Gordon Institute of Business Science
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Mobile payment adoption in South Africa: merchant's perspective

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ABSTRACT

Businesses today must strive to adapt to ever-changing technology. Moreover, mobile payment systems are altering many businesses by adding a new dimension to traditional payment channels through the use of mobile technology. Traditional card systems are well established and have a global presence. To compete with the status quo, mobile payment systems have to generate and sustain value propositions that will attract large customers to reach critical mass if these alternative payment methods are to have a formidable future.

Merchants play a vital role in mobile payment systems supporting the supply side of the eco-system by provide service to customers as well as funding the system by paying a portion of the revenue to it. By understanding the benefits and challenges merchants' experience, service providers can better plan and enhance mobile payment systems to grow market size and replace or compete with traditional payment methods.

A qualitative study was conducted with twelve merchants from different backgrounds. Both inductive and deductive analysis approaches were used to analyse the data collected. This research study provided the insights into the factors that affect the adoption of mobile payment systems by merchants. These factors were classified under three categories namely drivers, barriers and additional factors. Based on these findings a model was prepared that expresses the factors for mobile payment adoption.

Key words:

Mobile payment systems

Contact-less mobile payments

M-payment

M-commerce

DECLARATION

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

Kiran Pidugu

Signature

Date

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CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Introduction

Technological advancements in the field of mobile communications have enabled the rise of mobile payment markets, which have become one of the major components of mobile commerce (Hu, Li, & Hu, 2008; Varshney & Vetter, 2002). Mobile payment eco system is very promising and has emerged as one of the hotly contested fields of investment, with many stakeholders attempting to attain market share. These stakeholders include mobile network operators, mobile device manufacturers, financial services firms, software and technology providers, as well as the government (Au & Kauffman, 2008; Liu, Kauffman, & Ma, 2015; Miao, Xiong, & Zhou, 2014).

Mallat (2007) defined mobile payment as *"use of a mobile device to conduct a payment transaction in which money or funds are transferred from payer to receiver via an intermediary, or directly without an intermediary"* (p. 415). Another definition which similarly defines mobile payments is that payments are carried out by mobile devices (such as smart phones, tablets, phablets, PDAs and other mobile devices) in exchange for goods and services (Dahlberg, Mallat, Ondrus, & Zmijewska, 2008; Krueger, 2001; van der Heijden, 2002). These definitions allude to the mobile payment eco-system.

For the purpose of this research the definition of mobile payment is extended by involving a mobile application which is downloaded on a smart phone, linked to a bank account or credit card for performing financial transactions using a Quick Response (QR) code based scanning technology. Most of the modern smart phones have an in-built camera that helps to scan QR codes. QR codes help to determine the receiver of the payment or the amount or both depending up on the type of services available on the mobile application (Staykova & Damsgaard, 2015; Suryotrisongko & Setiawan, 2012).

1.1.1 Mobile Industry

A recent report provided by Ericsson explained that mobile subscriptions are estimated to reach 9.2 billion by 2020 (Ericsson, 2015), which demonstrates the huge potential of the mobile industry. Mobile banking users are estimated to exceed 1.75 billion by 2019, which represents nearly 32% of global adult population (Juniper, 2014a). Companies that can utilise this mobile platform have a wide sphere of control in which they can operate.

Technological advancements for mobile devices such as smart phones, tablets and phablets occur at a tremendous rate. Producers of mobile handsets and mobile Operating Systems (OS) develop new features annually to remain competitive (Kourouthanassis & Giaglis, 2012). Adding social connectivity to this mix creates hyper-connected societies.

1.1.2 Mobile Applications

Downloadable mobile applications have revolutionised mobile devices by creating intense competitions among various stakeholders such as mobile handset providers, cellular service providers and IT companies (Fisher, 2015; Liu et al., 2015). The fastest growing segments of downloadable software are mobile applications. Global mobile advertising market is forecasted to grow to $41.9 billion by 2017 from $13.1 billion in 2013 that show the growth and the importance for mobile market (Gartner, 2014).

In a very short time, the number of applications available has increased tremendously. This has caused a change in the way companies use mobile applications to provide various services, content and personalised applications to a large heterogeneous population. Thus mobile applications play a vital role in today's m-commerce (Lee & Raghu, 2014).

1.1.3 Mobile Payment Eco-System

Researchers have broadly defined m-commerce, taking into consideration the different types of transactions that are performed by using mobile devices. The ubiquitous nature of the mobile device has given rise to different types of transactions with a wide range of

categories (Clarke, 2008; Siau & Shen, 2003). Within the gambit of mobile commerce, mobile payment specifically deals with financial transactions that are related to either micro or macro payments, which are classified based on the financial amount of the transaction (Mallat, Rossi, & Tuunainen, 2004).

Mobile payment eco-system has many stakeholders and each stakeholder has their own expectations, motivations and capabilities and is able to create many opportunities, this has led to creating a highly fragmented market that develops at slower pace. Dahlberg et al. (2008) suggested that as long as the roles of the key players are unclear, the mobile payment services industry will not achieve rapid growth.

There are multiple mobile payment systems in the eco-system, and most of these solutions are not inter compatible. This creates a challenge for the consumer and merchants to adopt any single solution (Mallat & Tuunainen, 2008; Silic, Back, & Ruf, 2014)

The foot print of the mobile industry and the quality of service or mobile network coverage is country specific, and the mobile payment eco systems is dependent up on the mobile network infra-structure (Dahlberg et al., 2008), therefore it is country specific which provides credence for the exploration of the adoption of mobile payment systems in developing countries such as South Africa.

.Mobile payment systems are still mostly limited regarding country or geographical location due to external factors like regulations. This provides further motivation to perform research concerning the adoption of mobile payment systems from a merchant perspective in a South African context (Dahlberg, Guo, & Ondrus, 2015).

1.2 Academic Motivation

There is a continuous drive for research in the mobile payment industry. This is fuelled by rapid changes in technology and changes in the relationships between various stakeholders (financial institutions, mobile network operators, mobile device producers, regulators) in the mobile payment industry (Dennehy & Sammon, 2015).

Dalhberg et al. (2015) conducted a meta-analysis that confirmed that 188 articles have been published in last eight years (2007-2014) in different categories. This commitment to research demonstrates the growth in the number of investigations pertaining to the topic of mobile payment. This study discovered that most of this literature analysed three main categories, which included consumers' perspectives of mobile payments, mobile technology and mobile payment market and providers (eco-system). It was revealed that there are large gaps in the other categories such as legal and regulatory standards, merchant adoption, and mobile payment culture.

Literature concerning mobile commerce and mobile payment adoption from a consumer perspective does exist (Chong, 2013; Maity, 2010; Maity & Dass, 2014; Siau & Shen, 2003; Wong & Hsu, 2008), but clearly there is a dearth of information in the area of mobile payment systems from a merchant's perspective (Dahlberg et al., 2015; Dennehy & Sammon, 2015). Dahlberg et al. (2015) mentioned that there is not much literature available regarding merchant adoption when compared to studies available on consumer perspective.

This research report aimed to build on this specific gap in the literature, with the intention to convey the merchant's perspective within the context of small and medium businesses.

1.3 Research Motivation

Mobile payment systems are becoming an important payment mode for today's businesses (Dahlberg et al., 2008; Jain, 2014; Mallat, 2007; Mallat & Tuunainen, 2008; Staykova & Damsgaard, 2015). There is a growing need for exploring mobile payment systems adoption. The literature available on new mobile payment systems that is used on smart phones or tablets remains scarce. The knowledge gap due to the lack of literature is further aggravated by the importance of understanding the adoption of mobile payment systems and how it fits within the contemporary mobile commerce ecosystem (Shaikh & Karjaluoto, 2015).

The mobile payment systems are lagging behind their initial expected growth, and one of the main reasons is that, there is a plethora of contact-less payment systems

competing for market share (Chae & Hedman, 2015). There is a critical need for an analysis of merchants' expectations and incentives to support mobile payment systems (Dahlberg et al., 2008).

Merchants or business owners are vital stakeholders in that their adoption or expansion of mobile payment services is pivotal determining factors for the mobile payment eco-system (Mallat & Tuunainen, 2008). Merchants play a dual role in the mobile payment eco-systems; from a consumer perspective, merchants are the service provider as well as merchants themselves being consumers of the service providers (e.g.: banks, mobile operators) as they pay for the system mostly.

Merchants are also the first point of contact for a consumer for a mobile payment system, placing further importance on merchant adoption. The literature available from a merchant perspective is limited (Gaur, Avison, & Ondrus, 2013; Mallat & Tuunainen, 2008). From business world there is keen interest n mobile payment eco system due to the expected growth of this industry. A recent study show that payments using mobile devices would value approximately $507 billion in 2014 (Juniper, 2014b). This kind of growth creates demand for research on the mobile payment industry from a business perspective.

1.4 Research Problem

This research explored the ways businesses are adapting to the ever-changing mobile payment environment. The research sought to examine the enablers and barriers for businesses to potentially replace established payment mechanisms such as cash and physical card transactions, towards mobile payment systems. The research objectives are stated below.

1.5 Research Objectives

The objectives of this research were to explore the values added by the mobile payment systems to the business owner or merchant. The research sought to determine the drivers that enable the adoption of mobile payment systems and the barriers that inhibit

the expansion of such payment mechanisms, thus providing valuable information to both the realms of academia and business.

The study explored the main factors that influence the adoption of the mobile payment systems. Following are the objectives of this study:

Objective 1: To determine the key drivers that aid in adoption of mobile payment service by a merchant or business owner.

Objective 2: To determine the barriers that inhibits the expansion of a mobile payment service by a business owner.

Objective 3: To determine the additional country-specific factors that influences the merchant adoption of mobile payment system.

This research aimed to provide information on adoption of mobile payment systems from a merchant's perspective and especially in a South African context. This research sought to help businesses and academia understand mobile payment systems from a business owner's perspective. Literature review available on mobile payment systems will be presented in the next chapter.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter 1 introduced to the mobile payment systems and also discussed the motivation for this research study. This chapter discusses further on mobile payment eco system, emphasising the research already conducted in this field. Then the evolution of mobile applications and their impact on modern day businesses is discussed, followed by the pertinent factors that determine the adoption of mobile payment services from a merchant perspective.

2.2 Mobile Payment Systems

Businesses are currently confronted with the challenge of dealing with intense competition and there is a need to continuously adapt to the ever-changing technological advancements in the industry, which partly involves dealing with changes in payment channels. Mobile payments have provided a new channel of commerce that did not exist few years ago, and has created a great deal of competition among various payment service providers (Jain, 2014; Staykova & Damsgaard, 2015).

Jain (2014) suggested that mobile payment systems are using the ubiquitous nature of cellular coverage to create a new paradigm that was never present before, and it has enabled the transition of traditional payment systems into mobile payment systems. By contrast Kim, Mirusmonov and Lee (2010) argued that new complex mobile payment eco-systems have created due to the nature of the industry, furthermore intense competition and the lack of standards has created an unfavourable situation for all consumers or merchants. This resulted in different strategies that service providers needed to be applied targeting user groups and mobile payment systems are in their early stages (Liu et al., 2015).

Mobile payment eco-systems have various service providers, which creates a challenge from a merchant's perspective to understand various models and how these operate in

terms of technical and functional aspects. This information directly influences the decisions towards mobile payment systems (Kim, Mirusmonov, & Lee, 2010).

Much of the current research has been focused on consumer adoption and the critical factors that influence consumer adoption of the mobile payment system in various countries (Liu et al., 2015; Slade, Williams, & Dwivedi, 2013; Slade, Williams, & Dwivedi, 2014; Thakur & Srivastava, 2014; Venkatesh, Thong, & Xu, 2012). Existing literature on consumer adoption of mobile payment systems has provided greater insights into consumer behaviour and their intention to adopt the mobile payment systems. One of the important factors in consumer adoption is the accessibility of mobile payment terminals and this is where the merchant's role becomes evident.

Merchants play a key role in these eco-systems. Mobile payment system needs mass adoption by consumers to motivate merchants to adopt the new trend. Conversely, high availability of a standard mobile payment system across most of retail businesses will encourage consumer adoption. Without merchants adopting mobile payment systems it creates an unfavourable situation for consumers. This gives rise to classical analogy of "*what came first – the chicken or the egg?*" which has been used by researchers to describe the challenges faced by both merchants and consumers (Dahlberg et al., 2008; Dennehy & Sammon, 2015).

Researchers have argued that there is a difference between mobile payment and mobile banking, stating that if banks are involved in the services offered it is termed mobile banking, and if banks are not directly involved it is termed mobile payment (Karjaluoto, Cruz, Barretto Filgueiras Neto, Muñoz-Gallego, & Laukkanen, 2010). mallat et al. (2004) differed by stating that mobile payments form part of the mobile financial applications along with mobile banking.

Technological innovation has led to various mobile payment mechanisms such as mobile banking, mobile wallets, mobile payments (e.g. *Google Wallet*), biometric payments (e.g. *Apple Pay*], SMS payment (e.g.: *PayPal*), Quick Response (QR) codes (e.g.: *SnapScan, Zapper, FlickPay*), and near field communication (e.g.: *ISIS, Apple Pay, Google Wallet)* (Chae & Hedman, 2015; Fisher, 2015; Gerstner, 2015; Kim et al., 2010; Mallat et al., 2004; Mallat & Tuunainen, 2008; Slade et al., 2013). This has created a complex eco-system that has various types of systems with different technologies. The key

stakeholders, such as merchants and consumers have questions about which system they will select, and they have to justify their reasons for selecting a certain option. These factors have led to vast amounts of literature on mobile payment in an attempt to answer those questions.

This research report explored the contact-less mobile payment system which uses scanning QR codes as a method of payment.

2.2.1 Contact-less payment method

Quick Response codes, known as QR codes, are two dimensional barcodes that are used to store alphanumeric data and helps in scanning a product or information quickly from QR scanning device (Gao, Kulkarni, Ranavat, Chang, & Mei, 2009). See below figure 1 which shows an example of QR code used by a merchant. Most of the latest smart phones have the capability of scanning any QR code using the in-built camera, for example in South Africa SnapScan and Zapper use QR code-based mobile payment systems (SnapScan, n.d.; Zapper, n.d.).

Figure 1: QR code for mobile payment

Source: (SnapScan, n.d.; Zapper, n.d.)

2.3 Drivers of Mobile Payment Adoption by Retail Businesses

Mobile payment systems were providing alternatives to exiting traditional card based payment systems, in order to compete this new payment systems and attract merchants and consumers it needs to provide additional value. In the following sections some of the factors that aid in mobile payment adoption were discussed.

2.3.1 Convenience

Consumers have an important role in the mobile payment eco-system as they are the main users of the systems. If they place the demand on mobile payment services, it allows them to determine the success of these payment methods by adopting and using these services.

Over time and with the evolution of technology, many aspects of these critical factors could change. The increase in technology in terms of network speeds and mobile applications for different purposes has further encouraged the use of mobile payment services. The convenience of mobile devices adds value to the consumer and it has therefore become critical that businesses provide convenient services with which the customers are comfortable (Anckar & D'Incau, 2002).

Mobile payment systems help are more convenient for the customer because these methods reduce the need for carrying physical cash and also help in providing additional payment channels (Mallat, 2007). Some of the mobile payment systems provide additional services, such as finding the closest merchant from a mobile phone that uses the customer's location. These features further increase customer convenience.

2.3.2 Cost savings

From a merchant perspective, cost is a large value driver for adoption of mobile payment systems (Chae & Hedman, 2015). Cost relates to the license or subscription fees paid by the merchants or business owner to the mobile payment system provider. In the case of SnapScan there is 3% transaction fee (SnapScan, n.d.). Cost has a significant impact on adoption of the mobile payment eco-system (Mallat, 2007).

Mallat and Tuunainen (2008) argued that the cost of managing mobile payment systems should not exceed traditional payment systems, in order to remain competitive. This leads to the point of cost saving either directly relating to the commission paid to the vendor or indirectly by saving the time spent with customers at a point of sale, which helps the merchant in attending to more customers. However previous research suggests that most of the service providers promoted their systems by focusing on technologically driven approaches. Essentially, merchants' needs have not traditionally been given higher importance, which has further delayed the adoption process (Ghezzi, Renga, Balocco, & Pescetto, 2010).

2.3.3 Business growth with new customers and services

According to Clarke (2008) mobile technology provides the feature of ubiquity (anyplace, anytime), which is one of the most important features that distinguish mobile payment systems from traditional Internet devices (e.g.: desktops). Mobile payment systems use this value proposition via mobile devices and help to provide payment services to many businesses (e.g.: remote places, mobile markets, *ad hoc* markets such as weekend or monthly speciality markets and fairs).

