived enjoyment explained 51.6% of customer satisfaction variance among South African Millennials with regard to mobile shopping apps.

H6: Perceived ease of use → customer satisfaction

The standardized path coefficients exhibited a significant favourable effect for the perceived ease of use → customer satisfaction association ($\beta = 0.244$, $p < 0.001$). Hence, H6 was supported (refer to Figure 5.24 and Table 5.7). Thus, perceived ease of use explained 51.6% of customer satisfaction variance among South African Millennials with regard to mobile shopping apps.

H7: Involvement → customer satisfaction

The standardized path coefficients showed a significant favourable effect for involvement → customer satisfaction connection ($\beta = 0.213$, $p < 0.001$). As a result, H7 was supported (refer to Figure 5.24 and Table 5.7). Moreover, involvement explained 51.6% of customer satisfaction variance among South African Millennials owing to mobile shopping apps.

H8: Innovativeness → customer satisfaction

The standardized path coefficients showed a significant favourable effect for innovativeness → customer satisfaction association ($\beta = 0.235$, $p < 0.001$). H8 was supported (refer to Figure 5.24 and Table 5.7). In addition, innovativeness explained 51.6% of customer satisfaction variance among South African Millennials owing to mobile shopping apps.

Table 5.7: Hypotheses

Hypotheses	Significance	Support
H1	p<0.001	Yes
H2	p<0.001	Yes
H3	-	No
H4	-	No
H5	p<0.001	Yes
H6	p<0.001	Yes
H7	p<0.001	Yes
H8	p<0.001	Yes

5.8 Customer satisfaction attitude constructs

A generalised linear model (GLM), using the Wald Chi-Square measure revealed a significant difference at $p < 0.001$ for the customer satisfaction construct ($M = 3.76$, $SD = 0.910$) because of mobile shopping app usage.

5.9 Influence of usage and demographics variables on customer satisfaction attitudinal responses/perception

The Bonferroni pairwise correction post hoc measures were used to ascertain if there were significant differences between the respondents' usage and demographic characteristics, which either had a favourable effect on Generation Y customer satisfaction as a result of mobile shopping apps.

Table 5.8: Influence of usage and demographic variables on customer satisfaction attitudinal responses

	Sig
Mobile shopping app categories (most engaged)	0.003**
Device access	0.001*
Length of usage	0.000*
Mobile shopping engagement	0.000*
Usage hours	0.859
Marketing communication response	0.007**
Mobile shopping app spending	0.000*
Gender	0.371
Age	0.006**
Education level	0.034**

Employment status	0.000*
Population group	0.650

* $p < 0.001$

** $p < 0.05$

Table 5.8 shows the GLM tests of model effects regarding Wald Chi Square measures and Bonferroni pairwise correction post hoc measures regarding the influence of usage and demographic variables on the customer satisfaction/consumer attitude construct, which revealed significant differences between the independent variables:

Mobile shopping app categories (most engaged) ($p < 0.05$): Respondents who used mobile banking (M = 3.80, SE = 0.037) and e-hailing taxi services (M = 3.79, SE = 0.042) exhibited more positive customer satisfaction attitudinal responses compared to retail stores (M = 3.64, SE = 0.050) mobile shopping apps.

Access ($p < 0.001$): Respondents who accessed mobile shopping apps via tablets (M = 3.76, SE = 0.046) and smartphones (M = 3.76, SE = 0.036) showed more favourable customer satisfaction attitudinal responses compared to those who accessed through feature phones (M= 3.56, SE = 0.054).

Length of usage ($p < 0.001$): Millennials who used mobile shopping apps for less than one year (M = 3.56, SE = 0.047), 2 years (M = 3.56, SE = 0.045), and 3 years (M = 3.66, SE = 0.046) showed less favourable customer satisfaction attitudinal responses compared to those who used mobile shopping apps for 4 years (M= 3.83, SE = 0.052) and 5 years (M = 3.83, SE = 0.050).

Mobile shopping engagement ($p < 0.001$): Respondents who engage in mobile shopping apps sometimes (M = 3.72, SE = 0.045), often (M = 3.77, SE = 0.045), and always (M = 3.79, SE = 0.049) showed more favourable customer satisfaction attitudinal responses compared to those who rarely engage in mobile shopping apps (M = 3.54, SE = 0.051).

Marketing communication response ($p < 0.05$): Respondents who often (M = 3.77, SE = 0.051) and sometimes (M = 3.74, SE = 0.043) responded to marketing commination through mobile shopping apps exhibited more positive customer satisfaction attitudinal responses compared to those who never (M = 3.61, SE = 0.048) responded to marketing communication via mobile shopping apps.

Mobile shopping app spending ($p < 0.001$): Respondents who spent between R2 001 to R3 000 per month (M = 3.83, SE = 0.049) via mobile shopping apps showed more favourable customer

satisfaction attitudinal responses compared to those who spent between R1 001 to R2 000 (M= 3.67, SE = 0.043), and less than R1 000 (M= 3.61, SE = 0.043) per month.

Age ($p < 0.05$): 28 - 32 year old respondents (M = 3.66, SE = 0.046) showed less favourable customer satisfaction attitudinal responses compared to 18 - 22 year old respondents (M = 3.78, SE = 0.044).

Education level ($p < 0.05$): Respondents who had a post-graduate degree (M = 3.79, SE = 0.050), post-matric/diploma or certificate (M = 3.75, SE = 0.043), and a degree (M = 3.74, SE = 0.047) displayed more positive customer satisfaction attitudinal responses compared to those who had Grade 8 - 11 (M = 3.60, SE = 0.069).

Employment status ($p < 0.001$): Less favourable customer satisfaction attitudinal responses were evident among respondents who were unemployed (M = 3.63, SE = 0.045) compared to those who were self-employed (M = 3.80, SE = 0.053), employed full-time (M= 3.77, SE = 0.041), and employed part-time (M= 3.73, SE = 0.046).

5.10 Summary

In this chapter, the researcher focused on reporting the empirical findings of the study. A description of each of the usage characteristics and demographic factors of this research were included in this chapter, as were the reliability and validity of the research measurement tool. A factor analysis was also conducted for exploratory reasons in order to determine the factorability of the data, using statistical measures such as factor loadings, AVE, CR and Cronbach's Alpha. Subsequently, descriptive statistics were calculated on the research data set. The descriptive statistics included reporting on the mean, standard deviation, and standard error. Structural equation modelling (SEM) was utilised to test the attitudinal scale of customer satisfaction and hypothesised relationships. From the hypotheses antecedents, the standardized regression weights, i.e. Beta values (β), showed that trust, social influence, perceived enjoyment, perceived ease of use, involvement, and innovativeness were supported. Furthermore, trust, perceived enjoyment, perceived ease of use, involvement, and innovativeness antecedents had a positive effect on customer satisfaction. However, the social influence antecedent showed a significant negative relationship with customer satisfaction, whereas perceived usefulness and mobility did not show any significant effect on customer satisfaction. A generalised linear model (GLM) using the Wald Chi-Square test was also employed to determine the significant differences regarding the respondents' usage and demographic variables, which both had a favourable effect on Generation Y customer satisfaction. The Bonferroni pairwise correction post hoc measure was used to show where the significant differences were located in the independent variables. Significant differences

were found between mobile shopping app categories (most engaged), device access, length of usage, mobile shopping engagement, marketing communication response, and mobile shopping app spending. Demographic variables such as age, education, and employment also displayed significant differences.

CHAPTER 6
DISCUSSION, LIMITATIONS, DIRECTIONS FOR FUTURE RESEARCH, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

Businesses have not ignored the growth of mobile apps and the opportunity they bring as an additional channel to serve customers with products or services. Mobile commerce has made a global economic impact; in the US more than 20% of smartphone users will buy food via a mobile app, and usage has been estimated to approach around 50 million users by 2021 (eMarketer, 2019). This chapter gives a detailed outline of the findings and shows the interrelationships that were discussed in prior chapters. A thorough discussion that includes the statistical outcomes, literature association, as well as the researcher's insights are presented. Outcomes for each construct of the model will be discussed together with relevant literature based on results of each antecedent. Results of the generalised linear model (GLM) and the Wald Chi-Square test will be discussed, including relevant literature and the researcher's own insights based on his own reasoning of the usage and demographic factor outcomes. Limitations and directions for future research will be discussed. Conclusions and recommendations will also be discussed based on literature and managerial implications of the results of this study.

6.2 Consumer attitudes

The first objective of this study was to validate antecedents versus customer satisfaction, within mobile commerce, as set out in the conceptual research model. Several studies have been conducted in the past focusing on each of the hypothesised constructs; these studies will be compared with the findings of the results of this current research.

6.2.1 Trust → customer satisfaction

There was a significant difference between the respondents, in that mobile shopping apps resulted in a positive trust → customer satisfaction association. The results are in agreement with some studies such as Al-Debei et al. (2015) that examined consumer attitudes toward online shopping in Jordan. An integrated model is introduced in the paper, which includes trust, perceived benefits, perceived web quality, and electronic word of mouth along with their interrelationships, and their effects on consumer attitudes toward online shopping are examined. The study used a survey as a data collection tool, and the sample consisted of 273 online shoppers in Jordan. The results suggest that attitudes toward online shopping are determined by trust and perceived benefits.

Similarity in results of the abovementioned studies might be influenced by the fact that both studies were conducted among shoppers from developing countries. Ibrahim and Wadlid (2014) investigated the trust-influencing factors of mobile app learning among 297 university students in Malaysia. The study used a survey to collect primary research data. It showed that the main trust-building factor that influence users to trust mobile app learning were information, familiarity, interaction, third party recognition, attractive reward, feasibility, quality, goal setting, and rules. These results are similar to those of the current study; because the current research also focused on Generation Y. Salih (2017) conducted a study among 145 public sector officials in the Sudanese government who used mobile devices. The objective was to investigate the security barriers and challenges facing the adoption of mobile commerce in Sudan. The results affirm that the perceived risk of transacting through mobile commerce is negatively correlated with mobile commerce adoption. Researchers such as Mallat (2007) examined adoption of mobile payment, and found that there were several obstacles to the adoption of mobile payments. These barriers included premium pricing, complex payment procedures, perceived risks, and a lack of bank acceptance. Perceived risk or trust can also be seen as a barrier because of the nature of its influence on continuance usage intention as seen in the abovementioned studies.

A study by Shaw (2014) aimed to validate the mediating influence in the adoption of the mobile wallet channel. The study was a quantitative data collection method (survey), and the sample consisted of 284 students from a university in Canada. The results confirm that trust positively influences intention to use a mobile wallet. Perceived usefulness also positively influences intention to use a mobile wallet. These results are similar to the current study, because the target groups (i.e. Generation Y) of these studies were similar. An investigation by Arcand et al. (2017) focused on the multidimensional concept of mobile banking service quality and the impact service quality has on the quality of the relationship (commitment, trust and satisfaction) between consumers and mobile banking brands. The study followed a quantitative data collection approach where a survey was used to collect data. The total sample size amounted to 375 mobile banking customers in Canada. The results indicate that trust significantly and positively influences commitment or satisfaction with mobile banking apps. Although these results are from a study set in a developed country, they are similar to the current study since mobile banking has been a global phenomenon for a number of years and results should be consistent across different markets.

Boonsiritomachai and Pitchayadejanant (2017) explored the determinants affecting the adoption of mobile banking services among Generation Y consumers in Thailand. The research used a survey as a method of data collection. The sample included 480 university students in Thailand. The results of the study show that mobile banking system security concerns had a negative relationship with the willingness to adopt mobile banking services. This result is in agreement with this current

study because if a consumer has a negative experience or attitude towards mobile commerce services they are bound to have a negative relationship. A study by Moodley (2011) was conducted among 150 mobile users at a university campus, and on social media networks using a quantitative approach (survey). Primary objectives included to determine if mobile retailers engaged with mobile consumers using push and pull location-based services would grow trust and the intention to transact in m-commerce. The results suggest that using push and pull location-based services would increase the trust and the intention to transact in m-commerce. This result is in line with the philosophy of trust towards mobile commerce, which was methodologically executed similarly in the current study. Verkijika (2018) published a study with the objective of determining the key factors that influence mobile users' adoption of m-commerce apps in Cameroon. The study used a survey to collect data among 372 mobile phone users. The results showed that perceived trust, perceived risk, social influence, facilitating conditions, and hedonic motivations were significant predictors of the behavioural intention to adopt m-commerce apps. These results are insightful for this study as it is essential to understand consumers' general willingness to engage in digital commerce channels.