Mobile payment services help to attract new customer bases, to target those who prefer the mobile payment systems compared to traditional way of carrying a physical wallet or cards, which in turn results in business growth for the merchant (Mallat & Tuunainen, 2008). Mobile payment systems can help improve the customer relationship by providing real time information to the merchants about the customer and therefore merchants can provide any additional value added services or offers, such as digital loyalty cards or coupons (Dennehy & Sammon, 2015).

Technology helps to provide real-time marketing or location-based marketing that helps merchants to target any new customers or existing customers. An example of this is a coffee shop owner who utilises his spare capacity to target any customers by promoting instant offers.

2.3.4 Ease of use

Merchants are one of the main pillars of this eco-system, and adapting to a new payment system should not be an additional burden to the merchant. Mobile payment systems have to provide more value to a business owner to encourage the adoption over a standard system which is more common, and one way to achieve this is for mobile payment systems to be simpler and faster (Mallat, 2007).

The simpler the mobile payment system, the easier it is to use by any merchant. This further reduces the indirect costs like training the staff and integrating the existing point of sale or gaining quality feedback or reports from the mobile payment system.

Time is a valuable commodity for both the consumer and the merchant. The faster the system is, the more content both consumers and merchants will be and this will encourage greater adoption of mobile payment systems. Faster mobile payment systems aid in high throughput (faster processing of collecting money from customer) at the point of sale (Dennehy & Sammon, 2015).

2.3.5 Security

Mobile payment systems typically involving merchants and consumers is a two-sided platform (Staykova & Damsgaard, 2015) where both parties need to feel secure about the transactions that have taken place. Mobile payment involves the consumer being in control of the payment transaction, where the payment is made from a mobile phone and an instant notification is sent to both consumer and merchant. This kind of instant notification helps in gaining the confidence of the merchants and increases the perceived level of security in the system (Mallat & Tuunainen, 2008). Another noticeable factor is that with a mobile payment transaction both consumer and merchant are identified uniquely and interact directly, this further helps the security aspect from a merchant perspective (van der Heijden, 2002).

2.3.6 Enhance Business Image

Changes in technology drive changes in the lifestyle and the way businesses are operated. Adopting a mobile payment system in the businesses brings additional changes. Using mobile payment systems help in providing additional customer offering and thus help businesses to increase the touch points with their customers.

Mobile payment system provide an additional offers that was not previously available. It demonstrates that the business is progressive with current trends. Setting up mobile payment terminals or a logo has resulted in creating a positive business image (Mallat & Tuunainen, 2008).

2.4 Barriers to Mobile Payment

In order to succeed mobile payment systems have to compete with exiting payment channels which are established and matured. Earlier research shows that mobile payment systems are not growing as fast as expected initial expected growth (Chae & Hedman, 2015), this leads to the discussion of what are the challenges in mobile payment systems that slowing down the have adoption rate.

In the following sections some of the factors that are barriers for adoption of mobile payment systems are discussed

2.4.1 Trust and Perceived Risk

Perceived risk has been used to explain consumer behaviour for many years (Taylor, 1974). Perceived risk regarding the Internet refers to a combination of one or more aspects that include financial, performance, social, psychological, physical and time taking risks that a user experiences while performing online transactions (Forsythe & Shi, 2003; Wu & Wang, 2005).

Research conducted by Mallat and Tuunainen (2008) suggested that merchants considered mobile payment systems are reliable. On the other hand, de Reuver, Verschuur, Nikayin, Cerpa, and Bouwman (2014) argued that having different service

provides such as telecommunication operators, IT companies and banks creates a complex eco-system that does not help winning the trust of consumers or merchants.

Technological developments in the case of building customer trust for mobile technologies requires providing better security measures on the platform, to provide confidence for the users (Siau & Shen, 2003). Service providers has to focus on the customers and merchants when developing good business practices to increase the confidence among them and not just the technology aspect.

2.4.2 Complexity and Lack of Standardisation

Mobile payment eco-systems have always appeared to be highly fragmented, with many technologies co-existing and being controlled by different stakeholders that create a complex environment. Up until now, there has been no widely accepted technology (Liu et al., 2015). Due to the lack of standardisation, various service providers are pursuing their own interests and have ignored the complexity their actions create for merchants who want to adopt mobile payment systems (Miao et al., 2014). This creates further challenges with respect to the compatibility of existing systems (such as point of sale). Various stakeholders such as mobile operators, financial firms and technology companies are following a competitive approach rather than being cooperative; this situation does not favour the standardisation of the eco-system and thus creates a barrier (Ghezzi et al., 2010).

Interoperability is related to the risk-free compatibility between various devices or systems. Currently the mobile payment market is immensely competitive, with various organisations playing different roles in the eco-system. These kinds of competitive interactions are mostly influenced by the uncertainties in the market of a given technology solution or standard (Dennehy & Sammon, 2015; Liu et al., 2015). Standardisation of mobile payments enhance the interoperability and help to reduce the costs for the stakeholders, consumers and merchants and mobile payment service providers (Au & Kauffman, 2008) .

2.4.3 Lack of Critical Mass

Traditional card payment systems (e.g.: *Visa*, *MasterCard*) are already available widely internationally and these methods have been proven and are predictable. Since these payment systems have transcended to be very mature business processes and already have a critical mass (large acceptance), these operations are cheaper to operate (Au & Kauffman, 2008). To compete and grow in the market size, the mobile payment systems need to be adopted by masses to help reduce the cost by using economies of scale for all the stakeholders. One of the common concerns is the lack of critical mass or simple non-usage by customers and merchants (Mallat & Tuunainen, 2008). The lack of standardisation or universal standards for mobile payment systems are fragmented and have become localised (e.g.: SnapScan is only available in South Africa), which has created further resistance to reach critical mass (Au & Kauffman, 2008).

2.4.4 Consumer Adoption

Consumer adoption of mobile payment system is critical, as they are the final intended users of this system. Lack of critical mass of consumer adoption of a mobile payment system will not help the mobile payment system diffusion. As mentioned before the consumer adoption is linked closely to the amount of merchant adoption and other consumers (Mallat, 2007).

The demand of the mobile payment system is directly dependent of number of consumers willing to accept the payment solution and use them. Based on the earlier researches done from consumer perspective the important adoption factors for mobile payment services are ease of use, trust and security, usefulness, cost, and compatibility (Dahlberg et al., 2008). Some of these factors were discussed in this research as they influence the merchant adoption as well.

2.5 Additional Factors

Mobile payment system as discussed in previous chapter are largely fragmented, many of the systems operate locally specific to the country and there were no dominant system that is available globally.

Dennehy and Sammon (2015) explained these differences in factors that influence mobile payment systems in various countries using contingency theory of technology adoption. These differences are summarised broadly into three categories of contingency theory (Dennehy & Sammon, 2015) namely Legal/ regulation and technology/security and final category includes social/cultural/economic conditions.

Some of these factors were covered in the previous sections as part of the drivers and barriers. Further discussions on some of these topics are covered in the ensuing sections of this chapter, concerning regulations, social culture and internet coverage and their influence.

2.5.1 Regulations

Mobile payment systems generally include multiple stakeholders such as telecommunications operators and banks that have their own local regulations according to their host country (de Reuver et al., 2014), and in some cases there are IT companies that provide mobile applications or mobile handset manufacturers that are not as tightly controlled or regulated as banks or telecommunications providers, which creates a complex eco-system.

Au and Kauffman (2008) argued that the diffusion or adoption of mobile payment also depends on the speed of the settlement of mobile payments, including how quickly the funds are cleared to merchants' accounts.

This was related to the regulations of each specific country. Mallat and Tuunainen (2008) differ this, they stated that the involvement of banks in the mobile payment ecosystem creates a positive consequence for the mobile payment eco-system as banks are more trusted than telecommunications operators or other companies.

Hence, it is dependent on each country to create mobile payment regulations. The stakeholders can then either create positive reactions that can help mobile payment systems to adopt faster or vice-versa.

2.5.2 Social Culture

Each country has its own cultural conditions that are unique, and similarly the economic conditions of each country are also distinctive. Some countries embrace and adopt the new technologies faster than others. Au and Kauffman (2008) mentioned that many consumers recognise the potential value of mobile payments; however there is a gap between potential and realised value as seen by most consumers. Consequently, mobile payment has been more widely accepted in European and some Asian countries than in the United States.

Social influence plays a big role in the consumer adoption, as the adoption of a mobile payment system is based on wide acceptance of consumers. Earlier studies show that there is a big influence of demographics, self-efficacy, and social influence in the context of a new mobile payment adoption (Shin, 2009).

2.5.3 Internet Coverage

The mobile payment industry is dependent on the local mobile industry which is generally different in each country in terms of the amount of subscribers that are based on the population. The mobile penetration rate as well as the technologies that are used must also be considered. For example, in under-developed countries network coverage is still in developing stages and these networks use lower speed networks like EDGE or GPRS, whereas developed countries use the latest and greatest technologies like 3G or 4G to provide better speed and quality service(Liu et al., 2015; Mallat et al., 2004; Silic et al., 2014)

Similarly mobile payment services use different technology depending on the local conditions, such as network infra-structure, regulations, laws or habits (Dennehy & Sammon, 2015). For example the mobile wallet service *M-Pesa* in Kenya uses SMS technology, while in South Africa, US and Europe some mobile payment systems use

technologies such as QR codes or NFC technology, depending on the conditions of the host country.

Many factors that influence the mobile payment systems are discussed in previous sections. In the next section theoretical frame works used in the earlier researchers are discussed.

2.6 Theoretical Backgrounds

Various theories and frameworks have been used in the past by researchers to analyse the mobile payment industry through multiple perspectives, and this section reveals the frame works that was deemed appropriate for performing this research.

Slade et al., (2014) performed meta-analysis that culminated in the Technology Acceptance Model (TAM), with its various extensions, has been the most widely used model for the examination of m-commerce, m-banking and mobile payment adoption. Unified Theory of Acceptance and Use of Technology (UTAUT) has been the second most popular choice of core model (Slade et al., 2014).

The TAM model was proposed by Davis (1989), and has been widely used by many researchers when explaining the adoption of new technologies. It mainly consists of the following constructs: perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using (ATU), behavioural intention to use (BI), and actual system use (AU). These constructs have formed a basis for many other researchers who have extended TAM along with other constructs (Davis, 1989; Slade et al., 2014; Zhang, Zhu, & Liu, 2012).

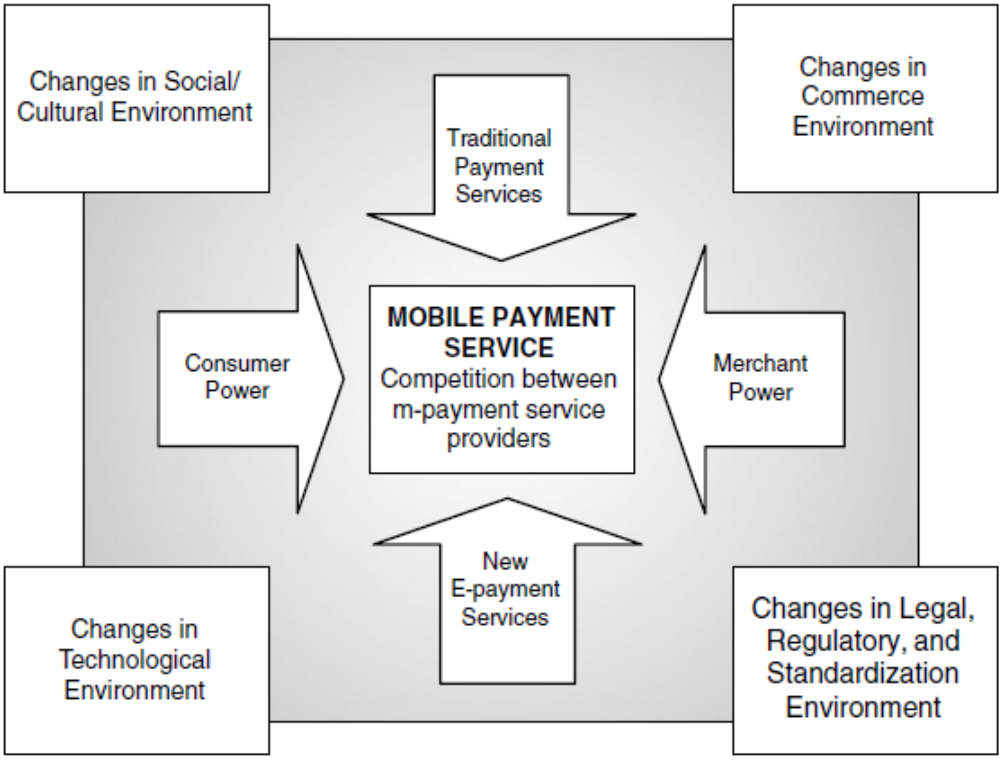
Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by analysing eight prominent models to explain the employee technology acceptance (Venkatesh, Morris, Davis.G, & Davis, 2003). The theory of UTAUT was enhanced by adding additional constructs called hedonic motivation, price value and habit to formulate UTAUT2 (Venkatesh et al., 2012), and explained the behavioural intention and use of technology in the context of consumer acceptance (Venkatesh et al., 2012). Slade *et al*. (2014) recently proposed a research model that extends the UTAUT2 model theory

proposed by Venkatesh et al. (2012) with additional constructs that consist of self-efficacy, innovativeness, trialability, perceived risk, and trust.

The theories discussed above have been widely used in prior research to explain consumer adoption. Some of the important factors that influence consumer adoption include the ease of use, trust and security, usefulness, cost, and compatibility (Dahlberg et al., 2008).

Dahlberg *et al.* (2008) developed a meta-model using Porter's five forces and Contingency Theory to classify the existing literature and determine the factors that influence the mobile payment services market, as illustrated in figure 2.

Figure 2: Framework of factors impacting the mobile payment services market



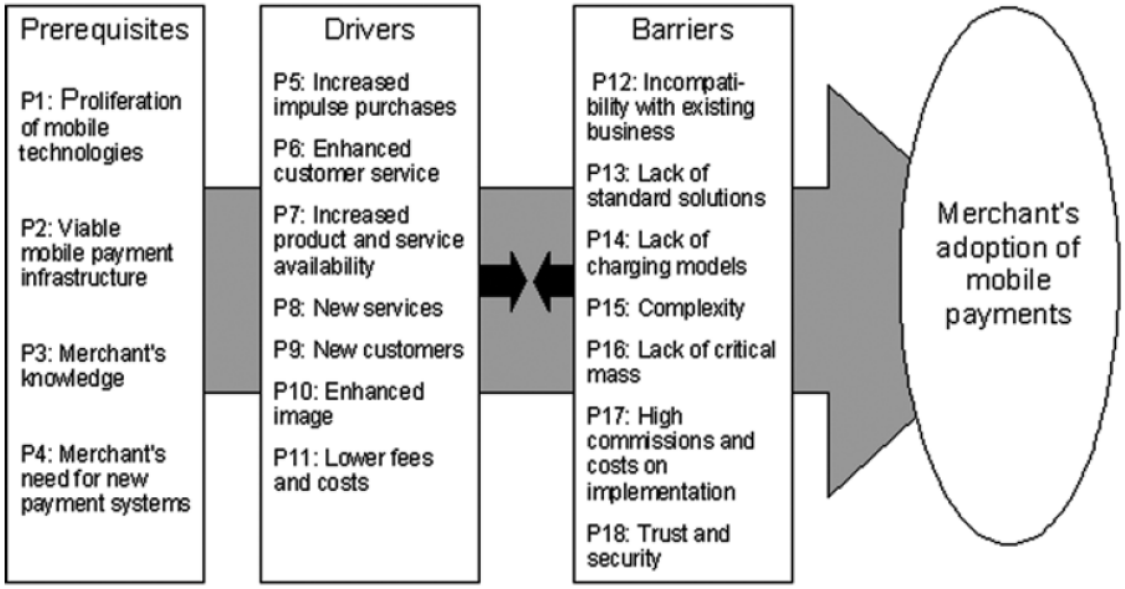
Source: Dalhberg *et al*. (2008)

This framework delineates the factors that impact the mobile payment systems market such as consumer power, merchant power and traditional payment services, as well as new entrants in e-payment (electronic payment services) and competing mobile payment service providers. These factors are further influenced by external forces such as changes in the social, cultural and commerce environment, the technological environment and finally regulatory requirements.

This above framework provides a good foundation for analysing the mobile payment services industry and the whole eco-system, and emphasises various important factors that play a role in the eco-system. However, for this research topic more detailed information was required from a merchant perspective.