Some authors also focused on understanding the influence trust has on customer satisfaction with the context of digital commerce. Masrek et al. (2014) investigated the relationship between mobile banking app usage satisfaction and trust. The sample for this study included 312 mobile banking app users in Malaysia. The data collection method used for this study is a survey. They ascertained that trust has a positive relationship with mobile banking satisfaction. This finding supports the findings of the current study, as a result of similarity in research philosophy and execution. The main objective of a study by Eid (2011) was to ascertain the factors that influence the extent to which consumers trust, are satisfied with, and are loyal towards e-commerce. The sample for this study consisted of 235 tertiary students and the public in Saudi Arabia. Data was collected using a self-administered questionnaire. The results of this research indicate that e-commerce customer loyalty in Saudi Arabia is strongly influenced by customer satisfaction, but weakly influenced by customer trust.

Bilgihan (2016) published a research study that had as its primary objective to develop and test a detailed model that explained how Generation Y develops loyalty to a booking website for a hotel in US. An online survey was distributed among Generation Y university students in the US and 242 complete responses were received. The research findings suggest that trust is the most important antecedent of e-loyalty in online shopping among Generation Y customers. The objective of a research paper by Kassim and Abdullah (2010) was to empirically investigate the relationship customer satisfaction has with trust, and loyalty within e-commerce. The study used a quantitative approach using a survey to collect data among 600 shoppers in Malaysia and Qatar. It was found that trust had a significant effect on customer satisfaction. Although the three aforementioned

studies focused on customer loyalty and not specifically customer satisfaction, the results are in agreement with the result of the current study since customer satisfaction ultimately was found to lead to customer loyalty. A study by Lee and Wong (2016) hypothesised that there is a positive significant relationship between trust and customer satisfaction in m-commerce. The study used a quantitative approach, using an online survey to collect data. The sample consisted of Malaysian mobile shopping users, with a sample size of 214 respondents. The study found that there is a positive significant relationship between trust and customer satisfaction in m-commerce. This result is in line with the current study because they focused on a similar target group (mobile shoppers).

A study by Marinkovic and Kalinic (2017) among 224 customers (aged between 18-45 years old) who use one of three mobile network operators in Serbia. The data was collected using self-completed paper questionnaires. Their research findings suggest that mobility, perceived usefulness, perceived enjoyment, and trust are significant drivers of customer satisfaction. The results of this study are in agreement with the current study, since it was also executed using a similar methodology. Aguilar-Illescas et al. (2020) conducted a study with the aim to understand customer satisfaction with the consumer-to-consumer mobile commerce apps for selling and purchasing used products. Their data for this study was collected using a quantitative method where an online questionnaire was distributed, and completed by mobile commerce users in Spain. The findings of this study indicate that trust is one of the significant influential factors towards customer satisfaction. The findings of this study are aligned to those of this study because both studies targeted a very similar response group (mobile retail app users).

The above results indicate that trust is an essential determining or influential antecedent when it comes to consumer attitudinal responses, although not directly related to customer satisfaction with mobile commerce. Thus, m-commerce vendors should endeavour to increase their customers' level of trust to build and maintain customer loyalty and satisfaction.

6.2.2 Social influence → customer satisfaction

There was a noteworthy difference between the respondents, in that mobile shopping apps resulted in a negative social influence → customer satisfaction relationship. Kulviwat et al. (2009) examined the role social influence has, and whether it has a moderating effect on consumers' intended adoption of high-tech innovations. This research is quantitative in nature and conducted among 260 university students in the US. They found that adoption attitude and social influence have a positive effect on consumers' intent to adopt a technological innovation. This result differs with this current study's findings since it was conducted among Generation Y members who have a similar technological behaviour globally regardless of geographic location. Alalwan (2020)

published a paper that identified and empirically examined the main factors predicting the e-satisfaction with mobile food ordering apps and customers' intention to use such apps again. A quantitative approach was followed for the collection of data in that a survey was completed by a sample of 337 Jordanian customers. The findings failed to confirm the role of social influence in predicting e-satisfaction and continued intention to reuse mobile food ordering apps. These findings contradict the current study's results because of a different market in which the research was conducted, and the sample size compared to the current study.

Carter and Yeo (2016) used constructs from the Theory of Planned Behaviour and construct variables from existing literature, as a basis to establish similarities and differences among undergraduate and postgraduate users of mobile apps. The study used a semi-structured questionnaire to gather the data, and included a sample size of 40 Malaysian students. The findings highlighted that there are more similarities than dissimilarities in terms of perceived attitude, for instance mood, ethical guilt, addiction, and familiarity. However, the investigations also found that there were more differences in perceived subjective norms such as family, friends, classmates and teammates. The results are in line with the result in the current study, since the type of social influence for consumers would differ based on the immediate society of specific consumers and their social circles. A study by Lòpez-Nicola´s et al. (2008) hypothesised that social influence positively influences customers' attitudes to mobile technological innovations. The sample consisted of 543 Dutch consumers and followed a quantitative data collection approach using surveys. They found that social factors have an influence on people's decisions to adopt mobile services. Relatives and friends have a significant impact in this regard. Malhotra and Galleta (1999) conducted a study that aimed at explaining factors that drive the adoption of new information technologies. The study surveyed 239 students in the US and used a quantitative data collection methodology. Their findings suggest that social influences have a positive effect in determining the usage behaviour and the acceptance of new adopters of new information technologies. As opposed to the current study, social influence is seen as an influential factor in determining consumer attitudes to technological innovations.

Singh et al. (2020) developed a conceptual model to determine the factors influencing user's satisfaction, intention and recommendation to use mobile wallet services. The study used a quantitative approach (online survey) and polled a sample of 206 consumers in India. The study found that pressure to use and social influence have a significant moderating effect on consumer's satisfaction and recommendation to mobile wallet services. The outcome of this study contradicts the result of the current study. Slade et al. (2015) applied a model called Unified Theory of Acceptance and Use of Technology to their study, to explore the factors affecting non-users' intentions to adopt mobile payment services in the United Kingdom. The research used a

quantitative approaching (survey instrument), among a sample size of 268 British consumers. The study found that variables such as social influence, performance expectancy, perceived risk, and innovativeness significantly influence intentions to adopt mobile payment services. It was found that mobile payment service knowledge is a moderating variable in that there is a significant difference in the influence of trust on behavioural intention to adopt for those who know about mobile payment services. Although focusing on the adoption of mobile commerce technologies, the result of the abovementioned study contrasts with the result of the current study.

Lu (2014) conducted a study investigating the impact of personal innovativeness in information technology and social influence on users' continuance intention toward mobile commerce. The research was done among 376 university students at a regional university in the US. A quantitative data collection methodology was followed. The study found that social influence affects continuance intention. Further, user personal innovativeness as measured by personal innovativeness in information technology and perceived usefulness are strong determinants of user continuance intention. These findings do not support the result of the current study, since in this study social influence has been found to be a negative influential factor towards consumer attitudes within mobile commerce.

Ruiz-Mafe et al. (2016) investigated the role and impact of emotions and social influences on loyalty formation towards online travel platforms. The data collection methodology for this study was quantitative in nature. The study was conducted among 385 active users of online travel platforms in Spain. They found that subjective norms and social presence (feeling the presence of other travel community members) boost positive emotions towards online travel platforms. This result is not in line with the result of this current study in that positive post-purchase experiences of individuals within one's social circle would result in positive referrals of services or products, thereby influencing one's own emotions towards vendors. The objective of a study by San-Martín et al. (2016) was to determine the determinants of mobile shoppers' word of mouth. The study explored the issue of word of mouth about mobile shopping, including activities conducted by consumers using the internet to make a purchase. The research was conducted among 447 Spanish mobile phone buyers and followed a quantitative data collection methodology. The study found that control over the process, shopping experience, group influence, and satisfaction with mobile purchasing affect subsequent word of mouth mobile shopping recommendations. However, the study examined different consumer behavioural responses compared to the current study. These results from the two abovementioned studies are not in agreement with the finding of the current study because social influence was found to be a negative influence towards consumer attitudinal responses.

The above results vary in outcomes as they vary in execution and characteristics, for example numerous studies were conducted in developing markets and some in developed markets; they also vary in research methodologies, sample size, and industry focus. Chalomba et al. (2019) examined the influential factors affecting post-adoption satisfaction, the intention to continue using, and loyalty to mobile app businesses. A questionnaire was used to collect data, and 406 completed questionnaires were received back from Generation Y mobile app users in South Africa. This study found that among users of branded mobile apps, social value results in a negative impact on continuance intention. This result confirms the hypothesis of this current study, which can be explained by the fact that both studies focused on a target group of the same market where behaviours are bound to be similar. Results of a study by Tam et al. (2020) confirm that social influence does not significantly influence the continuance intention towards using mobile apps. Their study aimed to confirm which factors influenced the continuance intention among 304 mobile app users in Portugal.

The findings regarding the negative role social influence has on customer satisfaction with mobile shopping apps can be explained by the fact that the South African Millennial consumers are the first generation to be fully exposed to technological advancements, hence minimal social influence would exist as they regard themselves as a technologically savvy generation themselves. Unlike other markets which have had technological advancements prior to the South African market, consumers in those markets are more influenced socially as the majority of consumers have been exposed to the latest technologies, even the older generation of consumers. Some authors who have focused on different industries within the digital commerce space, have had smaller samples compared to the current study, focusing on different consumer attitudinal measures, or used different research methodologies to execute their studies, hence the varying findings. Although the findings of other authors are directly related to the influence of social influence on customer satisfaction in mobile shopping, these authors also considered the effect of social influence in the adoption of new technologies, namely mobile commerce apps.

6.2.3 Perceived usefulness → customer satisfaction

There was no significant difference between the respondents, and mobile shopping apps did not result in a positive perceived usefulness → customer satisfaction relationship. A number of researchers have published findings related to the perceived usefulness construct: Elhajjar and Ouaida (2019) developed a conceptual model that explains the most essential factors influencing mobile banking adoption. The study had a sample size of 320 Lebanese banking customers, and it followed a quantitative approach. Perceived usefulness, ease of use, perceived resistance to change, perceived risk, and digital literacy were found to be the main drivers of users' attitudes

toward adoption of mobile banking, while compatibility and awareness showed no significant impact on mobile banking adoption. A recent study by Li and Fang (2019) investigated the drivers of continuance intention toward mobile branded apps. The study had a sample size of 497 Chinese MyStarbucks users. It was found that the brand attachment–satisfaction relationship for both these factors positively influenced continuance intention. Expectation confirmation also influenced brand attachment and perceived usefulness. Moreover, perceived usefulness influenced continuance intention directly or indirectly through customer satisfaction. The two aforementioned studies differ with the result of this study, which can be explained by the fact that they did not have similar objectives compared to this study, since perceived usefulness was an influential factor towards customer attitudes within mobile commerce apps in a different context.

Rezaei and Valaei (2017) interviewed consumers in Malaysia, and they studied the impact of experiential value, post-usage usefulness, and mobile app satisfaction on consumers' repeat usage intention of mobile retail apps for shopping activities. The data collection method used for this study was via a survey measurement tool. The sample included 467 smartphone app shoppers in Malaysia. The study shows that all their direct hypotheses between constructs were supported. They further suggested that experiential value partly mediated the relationship between post-usage usefulness and mobile app satisfaction. Munoz-Leiva et al. (2017) studied the beliefs and behavioural variables that influence the use of mobile banking apps. An online survey was used to collect data, and the sample consisted of 103 online banking users in Spain. They found that there was a positive influence of ease of use on the usefulness of mobile banking apps. Lu et al. (2015) investigated factors that could affect mobile travel app adoption among tourists in China. The sample for this study consisted of 613 tourist smartphone user in China. A survey was used to collect the primary data. They indicate that perceived ease of use, perceived usefulness, and compatibility are antecedents of the intent to use mobile travel apps. The results of the three aforementioned studies are in contrast to the result of the current study. This is a result of a difference in the markets studied (developed), compared to that of this current study (developing).