Mallat and Tuunainen (2008) proposed a framework for exploring the adoption of mobile payment systems from a merchant perspective, as described in figure 3. This framework consists of prerequisites, drivers and barriers explaining the merchant's side view of mobile payment systems adoption. Some of the limitations in this framework was this research has been performed in a developed country and the factors that influence the developed country merchants may or may not be identical to those that influence developing countries.

Figure 3: Framework for merchant's adoption of mobile payment systems



Source: (Mallat & Tuunainen, 2008)

Based on the literature and the frameworks reviewed, the constructs discussed as part of drivers and barriers are covered from the merchant's perspective. However the influence of local conditions and local culture are not covered adequately and do not provide a merchant's perspective on them. Combination of constructs from both the frameworks covered in figure 2 and figure 3 was used as an underlying base framework for this research.

2.7 Conclusion

Businesses face challenges in implementing and adopting a mobile payment system from an array of mobile payment systems that support and add value to both the consumer and merchant by simultaneously using mobile commerce value propositions and exploiting the economic principles of the digital economy. The literature that has been reviewed confirmed that there are various drivers such as customer convenience, cost savings, business growth and simplicity that aid in increasing the adoption rate of mobile payment systems.

Barriers that influence the adoption of mobile payment systems negatively are trust and perceived risk, complexity and lack of standardisation. Some additional factors discussed include network externalities, regulations and social cultural and economic factors that affect the adoption rate either positively or by slowing down the adoption rate.

The amount of literature available from the peer reviewed journals was limited, due the novelty of novelty of this topic. The researcher had to review published and unpublished articles together with internet sources as they provided recent insights on the mobile payment adoption.

This Chapter critically reviewed the literature and gaps were found further strengthening the need for the study. The next chapter defines the research questions in relation to mobile payment adoption from a merchant's perspective

This Research study examined the various constructs presented in the frame works in this chapter. This study examine these constructs from the merchants' perspective of mobile payment systems adoption in a developing country, in the event of finding new additional insights that would help in enhance the model by adding new constructs to create a new model that covers the factors from a developing country.

CHAPTER 3: RESEARCH QUESTION

This chapter combines the themes that have emerged in Chapter 2, together with the concept that was discussed in Chapter 1 and build the questions that will serve the purpose of the research problem. Research questions become the precursor of the research objectives, this help in answering the research objectives set for a research (Saunders & Lewis, 2012).

Literature suggests that there is a growing need for exploring the reason for adoption of mobile payment system specifically from a merchant's perspective and the amount of the information available in developing countries like Africa is very limited (Dahlberg et al., 2015). This lack of information is explored using the research questions below that are mainly from a dimension of merchants view.

3.1 Research Questions

Research Question 1: What are the key factors that drive the adoption of mobile payment systems by a merchant in a developing country?

Research Question2: What are the key barriers that inhibit the adoption of mobile payment systems by a merchant in a developing country?

Research Question 3: What are the additional factors specific to the country that influence the adoption of mobile payment systems by a merchant?

3.2 Conclusion

The nature of this research is exploratory and aims to answer research questions to gain insight into the research problem. The next chapter will describe the methodology chosen to address these questions and justify the reasons for choosing those methods.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

The previous Chapters provided the theoretical background of the research topic and the research questions. This chapter analyses the appropriate methodology for this research regarding the research objectives.

The research process was conducted in two parts. The first part explored the research area through the use of literature available, as described in Chapter 2, which culminated in succinctly stating the research problem. The second part consisted of collecting the required primary data and analysing that information to reach the research objectives.

Based on the theoretical research, there are limited research studies that have been conducted to explain the merchant perspective of mobile payment adoption (Pham & Ho, in press), much of the Literature available was from a consumer perspective (Chong, 2013; Maity, 2010). There was a dearth of information in the area of mobile payment systems from a merchant's perspective (Dahlberg et al., 2015; Dennehy & Sammon, 2015).

4.2 Research Method

As explained in Chapter 2 and previous section with limited research being available from a merchant perspective, in order to gain more detailed information a qualitative research with exploratory nature was employed for this study. This approach was undertaken to gain more profound insights into merchant's perspectives on mobile payment adoption.

Exploratory study was defined by Saunders and Lewis (2012) as

"Research that aims to seek new insights, ask new questions and to assess topics in a new light" (p.110).

The exploratory method aims to explore the topic intensely and answer the “how” part of the research questions (Punch, 2001; Saunders & Lewis, 2012).

There were two reasons for selecting an exploratory approach. First it helps in gathering general information about a topic that is not clearly understood and in the case of mobile payment adoption there is limited research that has been done in the context of developing country from merchant’s perspective. Second, this industry is fragmented and have many mobile payment systems in the market globally and each system competes for market share. Furthermore there are no dominant payment systems across the globe. So due to the nature of the industry the mobile payment systems available in South Africa are mostly experienced by locals in local conditions.

For these reasons a qualitative approach with exploratory nature was undertaken to gain more profound insights into merchants perspectives on mobile payment systems used in South Africa and what are the factors that support or oppose in adoption by merchants.

Exploratory research is an ideal research method for this research, it also provides a degree of flexibility but this does not necessarily mean absence of direction to the enquiry. Essentially the research commences broadly but narrows down to focus on the research topic (Saunders & Lewis, 2012; Zikmund, 2003).

4.3 Research Design

Saunders and Lewis (2012) stated:

> *“A semi-structured interview is a method of data collection in which the interviewer asks about a set of themes using some predetermined questions, but varies the order in which the themes are covered and questions asked. The interviewer may choose to omit some topics and questions and ask additional questions as appropriate*” (p.151).

The researcher posited that using semi-structured interviews would be the best approach for this research study because more in-depth information would be attained related to how merchants approach the topic of mobile payment system. Semi-

structured interviews would also aid in collecting information from merchants from their perspectives to answer the research questions.

Furthermore most of the merchants from small businesses and were extremely busy with customers, therefore a semi-structured interview helped the researcher to pause and continue with the interview in a semi-structured manner as per the interview guide (mentioned in Appendix A).

Qualitative research was performed using face-to-face or telephonic interviews with business owners who had recently adopted the mobile payment channel to ascertain how they are adapting to the new eco-system.

4.4 Universe

The universe for this research includes all the businesses or merchants that are based in South Africa that have either launched or adopted new mobile payment systems that utilise the QR-code scanning method. The unit of analysis defines what or who should provide the data and at what level of collection (Zikmund, 2003).

There are many mobile payment solutions available in the market (such as *Google Wallet*, *Apple Pay, ISIS, FlickPay*) but not every mobile payment system has the same standards and technologies. Therefore, for the purposes of this research, the universe included all the merchants who use mobile payment applications in South Africa that use QR-code scanning technology.

There are only limited payment solutions available in South Africa that use QR code scanning technology, namely *SnapScan*, *Zapper* and *FlickPay* (Matthew, 2014). None of these systems were dominated and widely acceptable across the nation. And most of these solutions were launched recently and as such, they are in their early stages.

SnapScan launched in 2013 and was developed by *FireID* Company which some won awards. SnapScan re-launched in 2014 through a partnership with Standard Bank. SnapScan is probably the most widely recognised app-based payment system in South Africa. The SnapScan payment solution is one of the solutions that has been locally available for more than two years and has good market presence (SnapScan, n.d.).

For these above reasons SnapScan was selected to be the subject for exploring the factors that influence mobile payment adoption by merchants. The data available on SnapScan's website shows that the company has nearly 18000 merchants all over South Africa (SnapScan, n.d.).

There are many kinds of merchants from different backgrounds and businesses that use Snapscan. For this research study merchants who belong to retail businesses or the food and beverage industry were the target population. Hence the universe for this research included all the businesses that use the SnapScan mobile payment solution as a payment channel in food and retail businesses.

4.5 Sampling Method and Size

A sample is a sub-group of the whole population. The sub-group need not necessarily be a subset of the people (Saunders & Lewis, 2012, p.134). A sampling technique is a method that is followed to select a sample set from the population (Saunders & Lewis, 2012; Zikmund, 2003).

The companies that were selected are from different retail businesses that provide goods and services. These establishments include restaurants, coffee shops, catering companies, as well as shops selling goods, arts and novelties. Some of the sample includes small businesses like crafts men and business owners or merchants who sell at markets, who typically do not have any fixed outlet/shop where they sell their goods and services.

Businesses that use the SnapScan application technology were selected using a non-probability sampling technique, together with purposive sampling. This involves the selection of the businesses that have certain characteristics. Some of the characteristics of the sample include:

- Not all the business owners are from the same suburb in Gauteng province.
- Merchant should have commenced use of a mobile solution for the last three months are more.

- The business owner or the store manager who was interviewed must have knowledge or experience in providing the mobile payment service to their customers.

- Some of the merchants selected are from weekend-free markets in order to find out the experiences of merchants from smaller businesses

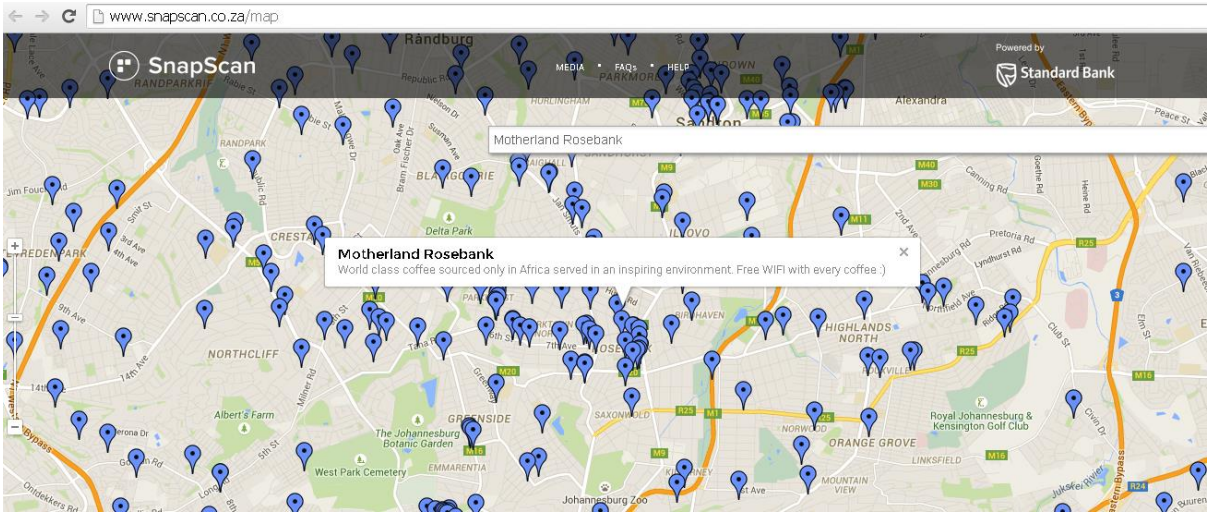
- Some of the merchants were from established businesses that are having stores/shop a physical location presence example a coffee shop.

The rationale for using this sampling technique was that non-probability sample techniques are usually less expensive and less time-consuming than probability samples (Blumberg, Cooper, & Schindler, 2008, p. 252). The selected sample included various types of businesses to ensure the sample covered different businesses in the effort to help explore different views from different types of merchants.

The reasons for selecting SnapScan were that it uses QR-code scanning technology as part of a payment process and it is already implemented in South Africa. Even though this application is still in the early stages, the researcher believed that these facts would help in answering the research question.

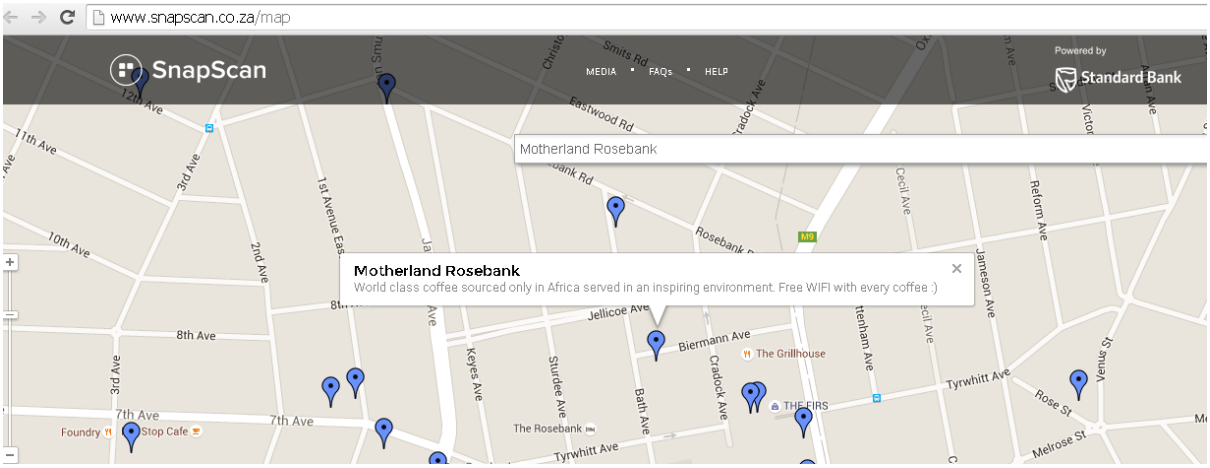
Most of the merchants using the SnapScan system are available on the SnapScan website; there are more than 18000 merchants in South Africa (SnapScan, n.d.). Figures 4 and 5 provide the merchants names and places of operation.

Figure 4: Merchant finder tool in SnapScan website



Source: (SnapScan, n.d.)

Figure 5: Street view of merchant finder



Source: (SnapScan, n.d.)

Due to the time and cost limitations of the research project, the sample size selected included 12 business owners, that use SnapScan as a payment channel for their businesses in the Gauteng Province of South Africa.

4.6 Research Instrument and Pre-test

The main instrument used during interviews of this nature is an interview guide. An interview guide (Appendix A) allows the researcher to conduct the interview in a consistent, systematic and comprehensive manner when interviewing multiple people (Patton, 2002). Questions were open-ended and phrased using colloquial language to ensure there was no room for misinterpretation.

Before conducting the main interviews, a pilot test was performed to test the questions and to determine any problems related to the questions, as well as to assess the understanding of the interviewee regarding the questions. An interview guide was used for research study.

4.7 Data Collection

Data was collected from semi-structured interviews that were conducted face-to-face helped the researcher to decipher the emotions and expressions from the interviewees' body language to provide a more detailed picture (Punch, 2001; Saunders & Lewis, 2012). Telephonic interviews were also conducted for some of the respondents.

Data was collected using a recording device and field notes were written to capture any climaxes that occurred during the interviews. To ensure the accuracy of data collection, all interviews were recorded. Recording the interviews had the additional advantage of being complete in terms of speech and context, and were checked by others using electronic devices. The recordings were transcribed and verified against the recording to ensure its validity.

4.7.1 Conducting the Interviews

There were twelve interviews conducted for this research, of which eight were conducted face-to-face, while the other four were telephonic, as preferred by the interviewees. Eight of the interviews were face-to-face meetings with the owner of the business itself.

Eight of twelve respondents were small business owners who run their businesses at the weekly markets and these interviews were conducted in their stalls or units. Some of these respondents or merchants preferred being interviewed during their business time and as they were busy with the interview, they simultaneously attended to the customers, which resulted in some pauses during the interview.

Four of the interviews were performed with large and medium-scale business owners, whose perspectives were different to the merchants interviewed at the markets. These respondents were the owners of the established businesses such as coffee shops and restaurants.

This research study garnered original research with no secondary data. All the data collected were from interviews conducted, hence all the data is primary data.

4.8 Data Analysis

The Atlas.ti tool was used to analyse the data that was collected and transcribed from the interview records. To analyse this kind of qualitative data, Saunders and Lewis (2012) suggested the following steps:

1. Develop meaningful categories to describe the data.
2. Select the unit of data that is appropriate for the analysis.
3. Attach the relevant categories to units of data.

4.8.1 Data Quality

To retain the overall quality of the data, all interviews audio recording were checked to hear the quality of the audio recording and to ensure whole interview was recorded and nothing is missed. Then all the recordings were send transcribed by using external service providers.

Once the transcribed data is available, researcher has cross compared the data transcripts were same as in recording. And spelling mistakes or missing information is rectified and fixed in the transcripts.

4.8.2 Data analysis using both induction and deduction methods

Saunders and Lewis (2012) stated that deduction tests theoretical propositions using the research strategy, and induction is related to the development of theory as a result of analysing data already collected. This research study was based on existing theories mentioned in the Section 2.6. This helped in developing the research questions based on the factors that influence the mobile payment adoption. Initially the deduction approach was used to collect the data.

Data analysis was completed using an inductive approach, seeking new factors and themes that are connected to data collected. This helped the researcher to connect the factors that were derived from literature and also to identify new constructs that helped in developing a new theoretical model with additional constructs.