The objective of Suki (2011) is to give an overview of antecedents of trust and customer satisfaction with mobile commerce (m-commerce) vendors. This study followed a quantitative data collection methodology and a sample consisting of 200 respondents in Malaysia. Results confirm that customer satisfaction with m-commerce vendors are not affected significantly by factors of the vendor's website quality: customisation and interactivity, and mobile technology quality, which encompasses perceived usefulness and perceived ease-of-use. This result is in agreement with the current study since perceived usefulness is not seen as influencing factor with regard to an online vendor's online website quality. The reason for the validation is the fact that the two studies are similar in nature in that they included similar target research groups (mobile commerce users).

Dai and Palvia et al. (2009) conducted a study among 190 mobile commerce users in China and US using a quantitative data collection method and found that perceived usefulness and perceived ease of use have a significant impact on consumers' intent to use m-commerce. They also found that in the US factors such as innovativeness, perceived usefulness, consumer privacy, compatibility, and perceived enjoyment are highlighted as influencing intentions to use. This finding contradicts the results of the current study since perceived usefulness plays an important role in determining consumer attitudes to mobile commerce users. This result can be explained by the fact that these two studies were conducted in two different markets (developed vs developing), and are bound to have different behaviours. Suryo Guritno and Siringoringo (2013) conducted a study to measure the influence of perceived ease of use and usefulness on attitudes to the usage of the online channel for purchasing airline tickets among 283 Internet users in the US. The research followed a quantitative data collection approach using surveys. The study proved that perceived usefulness influences attitudes to usability of airline ticket reservation significantly more than perceived ease of use or trust. The result of this study is in contrast with the current study, but remains valid, because the current study focused on a different industry (online shopping). ul Hassan et al. (2014) investigated determinants that influence the intention to use smartphone apps; these included perceived ease of use, perceived usefulness, perceived enjoyment, and social influence. The study followed a quantitative data collection approach where a survey instrument was used, and the sample consisted of 263 university students in Pakistan. They found that usage of smartphones apps is influenced by perceived ease of use, perceived usefulness, and social influence. Findings of this study differ from the current study, and this result can be explained by the fact that the target group were not similar, since the comparison study studied general mobile app users, and the current study considered mobile shopping users only.

Davis (1989) developed and validated new scales related to two perceived usefulness and perceived ease of use, hypothesized to be determinants of technology user acceptance. A quantitative research approach was adopted for this research and the sample consisted of 152 experienced computer users in the US. The research found that perceived usefulness had a more significant correlation with usage behaviour than perceived ease of use. This finding is not in line with the result of the current study. This is because the former study focused on a market that has long been developed, compared to the developing market in which this current study was based.

These findings are not directly related to the influence of perceived usefulness towards customer satisfaction in mobile shopping apps, but are related to the adoption of mobile apps. Mobile adoption is the first step to using a mobile app before satisfaction levels can be measured; the aforementioned studies divergent results might be because they focused on different industries

within the digital commerce space, used smaller samples and different research methodologies and/or focused on several different consumer attitudinal measures/models.

6.2.4 Mobility → customer satisfaction

There was no significant difference between the respondents, in that mobile shopping apps did not result in a favourable mobility construct → customer satisfaction affiliation. The mobility antecedent and its effect on customer attitudes has also been reported on by several authors such as a study by Lu et al. (2016) that investigated how perceived mobility and perceived enjoyment drive user intention to continue using mobile applications. A survey was utilised to collect data among a voluntarily sample of 584 users of smartphone mobile apps in the US. Results indicate that perceived mobility and perceived enjoyment are primary drivers of the changes in users' attitude and satisfaction regarding intention to continue using mobile apps. The main objective of a study by Marinkovic and Kalinic (2017) was to determine drivers of customer satisfaction in mobile commerce that are statistically significant. The sample size comprised 224 Serbian local mobile network clients. The study adopted a quantitative research approach, collecting data using a questionnaire. The study found that usefulness, trust, perceived enjoyment, and perceived mobility were concluded to be noteworthy influencing factors towards customer satisfaction in m-commerce. The results of the two-abovementioned studies are not in agreement with this study. This difference is a result of the difference in the markets being studied, in that the current study is conducted within a developing market, and the two-abovementioned studies are focusing on consumers from developed markets.

Yen and Wu (2016) assessed antecedents that influence continued usage intention in mobile financial services. They proposed a model that includes three external antecedents, namely perceived mobility, perceived enjoyment, and personal habit in the Technology Acceptance Model. A survey was utilised for data collection in this study. The sample consisted of 386 mobile financial services users in Taiwan. Findings reveal that perceived mobility, personal habit, perceived usefulness, and perceived ease of use positively influence continued usage intention in mobile financial services. This result contradicts the current study's result. This difference is because consumers from Taiwan have better adoption rates, thus leading to these consumers to appreciate the services. Schierz et al. (2010) developed and tested a conceptual model in order to uncover which factors influence the acceptance of mobile payment services. The sample for the study included 1447 experienced mobile app users in Germany. The study collected the primary data using a survey. They found that factors such as individual mobility, compatibility, and subjective norms influenced the acceptance of mobile payment services the most. This finding is opposed to the result of the current study. This result can be attributed to the difference in target market user

characteristics, in that the above-mentioned study targeted experienced mobile app users in general, and the current study focuses exclusively on Generation Y mobile shopping users.

Barutçu et al. (2015) published a paper that assessed the drivers of customer satisfaction in mobile shopping among Turkish student mobile shoppers. A survey was utilised to gather the primary data, and the sample consisted of 245 Turkish students. The study had the mobility construct as one of the drivers, and they found mobility is not a significant driver of customer satisfaction with mobile shopping apps. This finding is in agreement with the current study. The reason is partly that both the current study and the abovementioned conducted research targeted specifically at mobile shoppers. The main purpose of Huang et al. (2007) was to propose and verify that mobile learning acceptance can be used to clarify and predict the use of technologies using the Technology Acceptance Model. Perceived enjoyment and perceived mobility value are identified as two factors that account for individual differences in the research model. Primary data was collected using an online survey. A sample of 313 students in two Taiwan universities participated in the study. Overall results of the study show that consumers held positive attitudes to mobile learning, viewing it as an effective tool. Individual differences were found to have an impact on users' acceptance, and the two constructs, perceived enjoyment and perceived mobility, can predict users' intentions of adopting mobile learning. This result contradicts the finding of this current study due to the various possibilities such as the difference in sample size, and the difference in mobile app category might be another cause for this contradiction.

The aim of a study by Zmijewska et al. (2004) was to find out what drives the user acceptance of a new information technology system, particularly mobile payment systems. The study followed a qualitative data collection approach where literature research was used to analyse the findings. The result of the study concluded that tested constructs (perceived mobility, perceived usefulness, perceived ease of use, cost, trust, and expressiveness) influence the user acceptance of mobile payments. This is not in support of the result of the current study. The difference in results can be attributed to fact that the abovementioned study followed a qualitative research methodology, whereas the current study used a quantitative approach. Nikou and Economides (2015) investigated the impact perceived mobility, perceived usefulness, perceived ease of use, and satisfaction on students' behavioural attitudes to mobile-based assessment. The study followed a quantitative data collection approach, and surveys were used and completed by 47 secondary school students in Greece. Findings indicate that perceived usefulness, perceived mobility, perceived ease of use, and satisfaction are significant determining factors of behavioural intention to use mobile-based assessment. This result contradicts the current study. This contradiction can be attributed to the difference in countries; the aforementioned study was conducted in a developed country where technological advancements are a norm and customer are already used

to the their benefits, while the current study was conducted in a developing country where users are still becoming more familiar with the benefits of such technologies.

The background theory of a study by Mallat et al. (2006) was drawn from acceptance of technology and innovation theories, which were combined with perceived usefulness, as well as perceived mobility constructs. The study used a survey as a data collection tool. The sample consisted of 360 outer city residents in Helsinki, Finland. The results suggest that perceived usefulness, perceived mobility, and benefits of mobile ticketing services have a significant effect on intention to use mobile ticketing services. The findings of the above study are not in support of the current study's findings. The difference in results can be explained by the fact that these studies focused on different consumer attitudinal measures.

Generally, the difference in results for studies that contradict the current study might be due to smaller sample sizes, different attitudinal measures, being conducted in developed markets, and their focusing on divergent mobile app categories/industries.

6.2.5 Perceived enjoyment → customer satisfaction

There was a significant difference between the respondents, in that mobile shopping apps resulted in a positive perceived enjoyment → customer satisfaction connection. Some authors have also examined the impact perceived enjoyment attitude has on mobile devices, although not directly related to customer satisfaction with mobile shopping apps. Pipitwanichakarn and Wongtada (2019) investigated the role of perceived enjoyment and trust in the Technology Acceptance Model by distinguishing distinct stages of adoption. The study collected primary data through a structured questionnaire where 415 street vendors were interviewed in Thailand. The study had two distinct street vendor groups, and the results show significant similarities and dissimilarities among them. It was found that one of the two distinct groups is influenced by perceived enjoyment and perceived ease in the adoption of m-commerce. This result is in line with the current study.

Alalwan et al. (2018) conducted a study in Saudi Arabia in the hope of further understanding the adoption of mobile internet. The study used a survey to collect data from 357 respondents in major cities. They found that the perceived enjoyment construct had a positive impact on Saudi Arabian customer intent to adopt the mobile internet. Although focusing on a different measure, perceived enjoyment is seen as a determining factor for customer attitudes to mobile technologies. This result is similar to that of the current study. The similarity in results can be explained by the fact that continuous engagement of any innovative system relies on the end user enjoying it regardless of any other influential external factor.

Suki and Suki (2011) examined the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention to use 3G mobile services. The sample for this study included 100 3G mobile service subscribers in Malaysia. A survey was used to collect the primary data. The results show that perceived enjoyment did not significantly influence subscribers' intention to use 3G mobile service. A study by Koenig-Lewis et al. (2015) extended the Technology Acceptance Model framework by including social influence, knowledge and perceived risk, and perceived enjoyment. The study used a survey as data collection method. The sample consisted of 316 Generation Y smartphone users between the ages of 18-34, residing in France. They tested their model among Generation Y for adoption of mobile payment. They found that perceived enjoyment had no direct effect on adoption intention but a significant effect on perceived ease of use and usefulness of mobile payment technologies. The results of the two aforementioned studies contradict the result of the current study, mainly because of sample size and the market (developed countries), although it also focused on mobile technologies.

Bruner and Kumar (2005) conducted a study to help understand consumer acceptance of mobile smartphone devices. The sample for this study consisted of 789 members of a national panel in the US. The study followed a quantitative data collection method, in that an online survey was used to collect primary data. Their main finding demonstrates that the enjoyment of using a mobile smartphone device is a more powerful determinant of attitudes to usage than the perceived usefulness of the device itself. The result of this study is in agreement with the current study with regard to perceived enjoyment being a determining factor within mobile technologies. Cheema et al. (2013) tested their adapted model based on the Technology Acceptance Model among a sample of 150 professionals and students in Pakistan, in order to find the other factors that influence online shopping intentions. The research used a survey as a data collection tool. They confirm that perceived enjoyment and perceived ease of use are the main factors that influence online shopping intention. Ramayah and Ignatius (2005) explored the relationship between perceived usefulness, perceived enjoyment, perceived ease of use, and intention to shop online. The research used a survey to collect primary data, and sample size of 150 staff of a higher learning institution in Malaysia. The study reveals that perceived enjoyment and perceived ease of use are positively related to intention to shop online, while perceived usefulness did not show any significant relationship with intention to shop online. Although these three abovementioned studies also focused on intention to use online shopping platforms, these results are in agreement with this study regarding the positive perceived enjoyment attitudes.