Data was analysed by reading through the transcripts and identifying and creating codes or categories where necessary, as prescribed by the induction approach. Once all the data was coded, the codes were grouped into three categories namely drivers, barriers and additional factors. Once coding was completed the data was compared between different codes and code families to identify the similarities and differences.

4.9 Research Limitations

The following limitations of the research design and approach should be taken into consideration:

- Due to the nature of the study being exploratory it implies that the data was analysed to find new factors or themes that are related to the topic of the study; these topics or constructs need to be followed up with a detailed quantitative study to ensure the causal effect of these constructs (Saunders & Lewis, 2012).

- Limitations of time and finance impacted the sample by including only businesses in South Africa, particularly in the Gauteng province.

- The non-probability sampling involved a bias towards the companies to which the researcher had access; therefore the respondents did not represent the population statistically.
- Even though sufficient care was taken, there may be human errors when transcripts were generated from recorded interviews.
- Interviewees may not have disclosed data impacting their businesses which they feel is confidential due to lack of trust of the researcher.
- The limitation of qualitative interviews is that the person being interviewed may not provide the full details due to the pressure of being recorded during the interview.

4.10 Conclusion

As discussed above in this Chapter, A qualitative study was employed to perform research on this topic. there are only few mobile payment systems available in South Africa and most of them are in early stages of their life cycle, out of which SnapScan was chosen as mobile payment system that will be used for this research due snapscan being more popular than other mobile payment systems.

Twelve merchants were chosen for this study, who were interviewed face to face out of them four merchants were interviewed telephonically. All the interviews were recorded with consent of interviewee, and transcripts were generated and analysed using Atlas.ti software.

Next chapter will present the results obtained from the interviews conducted for the research study and the codes used for the interviews.

CHAPTER 5: RESULTS

5.1 Introduction

This chapter presents the information that has been revealed through the semi-structured interviews conducted with business owners and managers from various businesses. As mentioned in Chapter 4, the research methodology was qualitative in nature and semi-structured interviews were used as a research technique.

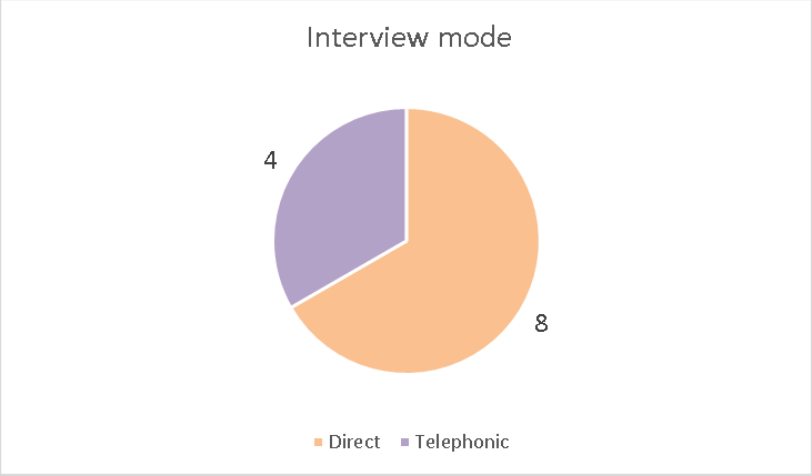
The results are presented in the same order of Research Questions mentioned in Chapter 3 to ensure that the reader can easily follow and interpret the information.

An iterative approach was followed when coding the data collected by interviews, where codes were created using the factors mentioned in Chapter 2.

5.2 Sample Classification

Twelve interviews were conducted as part of the research across different businesses. Eight interviews were conducted directly face-to-face and the remaining four interviews were conducted telephonically, according to the interviewees' preference. Figure 6 illustrates the types of interviews that were conducted.

Figure 6: Mode of interview



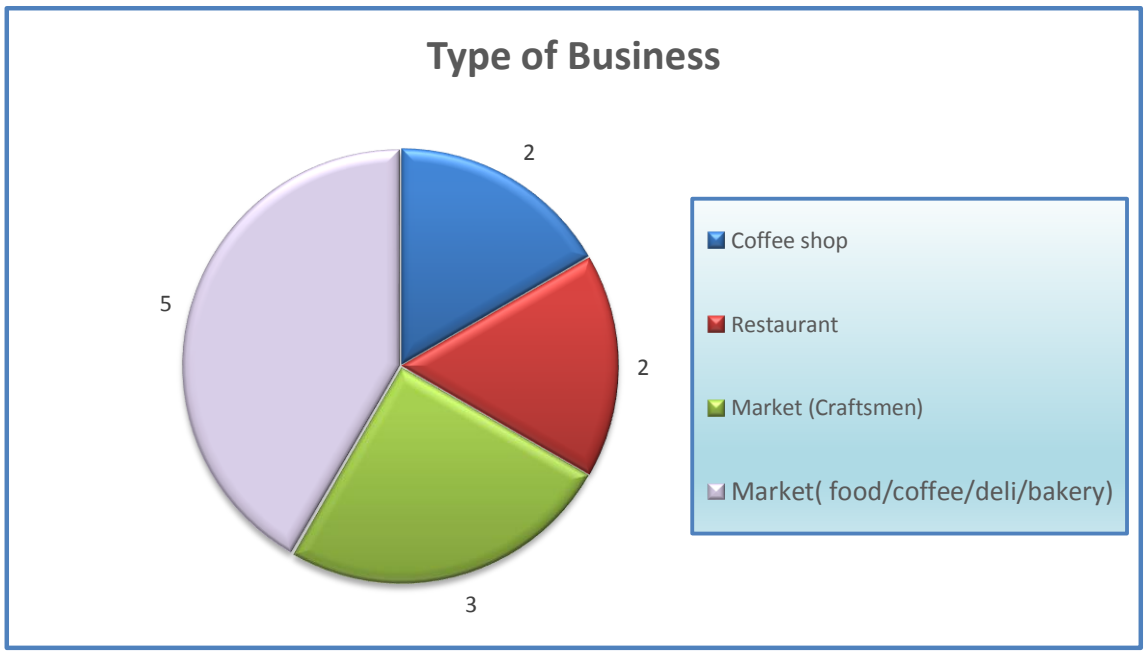
The sample was selected to gain insight regarding the influences of mobile payment systems on merchants in South Africa.

The type of businesses participants were belong to:

- Small-scale business owners who are crafts men like artists and carpenters who run small businesses in the open markets on weekly basis.
- Medium and large businesses that run from a fixed location, like coffee shops.
- Small and medium businesses that sell food and bakery and deli items in a market place.
- Restaurants that are large scale businesses that use mobile payment systems.

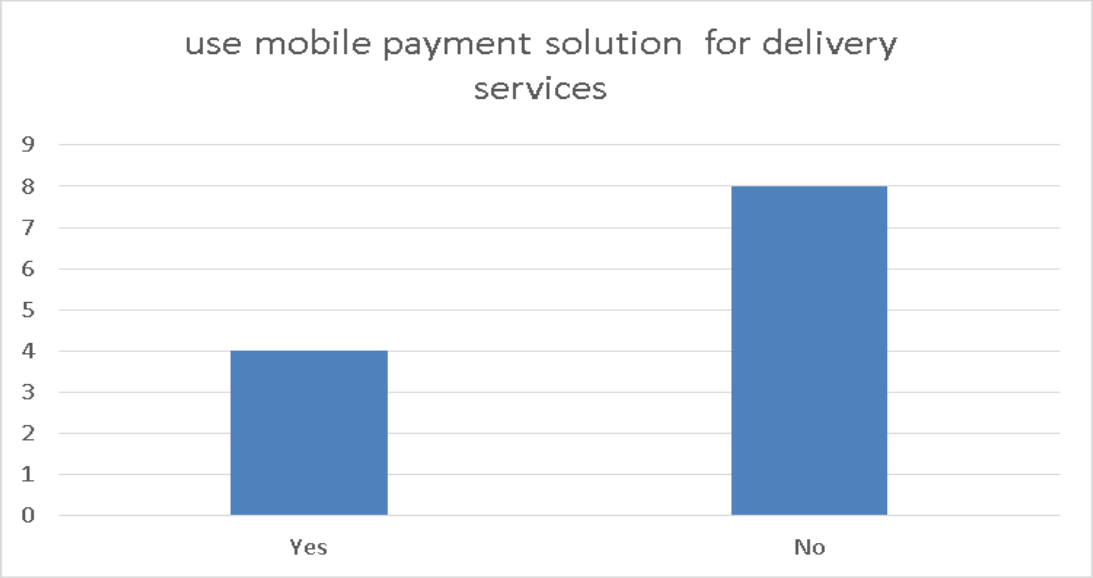
Figure 7 below summarise all the businesses discussed above.

Figure 7: Type of Businesses



Four business owners mentioned that they use mobile payment systems not only at their business locations, but also use these mobile payment solutions for receiving payments for delivery services. For example when somebody places an order to buy something from the business owner or a delivery person delivers the goods, then they shows the SnapScan logo for the buyer to make a payment and receive the payment notification.

Figure 8: Mobile payment systems for delivery services



The following Table 1 categorises all the interviewees with details related to the role of the interviewee and the type of the business. The table also includes information regarding whether SnapScan is used in multiple locations or single location, whether the business owner uses SnapScan for collecting payments for deliveries and finally provides the scale of the business in terms of annual revenue.

Table 1: Classification of interviewees

Participant	Role	Type Of Business	Single/Multiple installation [setup]	Used for Delivery Service	Scale of Business
P1	Owner	Coffee shop	Single	No	Medium
P2	Owner	Coffee shop	Single	No	Large
P3	Manager	Restaurant	Single	No	Large
P4	Owner	Restaurant	Multiple	Yes	Large
P5	Owner	Market (Craftsman)	Single	No	NA
P6	Owner	Market (Deli/bakery)	Single	No	very Small
P7	Owner	Market (Coffee)	Multiple	Yes	Small
P8	Manager	Shop & Market (food/beverages/deli/bakery)	Multiple	No	Medium
P9	Owner	Market (Craftsman)	Single	Yes	Small
P10	Owner	Market (Craftsman)	Single	No	very small
P11	Owner	Market (Deli/bakery)	Multiple	Yes	Small
P12	Owner	Market (Deli/bakery)	Single	No	Small

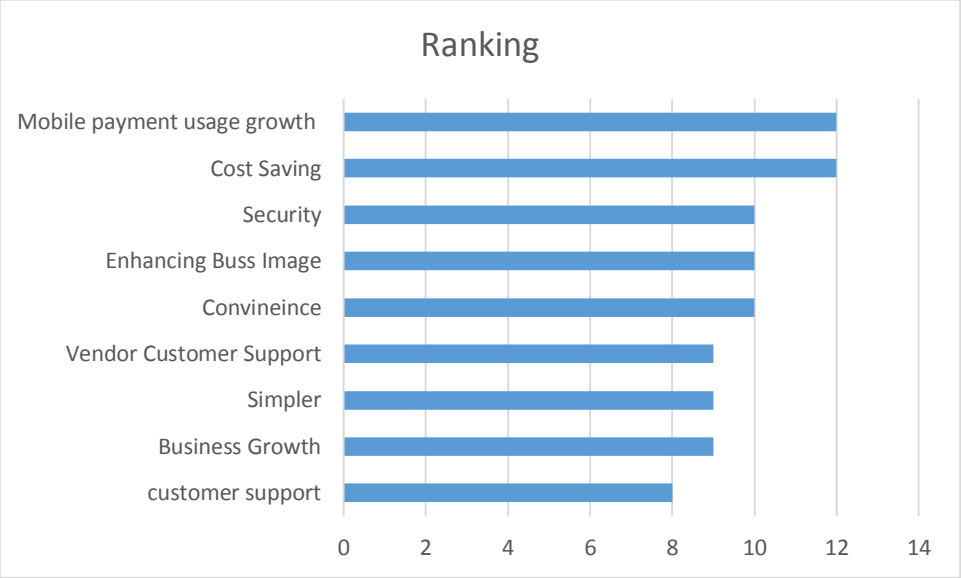
5.3 Drivers for Mobile Payment Adoption by Merchant

Research Question 1

What are the key factors that drive the adoption of mobile payment systems by a merchant in a developing country?

Data analysis was completed using the inductive approach, where many factors were identified that help in driving the adoption of mobile payment system by a business owner. These factors were ranked according to the factor that was mentioned most by the most number of participants, and its influence on the adoption of SnapScan. The factor that has highest acceptance is ranked first.

Figure 9: Factors mentioned most by participants



From the above the list of factors that drive the mobile payment adoption, the most significant are determined by the most number of participants responding to the factors.

These factors are discussed in detail below.

5.3.1 Mobile Payment Usage Growth

One of the most notable factors that were mentioned by many participants is the steady growth in the revenue generated from mobile payment systems in their businesses. SnapScan usage has been found to be slowly but surely increasing, as some of the merchants emphasised their views as follows:

> P1: *"So we started I say 20 rands a day which is 500 rands a month, but now we are at 4500 rands a month. So it is much better."*
>
> P4*: "At my corporate cafeteria I chose not to have a credit card machine when we opened and thus I actually enforced the staff contingent to download and use SnapScan if they wanted to pay with another means besides cash. This then forced them all to download the app and they had about 150 sign ups within one week."*
>
> P6: *"It has slowly increased in the favor of SnapScan."*

One of the respondents had a different opinion as the growth is very slow and Participant 9 responded that there was limited or no growth of SnapScan usage:

> P9: *"I registered as a merchant and it was more than a year before anybody said oh I can use SnapScan, I have got SnapScan."*

5.3.2 Cost Savings

The cost saving factor was mentioned by many of the merchants as a driving factor for SnapScan in the businesses, especially the small and medium sized businesses. Costs are related to operational costs, and some of these are direct, such as rental fees for using SnapScan when compared to traditional card systems and commission on every transaction that a merchant performs.

SnapScan usage saves indirect expenses such as internet fees (ADSL or mobile data) usually reserved for managing traditional credit card system terminal; this is not required for SnapScan. It also saves electricity expenses on credit card terminal, which is not needed in the case of SnapScan.

Most of the respondents stated that cost saving is an important factor. They compared SnapScan to the traditional card payment services, as evidenced in the quotations below:

> P1: *"I don't have to pay monthly fee for the device, and doesn't use electricity, those kind of things; I think its small advantages but it all adds up."*

> P7: *"It (cost) will reduce that credit card system rentals and commissions but also I haven't got any ADSL line or telephone line or machine, I can get hold [of] one but it will cost me monthly; SnapScan saves me monthly costs."*

> P11: *"First of all it's a very cheap system, it cost me 3% of sale, which is if you have a look at all the other systems, is probably the lowest."*

Some respondents did not think there was a great deal of significance in the cost saving factor, as SnapScan is provided as an additional payment method along with a credit card terminal, which incurs all the costs mentioned above, so there was no additional

benefit by using SnapScan. Respondents who mentioned that SnapScan did not save costs were large businesses who operate from a fixed location like a restaurant, who have both credit card and SnapScan facilities. Some quotations mentioned by the respondents are mentioned below.

> P3: "*Because we still pay for the, commission, so there's not much difference with the SnapScan or the credit card."*
>
> *P2: "Not at all, because users won't adopt it to the level where they will get rid of their credit card machine because they feel safe putting a pin into a credit card machine, so no."*

5.3.3 Security

The security factor was mentioned by many business owners. As discussed in Chapter 2 security plays a vital role in the mobile payment system growth. Both customers and merchants need to be confident on the security provided by the system.

A major point that was made by the respondents was that merchant intervention in the payment process was reduced and more control was with the customer to make the necessary payment; this aspect created a positive environment for merchants and customers. Many respondents emphasised the significance of the security aspect in the mobile payment system, some of the respondents are quoted below:

> P2: *"It's more real time and the customer has control over it, not you giving a credit card machine, the whole product is in their hand so they are doing everything, it's not you entering the amount, so I think they have more security."*
>
> P4: *"People think that if someone steals their phone they can actually get credit card details and tell this is not true, it's stored on a server so there is no risk at all, you can't hack it, and you can't get the information. Like I said before there is no exchange of actual details, no one is taking a credit card, no one is able to write down the numbers, no one is able to perform any type of fraud so it takes the risk out of me as the restaurant owners' hand when it comes to payment. I don't have to worry about someone coming back to me saying you charged me*

extra or you stole my credit card details, cloned my card or whatever."

P9*: "I try and explain to customers that it's a nice system for them because they are not handing their credit card to anybody, with the scanning devices and the fraud, it's very nice for them to have that security that they are doing the transaction, they are not handing their credit card to anybody and it's a great benefit for them from a security point of view."*

P1*: "It's much safer, because you don't have to give your card to someone who got an opportunity to make a copy or clone or get your details, you don't have to type in your code. You can scan it do yourself a code and press your own buttons I think it's much safer."*

5.3.4 Enhance Business Image

SnapScan is in its early stages when compared to established traditional card systems as mentioned in Chapters 1 and 2. Merchants want to be updated with the changes in the technology. Most of the respondents mentioned that using SnapScan enhances their business image by helping them to keep up with the technology trend and at the same time provide customer with additional offerings by providing the additional payment methods. Some of the quotations to support this argument are as follows

P1: *"I would say it shows we are progressing, that we are up to date in technology with latest methods, looks nice you can put up on menu or window."*

P4: *"Of course it does, you appear to be more in tune with the times and in touch with tech and offering, there is no harm in offering more than one payment solution to somebody. It's not costing me anything to have so it gives me enhances my offering to my customers."*

P12: *"Yes definitely because clients that come to the market as well, for them they don't want to carry cash with them."*

Some of the respondents how ever felt that the using mobile payment systems have less or no significance on their business, and this is related to the limited usage of SnapScan facilities by customers. This view was supported by respondent P9 with the below

quotation:

> P9: *"No, not enough customers appreciate that I have it (SnapScan), let's put it that way, I have had one customer that has walked past my stall and said oh there's SnapScan. That's I was wondering if there was advertising, because she didn't buy anything, she just said 'oh there's SnapScan'."*

In general all of the merchants agree that using SnapScan in their business shows that they are keeping up with the latest trend,

5.3.5 Merchant Convenience

Many of the merchants mentioned that using SnapScan has provided them with a convenient way of providing a payment solution to their customers. SnapScan is easy to set up and with almost no initial set up cost, the only thing that is required is a working cellphone, which is provided by SnapScan freely to the merchants or they can link with their existing mobile telephones.

Merchants also mentioned that customers were provided with a self-service payment method which also provides convenience for both merchant and customer. The following quotations provide the evidence of convenience being an important factor:

> P3: *"It's quite easy because I can leave here with my barcode then I have a chance to go and help someone else. I just have to wait for the message, I don't have to stand there with your credit card waiting for you to put in your pin card, you do it yourself while I am helping some other people."*

> P4: *"If we are doing a delivery, we don't have to take a credit card machine there or anything, we just take our SnapScan barcode, I have got the SnapScan barcode saved on my phone as well so if there is any kind of issue, like somebody needs to pay me and they don't have a credit card machine and they don't have cash and I don't have a credit card machine, they can literally scan the barcode on my phone and it pays into my business account."*

> P6: *"Obviously cost to small vendors like ourselves, normally you would have to pay a rental for a card machine and you have to try and find power for it, or if they*

have a cordless one or whatever, whereas with SnapScan there are no issues, easy to set up literally, very easy to set up."

P11: *"I can take my SnapScan wherever I go and I can get people to pay it wherever I am, there is no internet connection, no telephone connection needed, not affected by load shedding, it actually stands on its own, the only thing you have to get is a working cell phone."*

P12: *"It was very good, for me it was nice, I really enjoyed it and for me it's because I know the money is in the account, it's not somebody saying I paid you and you wait for proof of payment, you immediately get the SMS so it's knowing the money is there, the next day it will be in your account and you don't have to wait for it."*

5.3.6 Vendors Support

Most of the respondents highlighted the positive customer support provided by the vendor, supporting SnapScan solution both to the customers and also merchants. The vendor does proactive monitoring of the issues faced by the customers or merchants and calls them before they make any complaints. This was welcomed by most of the merchants; some of the quotations support this finding:

> P12: *"Their sales team that helps the clients is very helpful, so when you sign there as well, you have got like 24 hours respond time, you send an email with a question, in 24 hours their staff phones you back immediately to help you with your query."*

> P10: *"It was just that one time recently that the person wanted to pay me, she downloaded the app and she wanted to pay me and she couldn't and they reacted immediately; it was like a few seconds that they phoned her."*

> P4: *"When we got the 150 sign-ups for our corporate's cafeteria, they immediately identified that we had a large impact on that sign up and so they offered to give us an incentive programme or not even an incentive programme, an actual thank-you programme where they offered a R50 voucher to everyone in my building so for them they are looking at a R5000 spend, for me it was fantastic because it was encouraging people to come and spend the money at the cafeteria so I was getting the money anyway, and also for my consumers and for my customers, it was really nice for me to say to them 'thank-you for using SnapScan, thank you for the support, here is R50'. And I didn't even ask for that, they came to me and they offered that and I found that really great. They didn't have to do that, so I wasn't complaining or anything so they did that out of their own accord, so that was definitely a highlight."*

5.3.7 Ease of Use

Some of the respondents mentioned the importance of mobile payment systems being simpler and that it makes it easier for merchant and as well as the consumer. Merchants

like the fact that it is easy to set up the first time and also it is easy to help their customers to install or set up on the customer's mobile phone.

Some of the quotations from the respondents are as follows:

> P6: *"No challenges, I mean even relatively uneducated staff had taken to it, it's very easy to use, easy to manage."*
>
> P7: *"Starting it up was easy, everything was smooth. They send me email, I printed it and placed it and using it, no problems from staff. I think it's extremely user friendly, it's basic. A little girl run [in] this morning [and] used it. People give me feedback, and so far everything is positive. Nothing they complained."*
>
> P9: *"Yes because when I registered as a merchant it was quick and easy, I didn't have any trouble so I am always a little bit puzzled how customers have trouble."*
>
> P4: *"It was easy enough to explain to my staff and with the (consumer) SnapScan provides you with a variety of table talkers and information packs and there was no difficulty, as I said before the only difficulty was convincing my customers to actually download the app."*

5.3.8 Business Growth

Many of the respondents mentioned that mobile payment systems provide an alternative means for payment but this does not help much to increase the business growth. There are a few respondents that mentioned that there are some marginal contributions to the business growth:

> P8: "T*here are people that go to the market with only cards, they don't carry cash, so I presume before where they say sorry we don't accept cards, now we have SnapScan so we explain to them and they quickly install it and then it's done, so that way yes."*
>
> P5: "*Not really, if it is then it is very marginal, at this point I think they use SnapScan instead of credit card, if you haven't got SnapScan they will give you a credit card."*

So this give us indication that SnapScan is not helping much with business growth Yet, probably by providing more rewards to customers or merchants this can be done.

5.3.9 Customer Support

Respondents mentioned that using mobile payment systems (SnapScan) help in providing better customer service by saving time in the payment step from a merchant's side. This time can be used to provide additional customer support services payment mechanisms. Below are quotations from different merchants that emphasise this point:

> P7: *"Yes, some people like it more, they don't need to carry their wallet they can come to the market. So its lot easier for them. Yes obviously it's saving time, I just have to wait for SMS."*

> P11: *"You are not finding change and adding things up, it's a far quicker system, the person waiting in the queue for their food can quickly pay for it and again they are the people that are controlling that."*

> P4: *"Because of the speed and like I said, offer more payment solutions is only beneficial, it's quicker, it's more convenient for the consumer so yes."*

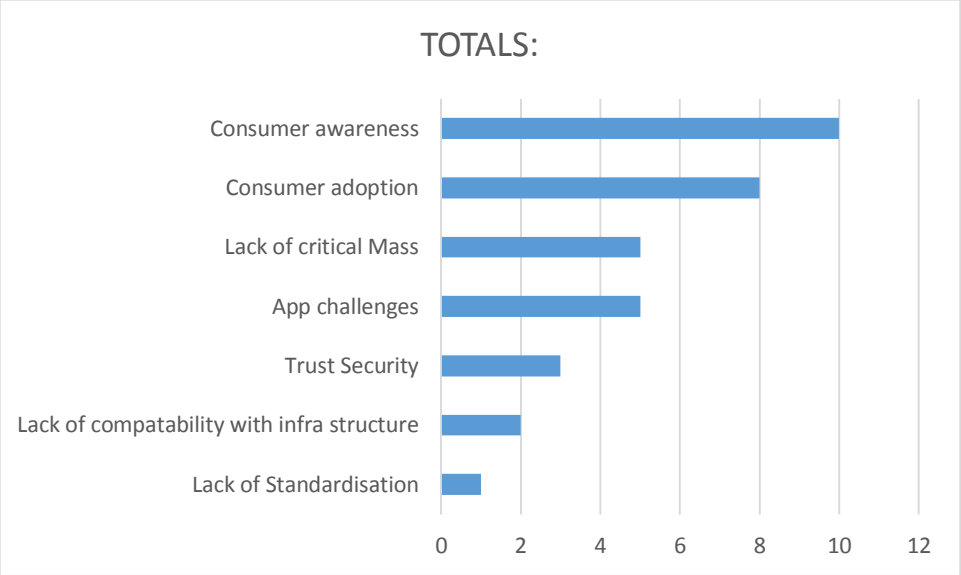
5.4 Barriers to Mobile Payment Adoption by Merchant

Research Question 2

What are the main barriers that inhibit the adoption of mobile payment systems by a merchant?

The research data that was analysed represented barriers that inhibit the expansion of mobile payment systems among merchants. Figure 10 below shows the barriers according to a ranking, from most influencing factor to least influencing factor.

Figure 10: Barriers to mobile payment adoption among merchants



5.4.1 Consumer Awareness

Most of the respondents mentioned that awareness of SnapScan among the consumers is still very low, which is not encouraging from a merchant's perspective. Merchants play an important role in between the solution provider and customers, as discussed in Chapter 2. Furthermore, limited consumer awareness has not helped to attract the merchants to adopt the SnapScan. Some of the quotations relating to this factor are mentioned below:

> P3: *"We used to have pamphlets at each and every terminal showing them but most of them say no, I will rather use my credit card."*
>
> P8: *"You can use any bank with SnapScan so that's also a very big plus point, and we have customers who have not heard of it and they will say but we are not with Standard bank and I will say this doesn't matter if you are not with Standard bank because you can use any card."*
>
> P10: *"One person said to me what am I supposed to do, I said you download the app and you have got to give them your bank details and they were a bit weary of that, they didn't understand SnapScan."*

P2: *"We have had many a times when the credit card machine is not working and I will say why don't you just install this (SnapScan) and you can still pay, and they will be like no it's okay, we will go and draw money quickly and come back, so again it's up to them."*

Merchants faced difficulty in explaining the product to the consumer, who is not aware of these products. There were some general comments from the merchants who mentioned that there was miss understanding among consumers that this solution SnapScan is only for people who have standard bank credit or debit cards because of the logo that show "powered by standard bank", as shown in figure 1

Some of the respondents mentioned that the low awareness of the product could be the result of less marketing made to the public.

P12: *"I would get more sales people to start targeting shops and things like that, to bring it out more, they are not really, they were testing at first and they weren't sure how people were going to take to it but I think with something like that, it is a safe way of spending money so marketing, they really need to market it more widely to the public and to shop owners and that to start using it in their shops."*

P8: *"I suppose you could make more advertising of it, because the more you advertise the more interest is, because it's already so easy to use."*

5.4.2 Consumer Adoption

Continuing from the previous topic of consumer awareness another factor that was mentioned by many respondents is consumer adoption. As discussed in the Section 2.4.4, consumer adoption and merchant adoption creates dependency between each other; this relationship is clearly apparent from the respondents.

Most of the respondents mentioned that growth in consumers' adopting mobile payment system is still concerning. As more consumers adopt SnapScan the more merchants would be encouraged to adopt mobile payment systems. Some of the quotations are mentioned below:

P1: *"People didn't catch onto it (SnapScan) very quickly."*

P9: *"First of all I was worried that as a merchant, because I hadn't used the facility for a year. The consumer is everything in this, the merchant is only 2nd hand, as far as SnapScan is concerned, the merchant is the 2nd consideration to the customer, and you have got to get customers to use it."*

P10: "*I haven't done business with it much, I think 3 or 4 times at the most.* "*They (customer) were trying to pay, they had downloaded it already, they were trying to pay and they couldn't get into my account because my account had been disconnected because of not being used, and then they immediately reconnected my account and they could pay."*

Some of the merchants' responses were that when they enforce the customers to use the mobile application (SnapScan), they have seen a positive response from the customers and have not heard any complaints.

P4: *"For me as a business owner I initially didn't offer the credit card machine, they were forced to download the app and we never really had a complaint from it, everyone that's downloaded it and used it now loves it, so it's got no negatives."*

P11: *"There is a market that's called Calmers, it's a Cape Town market, they don't have any credit card facilities, either cash or SnapScan and [at] that market the percentage of people that use SnapScan is much higher, it depends on your customers."*

P12: *"Yes more customers are saying because they can now use SnapScan, where they usually first have to go to a bank to draw cash, they don't need it now, because all the vendors at the market have got SnapScan, so the client can just come with his cell phone and shop."*

5.4.3 Lack of Critical Mass

Lack of critical mass relates to the availability of the SnapScan facility by vast number of merchants that is needed to generate interest among other merchants that will also adopt the mobile payment system. Respondents mentioned that there are not many merchants that accept mobile payment systems (SnapScan), and this mainly relates to the popularity of the solution.

Further, this relates to the demand of SnapScan among consumers, as discussed in the Section 2.4. The more demand for SnapScan, the more merchants would adopt it. But more merchants need to adopt the solution in order to increase the demand. Some of the merchants confirmed these statements, as mentioned below:

> P1: *"Yes, the more people (merchants) use the better; it's going to become a normal thing."*
>
> P2: *"I have tried to get a lot of guys (merchants) to adopt it, some of them are keen and some of them aren't."*
>
> P9: *"If customers come into your shop and you don't have SnapScan and they say don't you have SnapScan? Then I prefer to use SnapScan and you are going to be very motivated to get it."*
>
> P11: *"The system works beautifully, it's just not enough people who are using it and that is a market, it's not an IT or a technical problem, that's just a marketing problem."*

5.4.4 Trust

Many respondents mentioned that consumers' and merchants' lack of trust on the payment solution, SnapScan, creates a challenge for the adoption of SnapScan among the merchants. A few respondents have mentioned the problem of trust, with the quotations below supporting the issue of gaining trust.

> P2:"*I think that's the biggest thing, people are scared to adopt it; I think that's the biggest challenge. I have actually suggested it to a couple of people (merchants) but a lot of people have said no they don't want to adopt it, another headache or another process and to me it's faster, it would solve your problem but again it's a mindset thing."*

Some of the respondents responded positively regarding trusting the SnapScan solution, which appears to be in line with merchants' confidence regarding the security of the solution. Similarly, merchants mentioned that trust is gained gradually along with

transactions that result in no problems. Below are the quotes mentioned by some of the respondents?

> P6: *"Very confident, more confident than a credit card confident, honestly. Small transactions so less risk involved there, but at this stage I would be quite confident to do big transactions as well."*

> P5: "*You get confirmation in, it's backed by a good bank, you get acknowledgement or you get your payment quickly, and all those things."*

Many of the respondents explained that they were *"very confident" when* asked about trust regarding the SnapScan application.

5.4.5 Lack of Compatibility with Existing Infra-Structure

Many of the respondents are merchants who do not have fixed business locations and do not have much infrastructure used in their business. As such, many of the respondents have not expressed any issues relating to interfacing with existing infra-structures like Point Of Sale [POS]. The infra-structure they use is a cellphone linked to the SnapScan application which sends the payment proof directly to them. Alternatively the merchants can link it to their existing private mobile if desired.

> P5: *"All you have to do is take this little barcode thing of yours, used to give you a small little telephone with it which is not necessary, I think they stopped doing that because you link your own phone."*

Some of the respondents who run businesses from a fixed plan such as restaurants and coffee shops mentioned that SnapScan can be integrated to point of sale systems that would help their businesses when needed. Some of quotes of merchants are mentioned below:

> P4: *"Yes so I am lucky to have a GARPS point of sale system, and they generate code, SnapScan has also been very helpful as well, they generate a system for me that I can print out like a unique SnapScan code onto a bill so that when I take it to the table and my customers can just scan that SnapScan, they don't have to come up to the counter or anything, they scan that code and immediately pops up with*

the bill, with the amount on their phone and then they just pay the amount and it notifies me and I can cash it off on my system so it can all be integrated."

P2: *"I put my own systems in place so I have pulled my own report, I have my own systems in the background, I know Venn connects to it now, so Venn and there is one called Humble Till in South Africa so that all comes through and they can link the payment straight away, but from my side, no."*

5.4.6 Lack of Standardisation

With the availability of many mobile payment methods to the merchants as discussed in Chapter 2, there is no one standard way of mobile payment system. Merchants providing the SnapScan facility cannot service other mobile payment systems and *vice versa*.