Khedhaouria et al. (2014) conducted a study that examined the influence of perceived enjoyment on the intention to continue using mobile internet services in daily. The study utilised a

questionnaire for data collection, and received 623 responses from current mobile internet service users in France. The researchers found that perceived enjoyment of mobile internet services resulted in the intent to continue using the services on a daily basis. This result is in agreement with the result of the current study in that mobile internet services enable the use of mobile commerce apps. Praveena and Thomas (2014) published a study with the objective of identifying the continuance intention of using mobile apps, specifically Facebook. The study had a sample size of 197 undergraduate and postgraduate students in India. They found that the research model explains 36% variation in the intent to continue using mobile apps. The perceived enjoyment antecedent proved to be a strong determinant of attitude to using mobiles apps. This result is in line with the current study, although it focused on social media apps, and not mobile commerce apps.

Barutçu et al. (2015) published a paper that assessed the drivers of customer satisfaction in mobile shopping among Turkish student mobile shoppers. The study followed a quantitative approach where a survey instrument was used to gather primary data. The sample size consisted of 245 Turkish students. The study used the entertainment/enjoyment construct as one of the drivers, and the findings indicate that entertainment is a significant predictor of customer satisfaction with mobile shopping apps. This result is in agreement with the current study because of a similar target response group, industry (mobile shopping apps), and similar research methodology.

Studies that are in agreement with the current study generally used similar methodology, research target groups (Generation Y), and industries.

6.2.6 Perceived ease of use → customer satisfaction

Mobile shopping apps resulted in a positive perceived ease of use → customer satisfaction association, as there was a significant difference between the respondents. Previous research also somewhat supports this finding. Humbani (2019) studied the determinants of the acceptance and intent to continue paying through mobile apps. The sample included 416 respondents who were part of a sample comprising of South African consumers who were 18 years or older, owned a credit card, and had downloaded a mobile payment app during the time of fieldwork. The results indicate that ease of use of mobile payment technologies has a positive influence on the usefulness and satisfaction with the usage of mobile payment services. McLean et al. (2018) examined customer experience in relation to retailers'' m-commerce mobile applications, with the aim of developing a Mobile Application Customer Experience Model (MACE). The study used a survey as a data collection method, and a sample size of 1024 consumers in the United Kingdom. The results indicate that perceived ease of use significantly influences customer satisfaction with

mobile shopping apps. The findings also suggest that perceived enjoyment also significantly influences customer satisfaction with mobile shopping apps.

Amin et al. (2014) investigated the impact perceived ease of use, perceived usefulness, and trust has on mobile website customer satisfaction. The target audience for this study was mobile users in Malaysia, and the sample consisted of 302 respondents. The investigation followed a quantitative data collection approach (survey). It was found that there was a positive relationship between perceived ease of use, perceived usefulness, trust, and mobile website customer satisfaction. Yoon (2010) investigated the antecedents of customer satisfaction with online banking in China. The study used a survey as a tool for data collection, and the sample included 224 university students. It was found that perceived ease of use does not have a significant influence on customer satisfaction. Elements such as the design, security, speed, relevant content, and customer support service have a significant influence on customer satisfaction. The results of the five-abovementioned studies are in agreement with the current study and all focused on mobile commerce technologies as the industry of interest.

Alalwan et al. (2018) conducted a study in Saudi Arabia on the adoption of mobile internet. The study used a survey to collect data among 357 participants from major cities. They found that perceived usefulness positively influences customers' intention to adopt mobile internet. Experienced consumers' intentions to repeat a purchase from the previous online-based business from whom they purchased depends on both trust and the two beliefs identified by the Technology Acceptance Model, perceived ease of use and perceived usefulness. This result is in agreement with this study, in that perceived ease of use is considered a determining factor for intention to repeat a purchase, although the study focused on online based shopping, and not mobile shopping. Kim et al. (2009) conducted a study that investigated the effects of perceived usefulness, perceived enjoyment, perceived ease of use, and subjective norms regarding the use of smartphone users' attitudes to mobile commerce and mobile communication. The sample consisted of 341 college students in the US. The research used a quantitative data collection approach (survey) to collect primary data. They ascertained that effects such as perceived ease of use, usefulness, enjoyment and subjective norms of using a smartphone were the noteworthy predictors of attitudes toward m-commerce, mobile communication and mobile shopping intention. The study also suggests that a positive attitude toward mobile communication influences attitudes toward m-commerce, thereby positively influencing mobile shopping intention to engage. This result is in line with the current study in that ease of use is found to be a positive determinant of customer attitudes within the context of mobile commerce.

Suki and Suki (2011) examined the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention to use 3G mobile services. The sample for this study included 100 3G mobile service subscribers in Malaysia. They found that perceived ease of use, perceived usefulness, and attitude were equally responsible in determining subscribers' intention to use 3G mobile service. Ozturka et al. (2016) empirically tested a research model that included antecedents of mobile shopping loyalty to hotel mobile booking context. The sample consisted of 396 mobile hotel booking users in the US. Their research shows that perceived ease of use, compatibility, and convenience have a significant impact on the users' loyalty toward hotel mobile booking technology. This result is in line with the current study although that study focused on customer loyalty, and perceived ease of use was seen as an influential factor. Leong et al. (2011) empirically investigated the influence that perceived ease of use and perceived usefulness has on the intention to use mobile entertainment among 423 mobile entertainment users in Malaysia. They found that perceived ease of use, perceived usefulness, and past usage behaviour are factors that influence Malaysian mobile entertainment adoption. The result of this study is in agreement with the current study since mobile adoption and satisfaction are interlinked, and perceived ease of use is seen as a determining factor across.

The results of the abovementioned studies are mostly similar to the current study because they mostly focused on mobile technologies, a similar target response group, and they followed a similar research methodology (quantitative and surveys).

6.2.7 Involvement → customer satisfaction

This current study proved that mobile shopping apps resulted in a positive involvement → customer satisfaction relationship, in that there was a significant difference between the respondents. The involvement construct has also been investigated by numerous academics that provide interesting insights that focus on effects of this construct. Liébana-Cabanillas et al. (2017) conducted a study, which aimed to determine the key factors that influence consumers' adoption of m-commerce. 224 m-commerce consumers were interviewed. The study followed a quantitative data collection approach. Findings show that customisation and customer involvement are the strongest antecedents of the intention to use m-commerce. A study by Morosan and DeFranco (2016) examined hotel visitors' intentions to use hotel mobile apps to access personalised services. A quantitative data collection (structured survey) approach was followed in this study. The sample consisted of 320 national hotel visitors (representative of the population) in the US. The main driver of the intention to use mobile hotel apps was involvement, followed by perceived personalisation and app-related privacy concerns.

Levin (2014) examined how the mobile phone operating system (Apple iOS vs Android) and the level of involvement or interest in a mobile app affected the likelihood of consumers using mobile apps for information-sharing activities and purchasing. Data was collected using a survey for this study. The sample consisted of 345 customers of a major retailer in the US. These results indicate that the level of involvement or interest in a retail mobile app positively affects consumers' intention to participate in both information-sharing activities and purchasing. The abovementioned findings are in line with the current study, in that intention to use mobile technologies is the first step towards repeat usage before reaching the stage where user satisfaction would be measured, and the involvement influences such behaviours.

Suh and Yi (2006) specified and tested the moderating role product involvement has in determining the customer satisfaction-loyalty relation. A survey was used to collect the primary data, and the sample consisted of 1 940 household goods purchasers. They confirmed that customer satisfaction had greater effect on brand loyalty and brand attitudes when product involvement was low. This result is in line with the current study although not directly related to customer attitudes to mobile technologies; it shows the significant influence of involvement across different marketing elements. Holmes et al. (2014) explored attitudes to the use of mobile app shopping, mobile device usage at various stages in the decision making process, the influence involvement has on the mobile consumer decision-making process, and mobile shopping location. The study used an online survey to collect primary data. The sample consisted of 1 005 consumers in the United Kingdom. The findings indicate that when consumers are using their mobile phone for shopping, they value its convenience and accessibility. They also show that the extent of use of mobile devices is higher with the highly involved products in the decision making process. This result is in line with this study in that it shows that involvement plays a crucial role in the usage of mobile technologies.

The objective of a paper by San-Martín and López-Catalán (2013) was to study the role that constructs such as trust, impulsiveness, involvement, and innovativeness play as antecedents to customer satisfaction with mobile shopping apps. The study used a quantitative approach where data was collected using a survey instrument. The sample consisted of 447 Spanish mobile shoppers. The results of study indicated that trust, innovativeness and involvement had a favourable influence on customer satisfaction, whereas impulsiveness had a negative impact on mobile shopper satisfaction. The result of this study is in agreement with the current study because both the current and the aforementioned focused on a similar target group (mobile shoppers exclusively). A study by Prayag and Ryan (2011) evaluated a theoretical model based on hypothesised relationships among various antecedents; for the objective of this research, they looked into personal involvement and customer satisfaction as antecedents of loyalty to hotels in the island of Mauritius. The sample consisted of 705 visitors from across the world staying in hotels

in Mauritius. Results show that there is no direct relationship between personal involvement and customer satisfaction among hotel visitors. This result contradicts the current study. This result can be attributed to the fact that the aforementioned study focused on a different mobile category than those included in the current study. One of the objectives of a study by San-Martín et al. (2011) was to validate whether the influence of customer satisfaction on customer trust was consistent regardless of whether a customer had a low or a high level of involvement with online shopping. The data collection technique was quantitative in nature, where a questionnaire was utilised for the collection of data. The sample consisted of 457 internet users who had bought through online shopping in Spain. The study found that the effect of customer satisfaction on customer trust varied according to the customer's level of involvement in online shopping.

Kang et al. (2015) examined whether characteristics of retail mobile app location-based services – interactivity, compatibility, effort expectancy, time and convenience – were related to users' affective and cognitive involvement, which in turn were related to their intention to download and use retail mobile app location-based services. They also examined the moderating effect of experiential orientation on the links between consumers' affective and cognitive involvements and usage intention. Primary data was collected using an online survey, and the survey was distributed to 853 mobile internet users in the United State America. They reported that compatibility and perceived interactivity were influential constructs that formed users' affective involvement with retail mobile apps location-based services, which in turn influenced their intention to download and use the retail apps. The link between usage intention and affective involvement was greater for mobile users with high experiential orientation compared to those with low experiential orientation. The results of the two aforementioned studies are in line with the current study in that they also indicate that the level of involvement significantly influences customer attitudes.

The aforementioned results are similar to the results of the current study due to reasons such as a similar research methodology, most of the studies focussed on digital commerce technologies, and similar target research groups (technologically experienced individuals) were used.

6.2.8 Innovativeness → customer satisfaction

There was a noteworthy difference between the respondents in this current study, in that mobile shopping apps resulted in a favourable innovativeness → customer satisfaction association. A number of published academic papers have also focused on ascertaining the impact of innovativeness antecedent. Alalwan et al. (2018) conducted a study in Saudi Arabia of the adoption of mobile internet among 357 respondents from major cities. They reveal that the innovativeness construct has a positive impact on Saudi Arabian customer intention to adopt mobile internet. This

study is in line with the current study since mobile internet adoption (influenced by innovativeness) is essential for mobile commerce usage prior to measuring customer satisfaction with mobile technologies. Chauhan et al. (2019) conducted a study that sought to understand the intention to adopt internet banking. The study adopted the Technology Acceptance Model with additional constructs such as consumer innate innovativeness, domain-specific innovativeness and perceived security risk. The study used a self-administered survey to collect the primary data. The sample consisted of 487 consumers in the Indore and Bhopal districts of Madhya Pradesh in India. The results show that there is a significant positive influence of ease of use, perceived usefulness, attitude, innate innovativeness and domain-specific innovativeness on consumer's adoption intention for internet banking usage. The perceived security risk has a significant negative influence on consumer's adoption intention for internet banking usage, and domain-specific innovativeness resulted negatively influencing perceived security risk. This result is in agreement with the current study in that customer innovativeness factor was found to be a significant determinant of customer attitudes to digital technologies.

Kumar and Mukherjee (2013) conducted a mobile shopping study among Montclair University students aged 18-45 years. The objective of the study was to: a) assess the effect of individual traits toward technology on perceptions toward mobile shopping; b) assess the effect of perceptions toward mobile shopping on attitude toward mobile shopping; c) assess the effect of attitude toward mobile shopping on intention to purchase using a mobile device. The study utilised a questionnaire for data collection among 289 undergraduate students in the US. They found that mobile shopping does not necessarily lead to purchase through the mobile device. The results also indicate that personality traits, in terms of technology use, play a significant role in the perceptions of mobile shopping. They also suggest that optimism, innovativeness and insecurity have a direct impact on perceptions and an indirect impact on attitude and purchase intention. This result is in line with the current study in that it also found innovativeness to be an influential factor with regard to customer attitudes in the context of mobile commerce. Aldás-Manzano et al. (2009) published a research paper on Spanish online banking users. The paper aimed to analyse how consumer innovativeness can be used to influence online banking adoption positively and decrease consumers' perceived risk. The study used a survey to collect primary data, and a total sample of 511 Spanish internet users was achieved. The results show that consumer innovativeness is a key construct to improve online banking adoption directly, and by the effective role that it plays in reducing consumers' perceived risk of using the internet channel for financial services. This result is in agreement with the current study in that it also included digital banking users as part of the sample.

Parveen and Sulaiman (2008) examined the factors that influence the intention to use wireless internet on mobile devices among Malaysian consumers. Their research followed a quantitative data collection approach where a survey was used. The sample for this study consisted of 301 internet users in Malaysia. Their findings show that factors such as technology complexity and personal innovativeness have a positive impact on intention to use wireless internet on mobile devices. Aldás-Manzano et al. (2009) examined how user innovativeness can be used as a construct to affect internet-banking usage favourably and minimise users' perceived risk. The sample consists of 511 Spanish internet-banking services. The results reveal consumer innovativeness as a key variable to improve internet-banking usage both directly and reducing users' perceived risk. The result of the two-abovementioned studies are in line with the result of the current study because of similar research methodologies, and research target group.

Hirunyawipada and Paswan (2006) investigated consumer innovativeness from a hierarchical perspective, examined the concurrent impacts of hierarchical perspective of consumer innovativeness, and perceived risk on adoption of a new product. The study adopted a quantitative data collection technique (self-administered questionnaire). Structural equation modelling was utilised to test the hypothesis using empirical data from 746 respondents within the context of high-tech products at a university in the US. The findings provide support for the hierarchical perspective of consumer innovativeness; domain specific consumer innovativeness mediates the relationship between global consumer innovativeness and new product adoption. Particularly, cognitive and domain-specific innovativeness increases the chance of the actual adoption of new product innovations. This result is in agreement with the current study in that it focuses on the effect of innovation. The objective of Thakur and Srivastava (2015)' was to develop and scientifically test a conceptual model to determine how customer innovativeness is used as a construct to positively stimulate online shopping adoption intention, directly and also while reducing consumer-perceived risk. The sample consisted of 433 internet users in India. An online questionnaire was used to collect data among respondents. These findings showed consumer innovativeness as a key variable to improve online shopping adoption intention, both directly and by its positive influence in reducing consumer-perceived risk of using the online channel to purchase products. This result is in line with the current study, since the studies have similar elements such as the research methodology used to collect primary data, target research group, and industry of interest (digital commerce).

Most of the abovementioned results are in agreement with the current study's results in that personal innovativeness was found to be important when engaging in innovative technology.

6.3 Usage characteristic influences on consumer attitudes

In this section, results of other studies will be discussed to understand different usage factors as they might influence the overall results of a given research study. Accordingly, usage characteristics were examined as a secondary objective of the research to ascertain whether they have an influence on consumer attitudes to mobile commerce.

6.3.1 Mobile shopping app categories

Results suggest that Generation Y respondents who used mobile banking, e-hailing taxi services, online retail stores, and food outlet and delivery mobile shopping apps display more positive customer satisfaction attitudinal responses those who use traditional retail store mobile shopping apps. Several studies have also investigated the effect of different mobile app business categories. Thaker et al. (2018) explored customer loyalty or continuance intention to use Islamic mobile banking services among Islamic customers in Malaysia. The primary data was collected using a self-administered survey, which was dispersed to 250 participants in the Klang Valley in Malaysia. The study shows that continuance intention to use mobile banking services is dependent on the usability of mobile banking services, customer service, customer satisfaction, and trust of customers towards mobile banking services. More so, the mediating effect of mobile banking services continuance of usage is influenced significantly by trust and customer satisfaction.

Thakur (2018) conducted a study that focused on retail brands' mobile shopping applications and examined the relationship between post-adoption satisfaction, loyalty, and self-efficacy in the usage of mobile retail shopping apps. A survey was used to collect the primary data among 424 retail mobile app shoppers in India. The results show that satisfaction and self-efficacy have a positive impact on mobile shopping app continuance intention. The results of the two-abovementioned studies are in agreement with the result of the current study in that it proves that customer satisfaction levels are dependent of the type of mobile commerce categories used.

Ramadan and Aita (2018) published a study that investigated the impact of satisfaction with mobile payment apps because of user experience, and expectations on brand loyalty and intention to use in the future. The study was a mixed data collection methodology where both qualitative and quantitative data collection techniques were used. The first phase of the study used a focus group to explore elements of the study to feed into the quantitative data collection. The second phase of the study used an online survey and data was collected among 305 mobile payment app users across nine different Middle Eastern countries. Their result indicates that satisfaction with the quality of mobile payment apps increases with use experience and enhances users' expectations,

which in turn positively affects brand loyalty and intention to purchase through the mobile apps. This study is in line with the current study although the study was a mixed research methodology.

A study by Thakur (2014) examined whether usability and customer service were determinant factors of satisfaction and loyalty in mobile banking. The research adopted a quantitative data collection method where an online questionnaire was used to collect data from 433 mobile banking customers in India. The research showed that customer satisfaction from mobile banking based on previous interactions had a positive effect on customer loyalty. Jun and Palacios (2016) found that within mobile banking apps dimensions such as accuracy, mobile convenience, diverse mobile application service features, continuous improvement, and ease of use are seen as the main sources of customer satisfaction or dissatisfaction. The study followed a qualitative data collection approach where they employed the critical incident technique to uncover the essential dimensions of mobile banking service quality as perceived by mobile banking customers in the US. An analysis of 803 incidents was used in order to produce the results. This result is similar to the current study and it proves that customer satisfaction depends on mobile commerce category used. Sampaio et al. (2017) focused on the use of mobile banking apps, and examined how perceived justice affects the relationship between the benefits offered by mobile banking and customer satisfaction with mobile banking apps. The research followed a quantitative approach to gather data among 383 mobile banking customers in Brazil, India and the US. Their findings confirm that the benefits of using mobile banking apps are positively related to customer satisfaction with the apps. In a study focusing on mobile food delivery apps, Lee et al. (2017) investigated the relationships between the determinants that affect users' attitudes to mobile food delivery apps. Primary data was collected using online surveys, and 350 questions were completed among mobile app delivery app users in Korea. Their results show that brand-generated information, user-generated information, and mobile app system quality had a significant positive effect on perceived usefulness of mobile delivery apps.

The above findings are largely similar to the current study because these studies have also focused on customer attitudes to various mobile commerce categories contained in the overall result of the current study.

6.3.2 Access

It has been found in this study that respondents who accessed mobile shopping apps via tablets and smartphones showed more favourable customer satisfaction attitudinal tendencies than those who use feature phones. Although no single study is exactly related to the objectives of this research, several authors gave insight, which could be collectively related this result. Soomro et al.

(2019) explored the intention to use smartphone apps. The data was collected through using a questionnaire, which was distributed among a sample of 280 entrepreneurs in Pakistan. The findings show that a significant positive relationship of perceived ease of use, perceived enjoyment, perceived usefulness, and satisfaction with the intention to use smartphone apps. This result is in agreement with the current study in that customers play an essential role of satisfaction with the intention to use smartphone apps. Wang's (2019) study aimed to uncover potential compatibility and causal relationships or consistency between smartphone mobile apps and travellers' perceived technological similarities and technological value, attitudes toward price change, prior experiences and usage intentions. A quantitative data collection approach was followed where an online survey was completed by 619 travellers in the US. The findings indicate that the influence of travellers' smartphone usage experiences is significantly affected by their perception of the device's technological value in terms of the need to travel, and thus results in positive attitudes toward the price of a new mobile app and the intention to start using it. Prior trip experience was however not found to be an influential factor in consumers' smartphone acceptability. This result is in similar with the current study's result since it also followed a similar research methodology, and focused on the context of mobile technologies.

Rezaei and Valaei's (2017) research focused on uncovering the impact of post-usage usefulness, experiential value, and mobile apps channel satisfaction on consumer continuance intention towards using smartphone mobile shopping apps. A survey was used to collect primary data among Malaysian mobile shopping users, and a sample size of 467 was achieved. The study found a relationship between smartphone mobile shopping app satisfaction and mobile app continuance intention. They also showed that there was a positive relationship between mobile shopping app experiential value and mobile app satisfaction. Using the System Usability Scale Model, Kortum and Sorber (2015) examined the usability of mobile apps used on two kinds of mobile platforms, smartphones and tablet computers, across two platforms of operating systems, iOS and Android. They used questionnaires to gather the data, and achieved a sample consisting 3 575 users in the US. Results showed that the majority of respondents rated apps on smartphone platforms were more usable than apps on tablets.

A study conducted among travellers in India, had the objective of identifying factors contributing to tourists' behavioural attitudes to travel mobile apps installed in their smartphones (Gupta et al., 2018). The primary data was collected using a survey, which was completed by 343 participants. The results show that predictors with a significant impact on smartphone mobile app usage intention included perceived trust, social influence, performance expectancy, perceived risk, price saving, and prior usage habits. The findings of the three abovementioned results are in agreement

with the current study in that the device used to access mobile commerce apps has an influence on customer attitudes.

A research study by Kim (2016) investigated whether a user's perceptions of hotel tablet computer apps serve as determinants of users' behavioural intention towards the hotel app's usefulness, credibility, ease of use, and subjective norm. A quantitative data collection approach was used with a questionnaire for data collection. A total sample of 751 hotel customers in the US was achieved. The findings confirm that three of four constructs hypothesised as determinants did positively influence users' behavioural intention toward hotel mobile apps. Burford and Park (2014) explored young adult's information behaviours when given unlimited access to mobile tablet computers. Their research used netnography as a data collection approach, based on the behaviour and interaction in the online world of a group of 35 Australian iPad users. They found that access to mobile tablet computers resulted in significant behavioural shifts for young adults who were being immersed in the digital information world. This finding of the two studies mentioned above are related to the finding of the current study, since the current study also proved that customer attitudes are influenced by type of device used to access mobile apps.

Therefore, most of the findings of the aforementioned studies are related to the results of the current study.

6.3.3 Length of usage

Respondents who have engaged in mobile shopping for 4 years and more displayed more positive customer satisfaction inclinations compared to those who engaged in mobile shopping for fewer years. Several studies also are in agreement with this finding. Chen (2018) empirically explored the marketing factors driving consumers' mobile shopping based on the lifestyle perspective. A total of 168 valid surveys were completed by mobile shopping app consumers in Taiwan. The results indicate that mobile app platform use habit, shopping independence preference, promotion marketing, and quality price comparison preference are associated with consumers' post-purchase satisfaction with mobile shopping apps/websites. Consumers' usage and usage experience satisfaction with mobile shopping apps/websites are important factors in aiding continuous use intention. This study is similar to the current one since both followed a quantitative data collection approach, and they interviewed a similar respondent target group (mobile app users).

Gong et al. (2018) explored why experienced users of smartphone mobile apps were likely to continue using them. They proposed a conceptual model to validate the key drivers of continuance intention of WeChat users in China. The study employed a quantitative data collection technique

where a self-administered survey was used. A sample size of 295 valid responses was achieved. The findings show that trust played a crucial role in influencing continuance intention among experienced smartphone mobile app users. This study is in agreement with the current study in that they both agree that experience with using mobile apps results in positive customer attitudes.