One of the respondents mentioned the lack of standardization as a potential barrier for the future of mobile payment systems in the following quote:

P6: *"The other biggest challenge with SnapScan is the fact that there is lots of competition, card competition, it will be difficult for a vendor to have every type of you know, and SnapScan or others whatever the cards are, whereas with a card a person or vendor tends to have one machine for all the cards."*

5.5 Additional Factors

Research Question 3

What are the additional factors specific to the country that influences the adoption of mobile payment systems by a merchant?

5.5.1 Social Culture

Social culture relates to the consumer behavior in the country. Many of the respondents mentioned the influence of social culture regarding the adoption of mobile payment systems. Many of the respondents mentioned the social culture being a challenge for the adoption of the SnapScan. Some of the responses from merchants are mentioned below:

P2: *"People are very skeptical to use it, they don't like, and maybe it's a South African thing."*

P4: *"Actually having the app for a business to encourage people to use the app, that's the most difficult thing because people just, I don't know, I think it's a South African thing, but we are very conservative about online shopping and handing over credit cards, so that's one of the biggest challenges is actually convincing people to use the app."*

P5: *"People not wanting to change, people love the Master and Visa, for a couple of reasons. I think one of the biggest reasons is they get a slip, they get a print out and that makes them feel safe, and they are against change, human beings, they don't like to change and I think the moment you are asked to put your credit card on your cell phone that is always the safe, is the safe, because now your credit card details is all on your cell phone and you think that might be hijacked somewhere and whilst if you pay with your Master and Visa you have your pin. They will have to grow in it, they like to see that oh you take credit card; they see the machine, SnapScan, what is this? But you know I think when credit cards started it was the same thing."*

P6: *"A couple of people have not bought because they didn't want to go through the effort of downloading SnapScan and setting something up that they didn't know."*

Some of the respondents mentioned the positive influence of social culture on adoption, emphasising the growing importance given by the customers to the latest technological rends which provide them convenience. Most of the respondents mentioned that as well.

P10: *"I think technology is improving day by day, there is new technology every single day, and I think they would appreciate anything that would make it more convenient for them."*

P8: *"SA is seen as a 3rd world country so they want to use things like this to become…..its' very exciting."*

P7: "*I think lot[s] of people see it as gimmicky thing, they enjoy using it, and they enjoy it more than credit card."*

P6: "*I think South Africans are more available to this kind of this than lots of other countries, I think that we are quite mobile friendly, I think South Africans are attached to their cell phones and they trust their cell phones so they will trust it as a payment mechanism."*

One of the views that were acceptable by many merchants was related to the age of their customers and its influence on adoption of mobile payment system (SnapScan).

P6: *"Older customers would definitely be less likely to use SnapScan, it would be under 40s who would be more likely to use it, but that doesn't exclude old people, it means they are less likely."*

P7: "*Not the older age group, 35+ and 45+'s, the younger age like to use it."*

P9: *"You see what you are struggling with also, is that a lot of people have got sophisticated phones but they don't know how to use them, like they have got a sophisticated phone but they have never used the internet, they have never searched for anything on the internet on their phone, so you still struggling with that."*

P11: *"The younger the customer the better because they are used to taking images with their phones."*

5.5.2 Cash

Many of the respondents mentioned the advantages of having less cash in the business as a positive influencing factor for adoption of SnapScan. Most of the respondents mentioned that having less cash is safer and provided some additional advantages like reducing the probability of being paid with counterfeit bank notes, and reducing the indirect expenses of handling cash at the bank as customers do not need to bring large amounts of cash, and merchants do not need to bring in the change to return the balance amount.

P3: *"Getting less cash on the machine or on the till, yes that's one of the things we like about SnapScan."*

P7: *"One day when I get a point of sale system, it will be a cloud-based one and I definitely link the SnapScan to it and it will print the invoices. It's financially much safer to keep the cash off site."*

P8: "I suppose every Friday we have to go and get change normally for the market, so getting change has become less and less, that's because of SnapScan, we need less change because a lot of people are paying with SnapScan."

P9: "I prefer these SnapScan transactions, there is a lot of counterfeit notes going around and the market is a favorite place for counterfeiters to try and get rid of money."

P11: "You must realise that people at these markets want an alternative payment system, they don't want to be walking out of the market when people know we taking in large amounts of cash, and you don't want that."

P12: "I was the first one that introduced SnapScan at Hazel Food Market and then because I felt it was a nice way of us not dealing too much with cash. Especially the younger generation, they don't want to carry cash with them anymore, they open up their wallets, its' just cards, cards and cards, so definitely I think it's the future, the cashless environment, like in Cape Town you pay for parking using SnapScan and there are people there when they come to your parking meter, they scan it and you pay your parking with SnapScan, so it's really going cashless."

One of the respondents mentioned the challenge of handling cash in a small business where it becomes expensive to maintain cash. He stated:

P11: "It costs you to bank cash, so we would prefer some alternative payment. Say I have got R10 000 and I got deposit that in a bank, R10 000 in cash, and I go to Nedbank to deposit that money, they will charge me a deposit fee."

But one of the respondent differed, as the respondent preferred more cash when it was compared to the cash-less service provided by SnapScan:

P1: *"If you paying through cash we will give you 5% discount, then because cash is the key."*

5.5.3 Regulation

Many of the respondents expressed that SnapScan is partnered with Standard Bank and since the institution is a major bank which is regulated, merchants believe SnapScan is better regulated.

P2: *"SnapScan is regulated by Standard Bank so it's endorsed by Standard Bank so I am sure the right processes are in the background, that's all I can say on that."*

P5: *"Well it must be because its' underwritten by Standard Bank and they have a banking license so that's a story yes."*

P10: *"Well I suppose if you know it's with Standard Bank, with a reputable bank, then you would know it's probably regulated more, there's better regulation than standing alone, I think being alone, I think people would be very cautious of it."*

P12: *"Yes because they are managed by Standard Bank, so you get every day you get an email to say this is all your transactions that's gone through the previous day and then the end of the money."*

One of the respondents (P4) had a different opinion and responded as shown below:

P4: "So if anybody disputes a payment or says that they paid and I haven't got the SMS, but I can go into my back-end immediately and check on payment and see who has paid what and linked to that cell phone numbers so security wise it's much more, or legislation wise, or regulations or whatever, it's much more easier to manage, it's much easier to track than a credit card, because the credit card relies on the banks being online and relies on like a whole lot of different aspects that can affect your day to day usage of it, whereas SnapScan is all in the cloud or whatever."

Another respondent (P6) mentioned that the regulation will be with the credit and debit cards that are linked in the mobile payment application:

P6: "I think it is sufficient because from a customer point of view they actually paying from their credit card or debit card, so it's not like they need additional means of seeing where the money went to."

5.5.4 Internet Coverage

Many of the respondents mentioned that internet coverage creates a concern for the SnapScan system and customers cannot pay the amount sometimes due to the poor network coverage. This leads to the challenges faced by merchants who have businesses in remote areas where there is not much internet coverage.

P2: *"Definitely discouraging sometimes, I have had issues with not being able to pay because, so they don't have a credit card machine, you have your phone, SnapScan, there is no signal, doesn't work and you are like oh now what."*

P3: *"Sometimes the network because you get someone paying and you let them leave without getting a message and you end up not getting that message."*

P10: *"With SnapScan sometimes you don't get internet reception, you never know, sometimes I did have that once where they were battling to get connected because there was no reception and they tried this way and that way and then I remember that happened and then they made other arrangements."*

P9: *"It's not such an issue for me at the moment, the one customer I had, an American woman and it was a big payment she had to make, she tried downloading the SnapScan and it wouldn't, then try doing the EFT."*

Some of the respondents mentioned that internet coverage is not a serious concern, emphasising that most of the areas in the major cities are covered with mobile internet or Wi-Fi which should help customers to make the payment easily. The following quotes support these opinions:

P2: *"Most of the people using SnapScan are in the city so it's not necessarily a guy on the farm outside Gauteng who is using SnapScan."*

P11: *"Our coverage is pretty fair, there are spots in SA but those are very few and far between."*

5.5.5 Social Security

Security is a major concern among most of the respondents, as using mobile payment systems helps in terms of security. South Africa has security issues relating to stealing money from the people, and especially merchants who could carry cash from the business to their homes feel more at risk and prefer handling transactions though SnapScan.

P3: *"For me I think it (SnapScan) is much safer. That's the thing. Here in SA you have got crimes, I think it's much, much safer because you put all your details on your phone, you do it yourself, so you know that this money, this goes through."*

P5: *"Yes you know these days recently one of my friends has been stopped and taken into the bush and they took his credit card and forced him to give his pin number and did a lot of damage, long story. But if you use SnapScan you don't have to carry your credit card, that tells a story, you will have nothing on you."*

P9: *"Irene up to now has been a very safe market, not all markets are like Irene and it's just a matter of time before some of the stall holders get targeted because people can see we are taking in large amounts of cash."*

P12: *"There is always a problem when you have got lots of cash that somebody might come follow you or something, so yes for me SnapScan is the way of the future."*

5.6 Conclusion

After the data was analysed many factors were represented that help in understanding the factors required for mobile payment adoption among merchants.

Among the factors that help drive the adoption, the results confirmed that respondents emphasised the advantages of the mobile payment system. For many respondents cost

saving was the main reason for adoption, especially among the merchants who run small businesses.

The security factor gained agreement from most respondents. Merchants have nothing to worry about concerning the transferring funds as the onus of managing SnapScan is on the customer's side. It is like self-service provided to the customer and merchants simply need to wait for the proof of payment. Merchants were therefore able to provide better customer support.

SnapScan provides convenience both to the merchants and to the customer and for this reason most of the respondents have agreed that convenience is an important driving factor. This factor is further extended by the fact that the initial set up of the system is relatively easy which is encouraging and it does not require any training to understand the application. Some of the respondents mentioned that they could provide better support service for their customers due to the ease of use.

The respondents identified that part of the SnapScan process is used for delivery purposes, which adds to the convenience provided by the product. Furthermore, SnapScan supports the use of the tool by ensuring responsive customer support from the vendor side, which impressed many merchants. However, SnapScan has been slow to deliver on providing any business growth, also mentioned by many respondents.

Many of the respondents delineated that the lack of consumer awareness about the product is one of the largest barriers for adoption of this mobile payment system, as it relates to the demand of this product; less demand means that many new merchants are not interested in utilising such solutions yet. Alternatively, where there were no alternative payment methods, SnapScan was adopted more widely by the customers in that market or area than in the places where there is less penetration of SnapScan, again because there were alternative methods of payments available.

There is a lack of critical mass in terms of customer adoption of SnapScan, and not many merchants are available who provide this service when compared to the traditional card system payment methods which are widely available across the nation. Adding to this, the lack of standardisation causes additional barriers to the merchants as there are many other mobile payment systems available on the market.

Social culture plays a role in the customer's adoption, which relates to the merchant's adoption; some of the respondents mentioned that people are slow to adopt the new systems. Many respondents also mentioned that in the South African context there is stigma of social security concerns, which actually encourages greater adoption of mobile payment systems by merchants in order to have as little cash as possible in their tills.

Most respondents agreed that the country's economic condition has no major influence on the timing of adoption of mobile payment system.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

In Chapter 6, the findings of chapter 5 are discussed in detail and analysed by referring to literature that was reviewed in Chapter 2. The research questions mentioned in the Chapter 3 are answered after the synthesis of the Chapter 5 and Chapter 2 has been completed.

Some of the factors mentioned in Chapter 5 were not covered in Chapter 2 in the theory, and it was because the factors mentioned in the Chapter 5 are from the analysis of the data and this leads to the point that not necessarily every factor mentioned was a new finding. However some of these factors are not covered in the existing literature from the context of merchant.

In the Section 5.2 there was a classification of the respondents, further to this in Figure 9 there was a simplified graph of the groups to which the respondents belonged, as summarised in the table below. In this chapter this table is used as a reference to discuss contrasting views between different groups.

Table 2: Group of interviewees

Type of Business	Number of respondents
Coffee shop	2
Restaurant	2
Market (Craftsmen)	3
Market(food/coffee/deli/bakery)	5

The structure of the chapter follows the same order as presented in Chapter 5 to maintain consistency. The chapter is set out as follows:

- Discussion of the driving factors.
    - Conclusion to Research Question 1
- Discussion of the barrier factors.
    - Conclusion to Research Question 2

- Discussion of the additional factors
    - Conclusion to Research Question 3
- Conclusion

6.2 Driving Factors of Mobile Payment Adoption by Merchants

In this Section all the driving factors that were discussed as part of Chapter 2 Chapter 5 were synthesised together to compare the research study with literature reviewed.

6.2.1 Mobile Payment Usage Growth

The driving factors mentioned in Chapter 5 were analysed and it provided the motivation of increasing the adoption of SnapScan among the merchants. There was strong emphasis from all the merchants that general SnapScan usage in their businesses is increasing, however the rate at which it is growing remains slow. Most of the merchants wanted to have more growth in the SnapScan usage at their business, one of the respondent, as mentioned below, emphasised the usage of mobile payment among merchants.

> P5 : "*SnapScan at this point in time is still growing, it's very, very young, and its' very few people that's registered but you go to certain markets like in Nelspruit where they made a huge effort, Standard Bank, in marketing that, there you do like 20% on SnapScan.*"

This factor was not covered as part of Chapter 2 in the literature review, and this was additional finding from the study conducted. Merchants do get encouraged with growing percentage of their revenue from SnapScan. And it also helps in influencing other fellow merchants

6.2.2 Cost Savings

Most of the merchants mentioned that cost saving is a motivation for using SnapScan. Merchants mentioned the importance of costs saving, especially for small businesses

that run their operations in various markets. Interestingly merchants who provided SnapScan as an additional payment method while continuing to use the physical card terminals did not notice any advantage of the cost savings with SnapScan as they still pay for use of the card terminal rental and commissions. However one of the merchants mentioned the preference of using SnapScan over the card terminal as it is requires less commissions and has no indirect costs.

> P1: "*If I take my Telkom account/line for the dialups I need to make for normal card machine, that is ridiculous actually, and that not even including the bank costs…I think it's about 3% versus 5%, and no monthly rental which is a huge saving, I think its 580 per month per each card machine rental, and you also need to pay for the calls it's made for every card that you swipe so you are looking at may be 7% or 8% costs. If you see SnapScan it's 3% flat that is a huge savings.*"

Mobile payment systems provide a cost-effective alternative to the merchants, especially to the merchants who do not have any infrastructure for accepting card payments and provide convenience both to the consumer and merchant (Chae & Hedman, 2015; Mallat & Tuunainen, 2008; van der Heijden, 2002). Furthermore from the literature that was reviewed in Sections 2.3.1 and 2.3.2 it was mentioned that cost savings and convenience have a large influence on merchant adoption. Therefore the above discussion ratifies that the research study is in line with the literature available on these factors.

6.2.3 Security

From the security point of view SnapScan has removed merchants from the critical path of security; this has been done by moving the control of payment to the consumer. Essentially, the consumer controls the payment to the merchant in exchange of goods and services and merchants simply have to wait for the payment proof. This feature has additional advantages, such as saving time in collecting the payment and merchants can use that time to service other customers, especially during peak business hours. The below quotation from the merchant condenses the same point.

> P4: *"it takes away the whole risk factor of cards being cloned or any of my staff being accused of credit card fraud or anything like that, it eliminates that risk, it also makes payment a lot quicker and the cafeteria environment, we have over 100*

people coming in to collect lunch at a similar time, with a credit card machine we are spending 3 – 4 times the time spent to make the payments, where on Snapscan its' instant, they scan it they do their stuff, they walk away and it's done."

The confidence in security issues in a typical mobile payment system is overcome by instant notifications received by a merchant, which helps in gaining the confidence of a merchant and the consumer as well (van der Heijden, 2002). Security and trust play a vital role among the factors of adoption, especially from a consumer perspective, as these factors act like a barrier (Dahlberg et al., 2015; Schierz, Schilke, & Wirtz, 2010). However from the merchant perspective it is seen as a driver for the adoption of mobile payment systems. This literature view is endorsed by the data in Section 5.3.3, therefore the data from the research study supports the literature.

6.2.4 Ease of use, enhance business image and Merchant Convenience

In this section three factors together were synthesised, many of the respondents agreed that using SnapScan makes them keep up with the trends of latest technology and also provides the additional offering to the customer at a low initial set-up cost. SnapScan provides convenience to the merchants and it is one of the salient features of the product. Most of the respondents mentioned (as recorded in Sections 5.3.4 and 5.3.5) that it is evident that setting up SnapScan is very easy and the usage of it is also very easy as it requires no infra-structure like electricity or internet connection when compared to traditional card machines. The only thing merchants needed was a logo displayed on the table and working cell phones to where a payment proof can be sent.