Pappas et al. (2014) aimed to ascertain the moderating effect of experience on the relationship of antecedents with satisfaction, and the relationship of satisfaction with repurchase intention. A survey was used to collect primary data among respondents in Greece. The final sample consisted of 393 online shoppers who successfully completed the questionnaires. The findings verify that user experience has a moderating effect on the relationships between satisfaction and performance expectancy, and repurchase intention and satisfaction. This result is in agreement with the current study, because both studies focused on consumer attitudes within the context of the digital commerce industry.

Srinivasan and Raghavender (2006) conducted a study to investigate the influence of mobile apps on three travel related dimensions: unplanned rideshares arranged by using mobile devices, unplanned activity chaining, and mobile app shopping. A survey was used to collect the primary data among 400 mobile app users in India. Their findings suggest that consumers who are technologically savvy experienced and have owned and used apps on a smartphone for more than one year are more likely to use unplanned rideshares or e-hailing services than the less technological savvy or recent owners of smartphones. This result is in line with this study; although they did not have exactly the same research objective, they did agree that length of usage positively influences customer attitudes.

The majority of the aforementioned studies show that length of usage of any kind of mobile app category is crucial towards positive attitudinal influences.

6.3.4 Mobile shopping engagement frequency

The findings from this current study show that respondents, who always, often, and sometimes engage in mobile shopping, displayed more positive customer satisfaction attitude levels in comparison to those who rarely engage in mobile shopping. Similar results are evident from Thakur's (2019) study that examined the moderating role of customer engagement experiences in the satisfaction–loyalty relationship with mobile shopping and travel apps. The study employed a qualitative technique to explore relevant engagement experiences. The analysis included 353 complete responses among mobile shoppers and travellers in India. It was found that the effect of customer satisfaction on continuance intention is higher among customers who are most frequent

users. This result is in agreement with the current because they both focused on respondents from developing economies.

Linnhoff and Smith (2016) investigated mobile app usage and the relationship between mobile app usage and user satisfaction in general. The sample included 107 college students in a university in the US. The results show that there is a significant relationship between users' levels of mobile app usage and their satisfaction with life in general. Dlodlo and Mafini (2013) conducted a study among 204 Generation Y consumers. They quantitatively examined the nature of relationships that exist between technology acceptance and the frequency of m-commerce usage. The study used the m-commerce acceptance dimension to measure the correlations. Their study proved that there were positive correlations between frequency of use and five mobile commerce acceptance dimensions. The results of the two abovementioned studies are in agreement with the current study in that they focused on a similar research target group. Hew et al. (2015) adapted the Unified Theory of Acceptance and Use of Technology 2 models to investigate the determinants of consumer behavioural intention towards the use of mobile apps. The research followed a quantitative data collection approach where self-administered surveys were distributed among mobile app users in Malaysia. A sample of 288 was achieved after fieldwork completion. The research results confirm that most of the constructs included in the Unified Theory of Acceptance and Use of Technology 2 models (effort expectancy, performance expectancy, facilitating conditions, habit, and hedonic motivation), besides social influence and price value, significantly drive the behavioural intention to use mobile apps. Habit was found to be the strongest influence on behavioural intention to use mobile apps.

Kim et al. (2016) explored the role of mobile app usage experience as a moderator of customer satisfaction. The research used face-to-face interviewer-administered surveys. The final sample included 700 smartphone users in major cities in Korea. The findings indicate that the device features (design, usability, and functions) and business factors (corporate image and customer services) significantly influenced customer satisfaction with mobile apps. Usage characteristics such as length of use and usage experience also moderated customer satisfaction. The results from the two aforementioned studies are in line with the result of the current study in that they agree that usage experience results in positive customer attitudes.

The research question of a study by Calvo-Porral and Levy-Mangin (2016) was whether purchasing frequency influences consumer behaviour in the specialty food retailing setting. A quantitative data collection technique was used where a structured questionnaire was dispersed among 592 retail shoppers in the US. Results indicate that customer satisfaction and loyalty to specialty food retail

stores are largely influenced by consumers' frequency of purchase. The results also support the moderating role of frequency of purchase on the relationship between perceived service at the store and customer satisfaction. This result is related the current study in that it also proves that there is a significant relationship between usage frequency and customer satisfaction.

Therefore, the findings of most of the above research studies are in agreement with the current study.

6.3.5 Mobile shopping app spending

The current study indicates that respondents who spent higher amounts through mobile shopping apps showed more positive customer satisfaction attitudinal tendencies compared to those who spent lesser amounts. Nisar et al. (2017) aimed to determine the factors that affect customer satisfaction and its relationship with consumer spending in e-commerce. Secondary sources were used to gather information in research focusing on DataStream and Statista.com websites. The sample included the American customer satisfaction index and sales value data for the leading 115 e-commerce retailers in the US. Findings of this study indicate that online customer satisfaction has an impact on consumer spending among American e-commerce retailers. They also confirm that the relationship between online customer satisfaction and online consumer spending is positive in nature, in that higher online customer satisfaction results in more spending within e-commerce.

Kim et al. (2015:28-41) investigated if spending behaviour would change after using a brand's mobile app. Primary data was collected using an online survey, and the total achieved sample amounted to 273 responses from college student consumers in the US. The results of the study verified that the use of a brand's app increased future spending. They also suggested that attractive apps could be persuasive marketing tools in that they are portable, convenient, and provide a platform for consumers to interact with the brand. The results of the two aforementioned studies are related to the current study in that consumer behaviour is related to spending patterns with the digital commerce industry.

Liu et al. (2019) conducted a study among Chinese consumers using an online retailers' transactional data. They explored whether consumers' app adoption encourages additional purchases, and how this change in purchasing behaviour varies across consumers with different share of spending power for different product categories as well as customer loyalty. For this study secondary data was used to conclude the findings where information of 3 378 distinctive customers with 13 654 orders was obtained. The data was drawn from the customer database of a retailer in China. The results suggest that mobile app users have higher purchase incidence, they buy more

frequently, and they spend more in each basket order than non-users. They also suggest that mobile app adoption has a stronger positive effect on the basket order size for customers who have a lower share of spending power for high-price products, and for customers who are less loyal to the online retailer. This result is related to the current study as it shows the relationship spending behaviour has with customer attitudes to digital commerce vendors.

Buoye et al. (2016) explored the relevance and validity of customer satisfaction as an antecedent to share of wallet. A quantitative data collection methodology was used to survey 4 263 customers in the US. The findings indicate that if customer satisfaction is measured using an absolute satisfaction rating of a brand, the effect of satisfaction on share of wallet is very weak. Nonetheless, it was also found that when adopting customer satisfaction metrics relative to competing brands, customer satisfaction is seen as a strong predictor of share of category spending behaviour.

Spake et al. (2011) conducted a study to examine the antecedents of consumer e-commerce spending. The study examined the consumer's experience with online shopping, level of technological savvy, level of confidence that online activities are not monitored, comfort providing personal information online, and trust towards other parties obtaining credit card information when predicting the amount a consumer will spend online. A research sample of 766 students from college in the US completed surveys after being intercepted on the college campus. The results show that trust and customer experience are significant predictors of the amount spent by consumers on e-commerce. The results of the two studies mentioned above are in agreement with the current study as they followed a quantitative data collection approach, and conduct the research among a similar target research group.

Huang et al. (2016) investigated whether the introduction of mobile shopping apps by traditional online or e-commerce vendors has led to the cannibalisation of sales from the e-commerce platform or website. They used 2½ years of secondary transactional data from an e-commerce vendor in China. Their results indicate that after customers adopted the mobile shopping channel, the purchases on the web-shopping channel were slightly cannibalised. However, purchases increased overall, which suggests that the positive synergy effect of the new shopping channel superseded the negative cannibalisation. Narang and Shankar (2016) conducted a study that aimed to identify and estimate whether there were differences between mobile app adopters and mobile app non-adopters in resulting shopping outcomes such as the incidence and monetary value of purchases and returns. Secondary data was used for this study where transactions-related data from a retailer in the US, and they accessed data on mobile app usage for over 32 million customers and the retailer's loyalty program members. They confirmed that app adopters bought

21% more often, but spent less per purchase occasion (12%), and returned products 73% more often than non-adopters in the month after adopting mobile app shopping.

Wang et al. (2015) evaluated changes in customers' spending behaviour upon adopting M-shopping using secondary data among online retailers in the US. The sample consisted of 3 086 M-shoppers, who accounted for 45 346 orders, and 6 172 personal computer-only shoppers, who accounted for 83 042 orders. Their study indicates that as customers adopt m-shopping the number of orders increases placed per year, especially among low spending customers. The three abovementioned studies provide some insight into online and mobile spending patterns, and focus on understanding consumer behaviour within the digital commerce industry, but used different research methodologies to the current study.

As in this study, majority of the abovementioned studies do find that the level of spending does influence customer attitudes to mobile app vendors.

6.3.6 Marketing communication response

Respondents that often and sometimes respond to marketing communications in mobile shopping apps display more positive customer satisfaction attitudinal responses in comparison to those who rarely and never respond. A research study by Hänninen and Karjaluoto (2017) had a similar outcome. They conducted research that focused on a new perspective of industrial business-to-business relationships by linking the theoretical focus areas of relationship marketing and marketing communications. The data collection was quantitative in nature in that a questionnaire was used for primary data collection. The sample consist of 121 customers of manufacturing companies operating in industries such as mineral, paper, and metal processing in Finland. The results show that the influences of perceived value on customer loyalty are twofold, direct and indirect, since marketing communications mediate the relationship between the two antecedents. On the other hand, perceived effectiveness of various marketing communication channels contributes more to customer loyalty than the perceived quality of marketing communications. This result is similar to the current study, although the Hänninen and Karjaluoto (2017) focused on different industries.

Chen et al. (2012) evaluated mobile apps as an effective mobile marketing tool for hotels, and the extent of the marketing outcomes. A qualitative data collection approach was used from data that came from several observations and reports that included ratings and varied information on the mobile apps of InterContinental, Hilton Hotels, and Marriot Hotels. It was found that mobile apps can be effectively used as a marketing tool based on app downloads, bookings directly from the

mobile app, and on sales. They also suggest that hotels using mobile apps could improve their marketing performance by using them as tracking and reporting tools.

A study by Persaud and Azhar (2012) investigated consumers' acceptance of marketing communications through their smartphone apps. An online survey was utilised to collect primary data, and 428 completed questionnaires were received back from a snowballed group of professionals living in Canada. It was found that consumers' brand trust, value, and shopping style are essential motivations for engaging in mobile marketing communications through smartphone apps. This result is in agreement with the current study since it also followed a quantitative data collection approach, among a similar target response group.

Watson et al. (2013:840-849) considered smartphone users in the UK and measured consumer attitudes to mobile marketing. The results of the study confirm that consumers had negative attitudes to mobile marketing communications. The researchers also suggest that acceptance can be enhanced by permission marketing, building trust, creating a sense of being in control, and a useful and entertaining platform. Although not directly related to this current study, the results of abovementioned studies are somewhat related to the current study's finding, since mobile marketing messages delivered through mobile apps are seen as important.

Heinonen and Strandvik (2007) examined consumer responsiveness as a function of the perceived relevance of marketing communication and the acceptance of the medium of the communication. The sample consisted of 1 179 digital consumers in Finland. It was found that compared to traditional media such as direct mail and email, responsiveness to mobile marketing was significantly lower. The results also indicate that businesses need to consider users' responsiveness in order to understand mobile marketing communication effectiveness in various channels, including traditional and new communication media. However, the result supports the current study's result since it also reported lower levels of marketing communication engagement in traditional media versus mobile app channels.

Hsu et al. (2015) proposed a conceptual model to measure customer perceptions of mobile app use. A questionnaire was distributed among respondents and 507 responses were received among mobile app users in Taiwan. The findings of this study suggest that confirmation is positively related to perceived value and customer satisfaction. Elements such as app rating, free alternatives to paid apps, and value-for-money were found to have a direct impact on intention to download and use paid apps. Alatalo (2007) developed a conceptual model to investigate factors that affect consumer attitudes to mobile marketing. A quantitative data collection approach was followed in this study. The sample consisted of 4062 mobile consumers in Finland. Their results show that the context, credibility of communication and subjective norm are positively related to intention to

participate in mobile marketing, while financial rewards and perceived behavioural control were not associated with intention to engage in mobile marketing. This result is related to the current study because of the research methodology used, sample size, and industry of research interest.