For the small business owner who runs the their business in weekly market where there is no fixed building this feature helps them greatly and this is the reason why many merchants mentioned that SnapScan provides them with a great deal of convenience in setting up the a payment method. Further to this, for a large or medium scale business owner who has a point of sale system, they can integrate it with SnapScan to generate a unique code that can help them to pay the exact amount as required.

The following quotation emphasises the topics covered above:

P4: *"Yes so I am lucky to have a Garps point of sale system, and they generate a, or SnapScan has also been very helpful as well, they generate a system for me that I can print out like a unique SnapScan code onto a bill so that when I take it to the table and my customers can just scan that SnapScan, they don't have to come up to the counter or anything, they scan that code and immediately pops up with the bill, with the amount on their phone and then they just pay the amount and it notifies me and I can cash it off on my system so it can all be integrated as well as for online ordering online purchasing."*

This data gathered from this research study that is provided above is in agreement with the existing literature that mentioned that adoption of mobile payment systems is influenced by the ease of use for a merchant. Furthermore, mobile payment systems have more convenience to offer, and provide better value than the traditional payment methods that have traditionally been adopted by merchants (Dennehy & Sammon, 2015; van der Heijden, 2002).

6.2.5 Customer Support

Another important finding from the data that was collected and analysed is that many of the merchants used SnapScan for delivery services as a means to collect the payment as mentioned in Table 1. Thanks to the convenience provided by the SnapScan, the delivery person simply carries a logo. This is one of the additional features that SnapScan provides which was not covered in the literature. The merchants that utilise delivery services have experienced a great increase in their ability to provide customer support when compared to the traditional card system that can be cumbersome to carry around.

P4: *" if we are doing a delivery, we don't have to take a credit card machine there or anything, we just take our SnapScan barcode, I have got the SnapScan barcode saved on my phone as well so if there is any kind of issue, like somebody needs to pay me and they don't have a credit card machine and they don't have cash and I don't have a credit card machine, they can literally scan the barcode on my phone and it pays into my business account, the speed, the convenience and the security, like I said, in this day and age you just don't know when your card details are being*

recorded on the machine or by waiter or waitress so I like that fact that it takes that risk out completely and it keeps all the information on the customer's side"

Merchants who run small businesses sell many of the goods and services through word-of-mouth sales and telephonic orders. Delivering the products and collecting money required can be tricky sometimes; SnapScan has helped the merchants in making it easier to performing the transactions. See the quotation below from a small business owner who mentioned the usage of SnapScan for delivery services or after business hours sales and others.

P9: *"For me if somebody had to even come to my house to buy something, if I have got the SnapScan they don't have to worry about bringing cash."*

From the above SnapScan do provide with merchant additional help to provide better customer support also by saving time. So mobile payment system do provide additional customer support in agreement with literature.

6.2.6 Business Growth

From the data analysed in Section 5.3.8 SnapScan has not helped much in generating any business growth, even though some respondents explained that the growth had been marginal. Majorly it is used as an alternative medium for receiving payments. Since SnapScan is still relatively new to the market and has limited customer base it has not been used much; and is not considered more as a marketing platform where businesses can explore more business from their existing customer base.

Mobile payment systems can help build relationships between businesses and their customers by promoting offers, discounts or rewards to the customer, due to the ubiquitous nature of the mobile platform, business can target many customers and offer real time offers based on their location, timing and other details (Clarke, 2008; Dennehy & Sammon, 2015). However as discussed above the data collected has not shown any big significance of these relationship-developing tools, however it showed a marginal growth. Currently SnapScan is mostly used as an additional payment option for the customer.

6.2.7 Vendor's Support

Another interesting finding from the data was that the vendor support provided both to the customer and merchants was excellent. As discussed in the Section 5.3.6 half of the respondents mentioned that they were impressed with the proactive support provided by the vendor. For example when a customer experienced any issue in making payment to a merchant, the SnapScan team called the merchant or consumer to identify and rectify the problem instantaneously. And the team also called the customer to retry the transaction. This has not only helped the SnapScan application itself but has also aided merchants who are notified about the transactions or witness the support. And this increases the positive feeling about the product among the merchant's. Literature found had not covered this kind of support provided by the vendor to the consumers or merchants.

6.2.8 Conclusion to Research Question 1

What are the key factors that drive the adoption of mobile payment systems by a merchant in a developing country?

Many of the factors that were discussed in the previous section mentioned the benefits provided by SnapScan, which encouraged the merchants to adopt the mobile payment system. From the data collected from Section 5.3, some factors exhibit more influence on some customers while others did not, depending on the group to which the merchant belongs.

From Table 2 the merchants or business owners who belong to the group of coffee shops and restaurants are established businesses running from a fixed location, whereas the other two groups are merchants who are basically mobile business units and generally belong to small scale businesses (as pointed out in Table 1). The overall summary of the finding on driving factors were mentioned below

- The factors that were prominently mentioned among all the respondents include convenience, ease of use, security and enhancement of business image.
- It was evident that the business growth factor, attributed to SnapScan was not a driving factor for the businesses.

- There were mixed reactions in terms of cost savings, as most of the merchants agreed that there is potential cost saving when compared to traditional payment systems. However due to the limited growth rate in SnapScan usage, medium and large businesses cannot discontinue the use of traditional card machines, so this offsets any cost advantage they receive from utilising SnapScan. There is a marginal benefit in terms saving indirect costs such as electricity and internet charges.

- Vendor support was an emphasised factor, as most of the merchants agreed that the support provided by the SnapScan team was efficient and effective. Only a few merchants failed to express this view, mostly because they had not yet experienced any issues from the system.

- Another feature that helped many merchants was using SnapScan during the service delivery process.

6.3 Inhibiting Factors of Mobile Payment Adoption by Merchants

6.3.1 Consumer Awareness and Consumer Adoption

Consumer awareness and consumer adoption were two of the factors that inhibited the adoption of the mobile payment that were discussed in Section 5.4. These are delineated as some of the major barriers from a merchant's perspective.

Many of the respondents mentioned that SnapScan is still not known to the masses, as many consumers are still unsure about what it is. In some cases merchants expressed that consumers have not even heard of the application. In Section 5.4.1 some of the quotations from the merchants expressed their concern over consumer awareness. The below quotation from a merchant supports this view

> P10: *"One person said to me what am I supposed to do, I said you download the app and you have got to give them your bank details and they were a bit weary of that, they didn't understand SnapScan."*

Respondents mentioned that one of the problem areas of SnapScan would be the lack of advertisement concerning the product. Two of the merchants mentioned that it was a struggle to understand the adverts clearly, and this relates to the lack of awareness among the consumer society about the product and its services.

Consumer awareness is undoubtedly related to consumer adoption, which was also a concern raised by many respondents. While the merchants had SnapScan, it was apparent that the amount of consumers that use the facility is very limited. In a few cases there were merchants that had not performed any transactions for more than a year. However, there were mentions made of consumers who visited the weekend market who were aware of SnapScan in general.

Mobile payment systems rely heavily on acceptance by the consumers and by adopting the solution as their main means of payment method. The service provider needs to implement effective strategies to diffuse the mobile payment services effectively and they need to put more efforts into addressing the relationship with current customer base. It is essential that the service providers attract more consumers using various networks and existing customer bases and merchants, for example using reward schemes, reference schemes and social connections between merchants and consumers (Yang, Lu, Gupta, Cao, & Zhang, 2012). Mobile payment service providers have to advertise more about the services offered in way that consumers regard them as well suited for the purpose and focus on long-term strategic aspects for reaching critical mass of consumer adoption (Schierz et al., 2010).

The literature reviewed is in agreement of the data presented in Sections 5.4.1 and 5.4.2 therefore consumer awareness and consumer adoption are critical barriers for mobile payment adoption from a merchant's perspective.

6.3.2 Lack of Critical Mass

Merchants expressed the concern of the lack of availability of SnapScan among other businesses. In Section 5.4.3 the discussion revealed that merchants are not motivated to see SnapScan as it is not that common among businesses in South Africa. Some of the respondents mentioned that upon recommending the solution to other fellow merchants, there were mixed reactions.

One of the reasons attributed to the lack of critical mass was the lack of demand for SnapScan among customers, which does not encourage more merchants to adopt the solution. As much as merchants are on the supply side providing services, awareness among merchants remains a problem and this was evident when some of the respondents recommended the application to other fellow merchants, as mentioned in Section 5.4.3.

From the literature that was reviewed, many business owners are not willing to make adoption of mobile payment systems until they believe or know that mobile payment systems are common and widely used among consumers. Merchants need to be convinced, similar to consumers, of the benefits of adopting a new payment scheme (Mallat & Tuunainen, 2008; Ondrus & Pigneur, 2006). This leads to the point of network externalities, which refers to value gained by each participant who joins a system. Essentially, each network is significantly affected by addition of a new participant (Hu et al., 2008; Katz & Shapiro, 1985; Katz & Shapiro, 1994).

6.3.3 Trust

Trust plays an important role in considering the mobile payment adoption (Xin, Techatassanasoontorn, & Tan, 2013). Merchants want to trust the system before they invest in the solution. Partnering with large financial institutions or telecommunications operators tend to provide additional confidence in the system, compared to small companies that attempt to build the trust among merchants and consumers (Ondrus & Pigneur, 2006).

The data that was collected demonstrated that merchants trust SnapScan. In fact, eight of the merchants mentioned that they are very confident and trust the system. From Section 5.4.4 some respondents mentioned that there was a gradual increase in the confidence of the system as the initial transactions commenced with only a small amount of trust, and gradually the confidence in the application was increased.

Partnering with a major bank also helped SnapScan to gain the trust of one of the merchants. Alternatively, only a few respondents mentioned that they were not confident with the system enough to trust it. However, the research study's data reveals that most of the merchants trusts the system, which is in agreement with literature.

6.3.4 Lack of Compatibility and Lack of Standardisation

Most of the respondents have no other payment infrastructure, which resulted in the use of SnapScan. However the respondents also mentioned that SnapScan is compatible with few point-of-sale systems as mentioned in Section 5.4.5. From a merchant perspective, setting up SnapScan is easy and does not need any infra-structure.

A mobile payment system is a two-sided approach where both consumer and merchant use a common mobile payment system. The lack of standardisation is a constraint for merchant adoption, as mentioned by the respondents because of the many different mobile payment systems available in the market. Merchants who selected SnapScan as a payment option cannot serve consumers who have access or use any other mobile payment system. This view was raised by a respondent in the quotation below.

> P6: *"The other biggest challenge with SnapScan is the fact that there is lots of competition, card competition, it will be difficult for a vendor to have every type of you know, and SnapScan or others whatever the cards are, whereas with a card a person or vendor tends to have one machine for all the cards."*

The above quote from Respondent P6 clearly states the lack of standards within the mobile payment industry. Some of the underlying technologies might be same, like NFC or QR code scanning, but the systems are not interoperable between each application, so it creates confusion among merchants.

This information garnered from the data collected from the research study is in agreement with the literature mentioned in Section 2.4.2. Mobile payment systems' eco system has multiple players, each looking for their own interest and market share; this situation has created a complex environment where there is no one standard solution or one dominant solution in the mobile payment systems technology (Liu et al., 2015).

Merchants face the challenge in selecting the mobile payment system, as there is lack of standardisation. Service providers have used competitive approach rather than being cooperative; this situation has also given rise to a situation where large scale merchants are running their own in-house mobile payment system for example *Starbucks*, A*mazon* (Ondrus & Pigneur, 2006). This does not favour the standardisation of the eco-system and thus creates a barrier (Ghezzi et al., 2010).

Many technologies now co-exist and are being controlled by different stakeholders that create a complex environment. Up until now, there has been no widely accepted technology (Liu et al., 2015). Due to the lack of standardisation, various service providers are pursuing their own interests and have ignored the complexity their actions create for merchants who want to adopt mobile payment systems (Miao et al., 2014). This creates further challenges with respect to the compatibility of existing systems (such as POS).

6.3.5 Conclusion to Research Question 2

What are the key barriers that inhibit the adoption of mobile payment systems by a merchant in a developing country?

In the above section many of the factors that inhibit the expansion of mobile payment systems were discussed from a merchant's perspective. All the factors analysed from the data discussed in Section 5.4 are aligned with the information garnered from the literature review from Chapter 2, Section 2.4.

All the factors discussed above are summarised below

- Consumer awareness is a major barrier for merchants as this factor determines the demand for the product and merchants form part of the supply side to meet the required demand. This alluded to poor marketing by the vendor, which was evident from respondents.

- It was found that there is still a general misconception about SnapScan among the consumers, who mostly think it is supported for only standard bank customers, which is not the case as any South African bank credit or debit card could be used as long as it belongs to the *MasterCard* or *Visa* groups.

- Consumers who adopt the solution seemed to be happy with the solution. However it was found there seems to be no influence from these early adopters onto the rest of the consumer base, which relates to the challenge of the lack of an adequate number of consumers adopting the application.

- Merchants who adopted SnapScan trusted the solution, and using micro payments for longer durations helped the merchants to win confidence in the

system so that they were able to show signs of trust even for higher amount transactions. However, a lack of trust remained among merchants who had not adopted the solution.

- Another challenge was the diversity of service providers in the mobile payment eco system. There is no unified solution across all the mobile payment systems in the market. Merchants cannot serve consumers who use different solutions to SnapScan, unless these consumers adopt another mobile payment system.

6.4 Additional Factors that Influence Mobile Payment System

6.4.1 Social Culture

Consumer behaviour is an important element when accepting a change in the norm. People tend to react differently to changes. Studies were conducted on consumer behaviour to determine what consumers look for when it comes to adopting mobile payment systems. Some of them embrace change and become early adopters, while others wait and see until the system becomes popular before the make a decision to adopt (Ondrus& Pigneur 2006; Pham& Ho in press).

In Section 5.5.1 social culture factor was discussed, which emphasised the view of consumer behaviour from a merchant's perspective. Respondent P2 mentioned that people are sceptical about the change and are "not too keen on new changes", while Respondent P4 mentioned that South African consumer culture is very conservative in nature. A few other merchants shared similar views, stating that people have a sense of insecurity when it comes to adopting a new technologies, especially those who are not aware of the trends.

A few merchants (Respondents P7, P6, P8 and P10) had a contrasting view, stating that South African culture embrace new technologies and they are adept with mobile friendly environments. One of the respondents stated that SnapScan appeared to be gimmicky for few customers who were interested in trying out new technology that shows an interest in new applications

From the above comments, it is evident that the literature that was reviewed supports the data that was collected, as people are different and there are differences in the way customers approach the new payment solutions.

An interesting finding was the role of demographics. Most of the merchants were in agreement that SnapScan was popular among the younger generations, those people in their 20s or 30s. There appeared to be resistance from the older age groups concerning adopting new payment systems.

6.4.2 Cash

Many of the merchants emphasised the importance of having less cash or no cash in their business in Section 5.5.2 due to different reasons. In the weekend markets merchants stressed the importance of security and the risk factors involved in handling cash. Small scale merchants seemed especially aware of security, as they operate at weekend markets and felt that carrying cash at the end of the day makes them targets for crime; in South Africa the crime rate continues to be a concern among people.

Other respondents explained that SnapScan was more convenient, as cash is expensive to maintain. For example, depositing cash into the bank costs money and incurs additional indirect expenses like time and traveling to the bank branches.

Furthermore, handling cash involves maintaining adequate change or small denominations so that merchants can return the balance amount to perform cash transactions and it was mentioned by one respondent that handling of change is getting difficult these days and SnapScan is preferred as there is no concerns about providing the correct change.

> *P8: "I suppose every Friday we have to go and get change normally for the market, so getting change has become less and less, that's because of SnapScan, we need less change because a lot of people are paying with SnapScan."*

6.4.3 Regulation

Merchants mentioned (as presented in Section 5.5.3) that snap scan is partnered with Standard Bank and since banks are regulated, most of them believed that SnapScan is

also regulated. Respondent P6 mentioned that SnapScan performs transactions on the linked credit or debit card which is linked to local banks, hence the application is regulated.

Mallat and Tuunainen (2008) mentioned that good regulation and guarantees in mobile payment systems can help in gaining the trust of merchants and that in turn, increases adoption. Therefore the data presented in Chapter 5 ratifies the literature available on the regulation factor.

6.4.4 Internet Coverage

Mobile payment systems rely on the mobile phone network coverage, especially the data services provided in a specific region. Discussions in Section 5.5.4 endorse that some of the merchants feel that although internet coverage in general was good there were still a concern regarding the internet coverage in some parts of the towns and cities, this was more evident from the merchants who operate at weekend markets. Customers become frustrated when they cannot confirm mobile internet and payments for good and services via SnapScan.