Dinner et al. (2015) examined what drove customer usage of mobile apps and whether mobile app usage influences purchases in the online and offline channels. A questionnaire was utilised for the collection of data among 1 286 customers who had downloaded a retailer's mobile app in the US. The results indicate that mobile app access is mainly driven by online advertising, social media communication, state dependency, mobile app upgrades, and purchase history. This result is in agreement with the current study and it followed a quantitative data collection approach among a similar target response group.

The studies mentioned above indicate that customers' response to marketing communication does not only prove their engagement with the vendor, but also has an influence on customers' attitudes.

6.4 Demographic characteristic influences on consumer attitudes

Reporting on the influence of respondent demographic characteristics is important for this study to provide insight into the secondary objective. Although not all demographic factors had a significant influence on overall customer satisfaction, some demographic variables had an influence such as age, education level, and employment status, which are discussed below.

6.4.1 Age

The 18 - 22 year old age group displayed more positive customer satisfaction inclinations compared to the 28 - 32 year old age group. Several studies also empirically assessed the effect of age on customer attitudes to mobile business technological advancements. Morosan and DeFranco (2019) examined the impact of several hotel promotional factors and consumers' behavioural and demographic factors on the actual use of certain interactive information systems (hotel's mobile app, website, push notification system, smart TV in room, kiosk, and computer tablet at front desk) in hotels. An online questionnaire was distributed for this study and a total sample of 841 was achieved among hotel reservation customers in the US. The results show that promotional factors had a differential effect on consumers' use of certain information systems. The findings further indicate that information acceded through mobile devices, staff direct marketing, press releases and blogs, as well as customer age and duration of stay, were found to have the greatest impact on information system usage behaviour. This result is in agreement with the current study in that it proves that age influences overall customer attitudes.

A study by Doub et al. (2015) identified two consumer segments (users and non-users) in food-related technology and explained differences in their demographic characteristics, food-related app use, and interests in the app functionality. The study used a survey instrument as a data collection technique. The sample included 615 consumers who were mainly responsible of grocery shopping and meal planning for their households in the US. The results of the study indicate that about half of the respondents engaged with food and food-related apps, and the younger adults segment (aged 18–34) were more engaged with technology and food than older adults (aged 55+). This result is similar to the current study in that younger consumers were found to show more positive customer attitudes to mobile commerce apps. The result can be explained by the fact that the study also followed a quantitative data collection approach and considered a similar industry of interest.

Kim and Han (2015:174) examined individuals' self-monitoring tendency and its relationship to mobile dependency, fashion involvement, and tendency to experiment with appearance to understand the influences of consumer's personal traits on their mobile device usages. A survey was used to collect primary data from 373 students at a university in the US. The results suggest that using mobile communication to promote products will appeal to those with high self-monitoring tendency. Thus, young adult consumers with high levels of sensitivity regarding self-monitoring as well as high levels of ability regarding self-monitoring would be a crucial target market for any retailers and/or marketers that adopt mobile communication and services to promote their products.

Foscht et al. (2009) investigated the factors that influence customer satisfaction, loyalty, and behavioural intentions towards banking needs. The study used a survey to collect primary data. The sample consisted of 242 Generation Y respondents from Austria who completed the surveys. The research found that there were differences among different age groups within the Generation Y cohort regarding information sources, financial services adopted, and the likelihood of switching. The research confirms that as young consumers reach certain milestones, their banking needs become more complex, thereby the determinants of customer satisfaction also change. A study by Shah (2016) with a majority of young working professionals between the age brackets of 25 - 35 aimed to ascertain the antecedents of user engagement and flow constructs, and their interplay during online product or service usage. The data collection procedure followed was quantitative in nature, where an online survey was dispersed to mobile banking app users in South Africa. The total achieved sample amounted to 274 valid usable responses. The results indicate that four antecedents (perceived usefulness, skills, perceived control, and perceived ease of use) were significant predictors of flow experience within mobile banking apps. The findings of the three-abovementioned studies are in line with the findings of the current research study since they also followed a quantitative data collection approach; focussed in similar target response group (Generation Y); and investigates the same industries.

From the studies included above it is clear that age does play a role as an influential factor regarding customer attitudes to mobile application in general.

6.4.2 Education level

Results show that respondents who had completed a postgraduate degree displayed more positive customer satisfaction attitude levels in comparison to those who had an education level between Grade 8 - 11. The effect education level has on customer attitude has also been reported on by authors such as Baruk and Iwanicka (2016) who conducted a study that sought to determine the relations between final customer expectations of elements of product packaging and three demographic characteristics (age, gender and level of education). The data collection method was quantitative in nature, where a questionnaire was used. The sample consisted of 550 dairy product consumers in the United Kingdom. The results indicate that the demographic factors influence the structure of customer expectations towards dairy product packaging, thus shaping their purchase decision. The above result is not similar to the current study since it focused on a different industry of interest, although they both measured the effect of demographic factors towards consumer attitudes.

A study by Aghdaie and Faghani (2012) applied a SERVQUAL model to investigate the relation between mobile banking and satisfaction of customers. A survey was used to collect the data for this study. The sample consists of 120 participants of which 75% were postgraduate students (masters) at a university in Iran. The findings prove that the variables within the SERVQUAL model such as tangibleness, reliability, responsiveness, and empathy significantly correlate with the level of satisfaction. The objective of Deshwal (2016)'s study was to ascertain whether there was a difference between groups based on demographic variables for dimensions of customer experience quality. A quantitative data collection approach was followed for this study (questionnaire used), and data was collected from a sample of 346 Indian retail store consumers. The results show that there is a significant difference among different levels of education among the consumers, with respect to customer experience quality dimensions such as outcome focus, product experience, and peace of mind.

Akeriwe (2014) conducted a study that focused on university graduates only. The research aimed to uncover how mobile technologies could be utilised to implement Web 2.0 based (mobile apps) service delivery to graduates from the Graduate School of the University for Development Studies (UDS) Library in Ghana. A survey was used to collect data among the respondents, and a sample size of 119 was achieved. The results show that overall; the students have good abilities to use mobile apps, which means they would be likely to access their library resources through a mobile

app. The findings of the three abovementioned studies are in agreement with the current study since it also followed the same data collection approach, and focused on the same industries.

Pakdil and Aydın (2007) conducted a study focusing on measuring service quality for a Turkish airline company. A questionnaire was utilised in this study for data collection. The sample consisted of 385 International airline passengers in Turkey. From a number of findings, they concluded that the most important variable affecting passenger expectations and perceptions of service quality was their level of education. This finding is related and gives insight to this study, and this result can be explained by the fact that both studies followed the same data collection approach, and focus on measuring the influence of level of education towards consumer attitudes in a similar industry of interest. Cooil et al. (2017) investigated the relationship between customer satisfaction and loyalty in the Canadian banking industry, and also aimed to determine the moderating effects of customer income, age, expertise, education, and the relationship length. Primary data was collected using a survey, and the sample included 12 249 observations from 4319 households in Canada. The findings of the research show a favourable relationship between variations in satisfaction and share of wallet. The study further suggests that two variables (length of the relationship and income) negatively moderate this relationship. Other demographic (including education) and situational characteristic variables had no impact on the relationship.

Chan and Chong (2013) examined the factors that influence m-commerce usage/adoption among a sample of 407 Malaysian mobile shopping app users. A quantitative data collection method (survey) was used for this study. They confirm that level of education, perceived usefulness, perceived ease of use, and perceived enjoyment are the most important variables which is in line with the current study. Yildirim (2015) aimed to ascertain the effect of education level, gender, and age on customer evaluations of store atmospheric attributes in retail furniture stores. A self-administered survey was distributed to customers to capture the primary data. The total sample consisted of 273 customers who shopped at a furniture store in Turkey. The results show that there are significant differences in customer evaluations of store atmospheric attributes based on customer demographic factors such as education level, age, and gender, which is in agreement with this study.

Most of these studies do show that the level of education of mobile app users is essential in determining their attitudinal responses towards mobile app business.

6.4.3 Employment status

Respondents, who are self-employed, employed full-time and employed part-time showed more favourable customer satisfaction attitudinal tendencies than unemployed respondents. Other studies assessed the impact of employment status on consumer attitudes, such as Kaila (2018), a study that had the objective of ascertaining whether there was a demographic difference regarding the highest amount spent in single transaction by an online shopper. A questionnaire was distributed and completed by 308 online shoppers in India. The results reveal a significant association between yearly expenditure and demographic factors like occupation, gender, marital status, and age. The findings further confirm that there is a significant association between occupation and the largest single basket transactional amount spent through online shopping.

The aim of a study by Phakane (2011) was to establish elements that influence customers' decision in deciding between a bank and non-banking channel to remit. Both an online and paper questionnaire was used to collect data from respondents. The sample includes 52 consumers who remit within South Africa. The results show that consumers prefer traditional channels to remit for both banking a non-banking service. It was also found in the study that consumers prefer the physical channels of both banks and non-banks to remit, and for those who remit, it was found that the higher income earners engaged online, as opposed to lower income earners. The two aforementioned results are partially related to this study because of the similar research approach, and the target response markets are classified as developing economies.

The overall aim of a study by Van Rooyen (2016) was to examine the current use of mobile apps by business travellers before, during, and after their business trips, and to ascertain their needs regarding development of mobile apps in the future, while also taking into consideration their different profiles and the different characteristics of the trips they embark on. The primary data was collected using an online questionnaire distributed to 12 965 business travellers who had booked both local and international trips with a certain travel agent in South Africa. The sample included most of the respondents (96.8%) who regarded themselves as paid employees. The results show that there is a slight difference in preference in that those who are have a lower education level find mobile apps more useful during the booking phase, whereas those who have a higher education level find mobile travel apps more useful during the travelling phase. This result is in agreement with the current study and it was conducted in the same market.

A study by Farhana (2014) consisted of mostly unemployed mobile banking customers in Bangladesh, with a total sample size of 57 respondents. The study aimed to examine the factors influencing the adoption of mobile banking in Bangladesh. Findings show that consumers will consider adopting mobile banking as long as it is easy to use, perceived to be useful, and if it is

affordable, but the most critical factor for the customer is cost; the service should be affordable. Masinge (2010) conducted a study among a majority of unemployed respondents. The research investigated the factors that influence the adoption of mobile banking. The study focused on variables such as trust, perceived risk, and perceived cost. Primary data was collected using a self-administered questionnaire, and the total achieved sample consisted of 309 low-income respondents in South Africa. The results of this study confirm that unemployed consumers would adopt mobile banking services if they were perceived to be useful, easy to use, perceived to have a low risk, and also if the providers of the services were trusted. However, the two-abovementioned results were not analogous to the current study since the focus was on a majority of unemployed respondents.

Although the results show mixed outcomes, the majority of the abovementioned studies show that the education level of mobile app customers is proven to be a significant driver of customer attitudes.

6.5 Limitations and future inquiry direction

The current study reported on customer satisfaction with mobile app business categories (mobile banking, e-hailing services, food delivery services, online-based retailers, and traditional brick and mortar retailer mobile apps) combined, where future inquiries could examine them as separate entities to discover if they resulted in different outcomes. The conceptual mobile app customer satisfaction research model for this study was supported. Future research could validate the results, or conceptualise an adjusted model adopted from this study. This study was conducted among Generation Y consumers, whereas other studies can focus on different cohorts such as Generation X and Generation Z. A convenient sample method was used to select the respondents. Research in the future could replicate this study and apply a probability sampling technique in order to get a more representative sample for generalisation purposes. The research methodology is quantitative in nature so to statistically validate the results; nonetheless, future research could be qualitative in nature to allow for a deeper understanding of the influencers of customer satisfaction with mobile commerce apps. The questionnaire for this study is designed only to measure the objects of study for a given time period; however, a tracking measure methodology would result in a more detailed trackable findings. The sample consisted only of respondents in Cape Town, South Africa, and other researchers could focus on different regions in South Africa and other countries for comparison purposes.

6.6 Conclusion and recommendations

The fourth industrial revolution has brought about technological advancements that cannot be ignored by businesses globally. This is due to the fact that consumer needs keep evolving as they are exposed to innovative ways of doing things in their lives. Hence, consumers generally extend their interest in technology once they have been exposed to the convenience that it offers. Just as mobile devices have done since they were introduced and evolved into the current smartphone era. Smartphones are now everything to consumers, given that they are primarily used not only to make phone calls but also to do a variety of tasks and activities such as taking pictures, making memorable videos, sending instant messaging, and plug and play mobile apps for activities such as banking, e-hailing service, food delivery services, retail stores, and online retail stores to name a few. Therefore, businesses that are continuously looking for growth tailor their business models in order to play in the space in which consumers move. In doing so, it is essential to provide products and services through these channels while placing the customer at the centre of the business strategy.

The results of this study contribute to the existing body of knowledge, yet it has also focused on an area of literature, which is still in its infancy, particularly literature on mobile commerce apps and customer attitudinal behaviours among the South African Generation Y market segment. Therefore, this section focuses on conclusions and recommendations based on the findings according to the study's primary and secondary research objectives.

The empirical findings determined that in general, Generation Y members are satisfied with the experience they have had of using mobile commerce apps, and through this result, the primary objective of this study has been fulfilled. The secondary research objectives showed that some usage characteristics significantly influenced Generation Y satisfaction with mobile shopping apps. Mobile app categories such as mobile banking, e-hailing taxi services, online retail stores, and food outlets and delivery mobile shopping apps lead to higher levels of customer satisfaction among Generation Y consumers. The device used to access mobile commerce apps also showed a significant influence, in that those who accessed mobile shopping apps using tablet computers and smartphones showed a greater customer satisfaction with mobile commerce. Length of usage, mobile shopping engagement frequency, mobile shopping app spending, and marketing communication response are other usage characteristics that influence the relationship between customer satisfaction and mobile app usage experience. The results proved that Generation Y consumers who engaged in mobile shopping for a greater number of years, engaged in mobile shopping more frequently, responded to marketing communications on mobile shopping apps more frequently, and spent higher amounts via mobile shopping apps were generally more satisfied with

mobile commerce apps. Demographic characteristics, which displayed favourable attitudinal responses towards customer satisfaction among Generation Y respondents, include the following: younger Generation Y respondents; those who have completed higher levels of education; and self-employed, employed full-time or employed part-time millennial respondents. Thus, the third research objective was also partially achieved.

At the time of writing this conclusion, the global lockdown due to the Coronavirus epidemic has resulted in South African businesses stimulating their uptake of mobile shopping apps among other digital commerce platforms, and thus they should focus on improving customer experience within mobile shopping apps in order to increase word of mouth among consumers, and ultimately to increase customer loyalty. Regarding the drivers of customer satisfaction, businesses should take into account that customers want to engage with mobile apps that they trust, that they feel are easy to use and are useful, and that they would enjoy engagement. Customers' characteristics and external influences should also be taken into account such as the level of innovativeness and level of involvement towards mobile commerce app satisfaction, whereas social influence may have a negative influence on customer satisfaction among the Generation Y cohort. It is also important to take into consideration the type of mobile devices customers use to access mobile shopping apps, how long they have been engaging with mobile shopping apps, the frequency of use per shopping occasion, the average monthly spend through the mobile app channel, and whether customers respond to marketing communication delivered via mobile shopping apps. When defining a target market, marketers should also keep in mind that certain demographic variables have a significant influence on customer satisfaction with mobile shopping apps. The age of the customer is one of the key influential demographic variables since younger customers are most satisfied with mobile apps; the education level which is key to the understanding of literacy and functionalities of technological advancements; and employment status of customer, which goes hand in hand with economically active customers who possess the buying power.

The conceptual model of this study has shown that there are several constructs that significantly influence customer satisfaction in mobile commerce, but not all hypothesised constructs were validated as driving customer satisfaction with mobile commerce. The results also provide insight regarding factors that need improvement if mobile commerce vendors wish to achieve ultimate customer satisfaction with the mobile distribution channel.

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Appendix A: Questionnaire consent form

RESPONDENT INFORMATION LEAFLET AND CONSENT FORM

Title of the research project:

Post-purchase experiences as antecedents to customer satisfaction within mobile commerce in Cape Town

Principal investigator: Atandile Ngubelanga

Address: Cape Peninsula University of Technology, Keizersgracht Street, Cape Town

Contact number and e-mail: (021) 486-5022; atandilen@gmail.com

Dear Customer,

The objective of this questionnaire is to evaluate consumers' post-purchase experiences as antecedents to customer satisfaction within mobile commerce. Should you be willing to participate, you must be 18 years of age or older. You will be required to answer questions regarding your mobile app usage and shopping, as well as complete a section regarding your demographical details (gender, age, level of education, employment status and population grouping).

As participation to answer this questionnaire is voluntary, you are free to withdraw at any time during answering of the questionnaire.

The questionnaire will take approximately 5-10 minutes of your time. As the respondent, you will gain no direct benefit from participation, but added generalized knowledge may be obtained. No discomfort, harm, risk or injury is expected to occur as a result of your participation in this research project.

The information that you provide to us will be used as part of our research, while your identity will not be revealed and your responses will remain anonymous. Your participation in this research is appreciated. Please sign below if you are willing to participate.

Declaration by participant

By signing below, I _____ agree to take part in the research project entitled:

Post-purchase experiences as antecedents to customer satisfaction within mobile commerce in Cape Town

I declare that:

- I have read or had read to me this information and consent form and it is written in a language in which I am fluent and with, which I am comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this research project is **voluntary** and I have not been pressured into taking part.
- I may choose to discontinue the research project at any time and will not be penalized or prejudiced in any way.

Signed at *(place)* _____ on *(date)* _____ 2018.

_____ _____

Signature of participant **Signature of witness**

Declaration by investigator

I *(name)* _____ declare that:

- I explained the information in this document to _____
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research project, as discussed above.
- I did not use an interpreter.

Signed at *(place)* _____ on *(date)* _____2018.

_____ _____

Signature of investigator **Signature of witness**

Appendix B: Questionnaire

Mobile Shopping Apps - Customer Satisfaction Questionnaire

Thank you for voluntarily participating in this study on mobile shopping apps. The survey will not take longer than 10 minutes to complete and no personal particulars are requested. Responses are confidential and will provide valuable information on your mobile shopping app experience.

1. Which mobile shopping app categories have you engaged with? Tick **ALL** that apply!

- ☐ Mobile banking (ABSA, FNB, Standard Bank, Nedbank, Capitec, etc.)
- ☐ E-hailing taxi services (UBER, Taxify, etc.)
- ☐ Online retail stores (Takealot, Amazon, Zando, Spree, Superbalist, OLX, Gumtree, etc.)
- ☐ Retail stores (Woolworths, Makro, etc.)
- ☐ Food outlets & delivery (Debonairs, Steers, McDonald's, Mr Delivery, UBER Eats, etc.)
- ☐ Other_____

2. Which of the above mobile shopping app category engages you the MOST? Tick **ONE**

Banking ☐ E-hailing taxi ☐ Online retail ☐ Retail ☐ Food outlets & delivery ☐ Other ☐

3. Which device do you prefer to use when accessing mobile shopping apps? Tick **ONE**

Tablet ☐ Smartphone ☐ Feature phone ☐ Other ☐ Please specify _____

4. How long have you engaged in mobile app shopping? Tick **ONE**

≤ 1 year ☐ 2 years ☐ 3 years ☐ 4 years ☐ ≥ 5 years ☐

5. How often do you engage in mobile shopping? Tick **ONE**

Rarely ☐ Sometimes ☐ Often ☐ Always ☐

6. How many hours do you spend on your mobile shopping per occasion? Tick **ONE**

Less than ½ hour ☐ ½-to-1 hour ☐ 2 hours ☐ 3 hours ☐ 4 hours or more ☐

7. How often do you respond to mobile apps marketing communications? Tick **ONE**

Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always ☐

8. How much do you spend on an average month using mobile app shopping? Tick **ONE**

Less than R1 000 ☐ R1 001-R2 000 ☐ R2 001-R3 000 ☐ R3 001-R4 000 ☐ R4 001 or more ☐

9. Demographic factors

9.1. What is your gender?

Male ☐ Female ☐

9.2. Your age (in years)?

18-22 ☐ 23-27 ☐ 28-32 ☐ 33-37 ☐

9.3. Your highest level of education?

Grade 8-11 ☐ Grade 12 ☐ Completed Grade 12 ☐ Post-matric diploma/certificate ☐

Degree ☐ Postgraduate degree ☐

9.4. Your employment status? Employed full-time ☐ Employed part-time ☐ Self-employed ☐

Unemployed ☐ Other ☐ Please specify _____

9.5. With which population group do you associate yourself most?

Black ☐ Coloured ☐ Indian/Asian ☐ White ☐

10. Please indicate the extent to which you agree/disagree regarding your mobile app shopping experience statements (TICK ONE block per statement):

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Trust					
Transactions via mobile shopping apps are safe					
Privacy of mobile shopping app users is well protected					
Mobile shopping app transactions are reliable					
Security measures in mobile shopping apps are adequate					
Social influence					
Family/friends influence my decision to use mobile shopping apps					
Media (TV, radio, newspapers) influence my decision to use mobile shopping apps					
I think I would be more ready to use the services of mobile shopping apps if they were used by people from my social circle					
Perceived usefulness					
Mobile shopping apps improves work performance					
Mobile shopping apps improves productivity					
Mobile shopping apps improve efficiency					
Mobility					
Mobile shopping apps can be used anytime					
Mobile shopping apps can be used anywhere					
Mobile shopping apps can be used while traveling					
Using mobile shopping apps is convenient because my phone is almost always at hand					
Perceived enjoyment					
Using mobile shopping apps is fun					
Using mobile shopping apps is enjoyable					
Using mobile shopping apps is engaging					
Perceived ease of use					
Learning to use mobile shopping apps is easy for me					
My interaction with mobile shopping apps does not require a lot of mental effort					
My interaction with mobile shopping apps is understandable.					
I can install mobile shopping apps with my existing applications without any conflicts					
Overall, I think mobile shopping apps are easy to use					
Involvement					
I am very interested in the products and services offered over the mobile phone					
My level of involvement with the products and services offered over the mobile phone is high					
I am very involved with the mobile phone buying-selling environment					
Innovativeness					
If I hear about some new information technology (IT), I will seek out ways of experiencing it					
I am usually the first among my friends to try out new IT					
I enjoy experiencing new IT					
Customer satisfaction					
I am quite satisfied with mobile shopping app services					
Mobile shopping app services meet my expectations					
My experience with using mobile shopping apps is positive					

Thank you for your time!

Appendix C: Ethics clearance certificate

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Symphony Road Bellville 7535

Office of the Chairperson **Research Ethics Committee**	**Faculty:** **BUSINESS AND MANAGEMENT SCIENCES**

At a meeting of the Faculty's Research Ethics Committee on **2 May 2018**, Ethics Approval was granted to **Atandile Ngubelanga (215079701)** for research activities of **Masters of Marketing** at the University of the Cape Peninsula University of Technology.

Title of dissertation/thesis/project:	POST-PURCHASE EXPERIENCES AS ANTECEDENTS TO CUSTOMER SATISFACTION WITHIN MOBILE COMMERCE IN CAPE TOWN Lead Researcher/Supervisor: Dr. R Duffett

Comments:

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	**4 May 2018** **Date**

Clearance Certificate No | 2018FBREC521

Appendix D: Copy editor certificate

Ken Barris, PhD

Editing and research writing services

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20 October 2020

To whom it may concern

This is to certify that I have edited the following thesis by Atandile Ngubelanga to professional standards:

> Post-purchase experiences as antecedents to customer satisfaction within mobile commerce in Cape Town.

Best regards

KEN BARRIS

Appendix E: Turnitin similarity report

Post-purchase experiences as antecedents to customer satisfaction within mobile commerce in Cape Town

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