This leads to the point where SnapScan is more vulnerable in the outlying areas of the cities and small towns and villages, where there is less internet coverage compared to prime areas in cities and economic hubs in South Africa.

Most of the merchants mentioned that there is little to no impact of the economic conditions of the country regarding the adoption of mobile payment systems.

6.4.5 Social Security

Social security was a concern raised by many merchants, which was a clear message that in South Africans are aware of the security and safety of themselves and their staff. SnapScan can merchants by reducing cash in their businesses and therefore they are encouraged to confirm more payments through SnapScan compared to cash payments.

In many developing countries safety plays an important role, and these differ from country to country. One of the merchants mentioned security concerns the merchants have.

P12: *"There is always a problem when you have got lots of cash that somebody might come follow you or something, so yes for me SnapScan is the way of the future."*

6.4.6 Conclusion to Research Question 3

What are the additional factors specific to the country that influence the adoption of mobile payment systems by a merchant?

The factors discussed in the previous section are mostly region specific or country specific. In Chapter 2 it was mentioned that mobile payment systems are fragmented and there is no popular global solution that is in use. This gave rise to too many service providers who are attempting to get into the market and there is fierce competition between them.

Many of the mobile payment systems are country specific; SnapScan deals with local conditions and the local market. The findings from all the factors that have been discussed above are summarised below:

- Social culture plays a role in the adoption of mobile payment systems; this creates a challenge for both consumer and merchant as they also form part of society.
- It is the service provider's responsibility to understand consumer behaviour and to create an encouraging environment where more customers feel confident to join and experience new mobile payment systems.
- The service provider should use the existing customers and merchants to make a social influence on the larger customer base, and should reward them.
- The cash factor was an interesting finding; according to respondents maintaining less cash on the business premises is a driving factor for merchants to adopt mobile payment systems.
- Mobile payment systems also reduce the handling of legal tender, which again encourages the merchants, especially the small-scale merchants who run businesses in weekly markets.

- Interestingly it was evident that the partnership between SnapScan and Standard Bank has helped gain the confidence of many merchants.

- Internet coverage is an important foundation of mobile payment systems; internet coverage poses a challenge to the entire customer and merchant base, especially in developing countries.

- Social security is an important factor that service providers need to consider, especially in South Africa and other similar countries where security is an issue. This factor is a driver for mobile payment system adoption as both consumers and merchants want to reduce their security risk.

- Mobile payment systems providers can use the security factor as a driving factor to educate more consumers and merchants and encourage them to adopt the mobile payment system.

6.5 Conclusion

Mobile payment systems are relatively young when compared to existing traditional card payment systems and clearly lack global presence. This research explored the factors that influence such mobile payment systems in local conditions from a merchant perspective.

The factors that were found to motivate the merchants are convenience, mobile payment usage, ease of use, security, enhance of business image, and cost savings. Furthermore two other factors were found to motivate merchants, these included proactive vendor support and usage for service delivery. Merchants who use SnapScan as an additional payment offering are not able save much on cost but prefer the SnapScan application due to the other additional factors previously mentioned.

Barriers for adoption of mobile payment systems were found to be consumer awareness, low consumer adoption, lack of critical mass of merchants, lack of trust, lack of compatibility and lack of standardisation among mobile payment systems. Additional factors that influence mobile payment systems locally are social culture, less cash,

regulation, mobile internet coverage and social security. Furthermore partnering with a local prominent bank had helped to increase the confidence of the merchants.

Most of the merchants expect SnapScan to grow further and it is possible that the application becomes the main payment method, thereby replacing the existing traditional payment methods.

CHAPTER 7: CONCLUSION

7.1 Introduction

Chapter 6 discussed and analysed the research study with reference to the literature review in Chapter 2, and the research questions mentioned in Chapter 3 were answered. Chapter 7 commences with recapitulating the research problem and presents the summary of key findings from the research study. Furthermore this chapter provides a proposed research model based on the findings followed by recommendations to business. In the final section limitations related to the research study are presented and future research suggestions are made.

7.2 Background to Research Problem

Changes in mobile phone technology have revolutionised the way businesses are conducted in many industries. One such area where mobile phones have transformed an industry is payment industry by the introduction of mobile payment systems. It was expected to disrupt the existing card-based business and expand very quickly, but it did not grow as rapidly as initially expected (Chae & Hedman, 2015).

In South Africa there were a few mobile payment systems available in the market, however these were not spread widely in the market. This raised an important challenge, as the slow up-take has stopped the mobile payment system from replacing the existing card-based payment system (Matthew, 2014).

Most of the mobile payment systems have a two-sided platform where both merchants and consumers are serviced using digital or electronic transactions (Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014). Merchants are vital to the system, they play a dual role. Merchants are the customer-facing personnel who deal with the actual use of such systems and at the same time, they fund the entire system. It was crucial to determine the factors that influence the adoption of mobile payment systems among merchants in emerging countries such as South Africa.

This research explored the factors that influenced the adoption of mobile payment systems from a merchant perspective. Different group of merchants across different categories were part of the study that explored the influence of various factors on the merchant's decision to utilise the mobile payment system.

7.3 Research Objectives and Findings

The research objectives identified the factors that influence or enable the adoption of mobile payment systems among merchants in a developing country like South Africa. What factors inhibit the adoption and what factors are significant to the local conditions in the country.

The research study was exploratory and qualitative in nature and explored the factors that influence merchants in three categories: Drivers, Barriers and Additional factors. Twelve semi-structured interviews were conducted with different groups of merchants as mentioned in Table 2. Results from the data analysis were presented and discussed in Chapter 6, which affirmed that there were many factors that influence merchants in the adoption of mobile payment systems.

Most of the factors found in the research study were confirmed by both literature and data; however there were a few factors that were not part of the literature leading to the point of findings from this research. All the factors that were analysed and discussed in Chapter 6 are presented in the form of a proposed model in the next section.

7.4 Model for Merchant Adoption

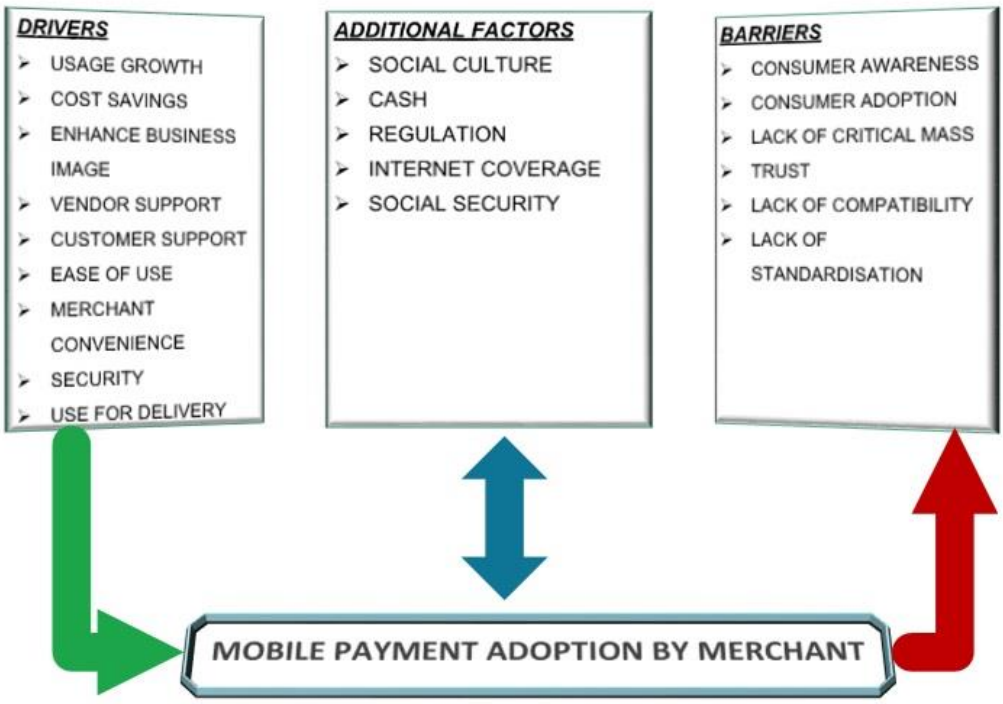
The research was conducted in South Africa by using one of the contact-less mobile payment systems to explore the conditions within the mobile payment industry. An Interesting outcome of the discussions made in Chapter 6 leads to many factors that played an important role in the mobile payment adoption among the merchants in South Africa.

These factors are broadly classified into three groups throughout the research report to keep consistency.

- **Drivers**: These show the motivation for merchants and enable them to adopt the mobile payment system
- **Barriers**: These factors do not encourage merchants to adopt the mobile payment systems, hence inhibit adoption.
- **Additional factors**: Factors are influenced by local conditions of the country, some of them act as enablers and some as barriers to adoption depending on the conditions.

The following model was prepared by using these factors and summarising them from the three categories mentioned above.

Figure 11: Model for Mobile Payment Adoption by Merchants



7.5 Recommendations for Business (Managers)

A recent survey by Deloitte estimated that by the end of 2015, seventy percent of mobile payment users in the United States alone will constitute to a combined annual spending of 2.45 trillion dollars (Deloitte, 2011), that shows a lot of potential in the mobile payment market and interest business has on it.

Based on the study conducted and analysed, and juxtaposed to the literature reviewed in Chapter 2, there were some recommendations that can be made to the business world:

- Mobile payment systems are very fragmented. Service providers are working towards their own interest. Lack of compatibility between the systems causes issues for both merchants and consumers (Liu et al., 2015; Miao et al., 2014; Zhang et al., 2012), therefore businesses should

try to capitalise this by making partnerships and allow cross compatible platforms and expand the foot print.

- Due to low barriers to entry companies from different industries such as IT, telecommunications and financial services are entering the market. Without the correct combination of coordination and competition; it is very difficult to find success in this market (Dennehy & Sammon, 2015).

- The research study affirmed that consumer awareness could be the starting point for service providers' calls to action, as well as for the vendor to do more marketing, establish campaigns or referral programmes where vendors/merchants can mobilise the masses to adopt the solution.

- It was evident that many consumers has an impression that SnapScan is supported by a bank, which relates directly to the lack of marketing skills employed by the vendor.

- There are many potential customers for SnapScan, but they simply cannot use these solutions due to their smart phones not being compatible with QR scanning technology. However, if the vendor could find a way to provide a feature that service providers could provide, such as a low-tech solution that can still provide many of the advantages of SnapScan, e.g.: an sms-based or java based platform or a mobile application that can deliver same benefits with an additional layer that can mitigate the QR scanning process.

- Merchants play a vital role in the success of the mobile payment system. As such, they need to be rewarded, not just from a cost savings perspective, but for encouraging the consumers to adopt the mobile payment systems as it is also in their interest to gain advantages from the mobile payment systems.

- Merchants find it very difficult to convince the customer who sees the application for the first time. It would be easier to convince the consumer to adopt the solution if the process can be further simplified.

7.6 Impact for academia

In Chapter 1 and in the literature review, it was identified that there is a lack of literature from a merchant's perspective that could provide more in-depth understanding of mobile payment systems' influence on their businesses. Furthermore most of the literature available was from developed countries. Very little information is available on contact-less mobile payment systems, as the concept is still new.

This research sought to provide a value-addition by providing the information about the challenges and benefits of mobile payment systems as experienced by merchants, especially from developing country like South Africa.

This research study was exploratory in nature, which provided various factors that influenced merchants for adopting mobile payment systems. A model was developed summarising all these factors in Section 7.4. Due to the exploratory nature of the study there was no ranking provided for the factors.

This research has provided the base information which can be used to build up and further explore this area and perform tests on these factors to determine which factors influence merchants more than others.

7.7 Research Limitations

Analysis was performed rigorously to determine the key factors that influenced merchants' adoption of the mobile payment system, as presented in Chapter 5. However even after the utmost care there remain limitations to this research study.

Some of the research limitations were mentioned in the Section 4.9 in Chapter 4. Further to that list, more limitations are mentioned below:

- The sample size selected was twelve merchants, which is relatively small when the findings are generalised for the population.

- Only one mobile payment system was selected, namely SnapScan to analyse the market. The other mobile payment products were ignored due to the limited time and finance availability for the researcher.

- This study emphasised all the factors for adoption. However there might be other factors that could not be covered due to the limited size of the sample population.

- Due to exploratory nature of the study, the factors that were identified were not ranked in a specific order. Therefore it remains unknown about which factors influence more than others, as this was not part of the scope of the study.

7.8 Suggestions for Future Research

This study was done using exploratory-based qualitative research; this revealed many interesting factors that influence merchants in adopting mobile payment adoption.

Suggestions for future research include the following:

- Future studies could employ a quantitative study to verify how much these factors influence a merchant's decision to adopt a mobile payment system, and also to determine which factors have more influence than others and rank these accordingly.

- The effects of mobile payment or mobile wallet provided by small companies and mobile service providers (for example, M-Pesa) on the existing banks can be explored to determine how banks are impacted from mobile payment eco-systems.

- An African multinational study will provide more detailed view on mobile payment systems from a continent perspective.

7.9 Conclusions

Mobile payment systems are still a young industry changing rapidly due to the advancements of technology. Technology provides convenience and it is changing the way payments are performed. In this study it was found that merchants were satisfied with the solution regarding how it works and how easy it is to use, as well as the other advantages as mentioned by explaining the driving factors.

There are factors that help in driving the adoption rate of mobile payment systems that include usage growth, cost savings, security, ease of use, enhanced business image, customer support, vendors' support and business growth.

Factors such as consumer awareness, consumer adoption, lack of critical mass of merchants, trust, and lack of compatibility and lack of standardisation inhibit the expansion of mobile payment system among the merchants.

Some factors that are influenced by local conditions were also evident in research study. These included social culture, cash, regulations, internet coverage and, most importantly, social security. These factors might have differing influences depending on the location of the mobile payment system. For example internet coverage or social security in an area or suburb is very high compared to some other remote or rural suburbs. Therefore these factors could be a driver or barrier depending on the specific conditions.

Mobile payment systems provide many advantages that create a positive effect for merchants, saving time and money and provide addition value as discussed in Chapter 6. The model mentioned in Section 7.4 summarised all the factors that impact the merchants regarding the adoption of the mobile payment systems.

Many of the mobile payment systems are restricted to geographical locations within the country. Due to external factors like regulations, this is two-sided approach where customers and merchants both have to be in synergy on the platform; this creates an opportunity to build long-term planning for these payment solutions.

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APPENDIX A: INTERVIEW GUIDE:

PRELIMINARIES:

- Thank person for attending
- Explain the purpose of the research
- Ask for permission to interview and record the session

Generic questions

1. What is your name?
2. What is your role in this business?
3. What type of business are you running?
4. How long have you used the mobile payment system?
5. Is this first mobile payment system you're using, or do you have any prior experience of using any other mobile payment system?
6. What is the percentage of the overall business revenue provided by mobile payment system?

Theme based questions

7. How is your experience so far with mobile payment system?
8. What are the main benefits of using mobile payment system?
9. If you had the all the power to change anything in SnapScan tool, what changes would you recommend?
10. Would you recommend a mobile payment solution to any other business owners?
    a. If not, why?
    b. If yes, why?
11. What are the main draw backs of mobile payment system?
12. Is the current mobile payment system compatible with your existing infra-structure e.g.: point of sale?
13. How was the transition experience of adopting mobile payment system?
14. What is your view on trust and security of this mobile payment system?

15. Are you able to reduce costs or expenses with the implementation of mobile payment system?
16. Does adding mobile payment solutions add image to your business?
    a. If yes, how?
17. Do you think it will replace the traditional physical card system in the future?
    a. If you agree, please explain why.
    b. If you don't agree, please explain why.

APPENDIX B: ETHICAL CLEARANCE FORM

Gordon Institute of Business Science
University of Pretoria

Dear Kiran Pidugu

Protocol Number: **Temp2015-01832**

Title: **Adoption of mobile payment channel by retail businesses in South Africa**

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

You are therefore allowed to continue collecting your data.

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

Kind Regards,

Adele Bekker

APPENDIX C: CONSENT FORM

Adoption of mobile payment channel by retail businesses in South Africa

Consent letter

Dear Sir/Madam

My name is Kiran Pidugu. I am currently conducting research as part of Master of Business Administration (MBA) degree at Gordon Institute of Business Sciences. My research is about Adoption of mobile payment channel by retail businesses in South Africa.

I am here by seeking your consent for a 1 hour interview. Participation is voluntary and all data will be kept confidential. Your identity will be protected.

Upon completion of the study, I undertake to provide you with a copy of the full research report.

If you require any further information, please do not hesitate to contact me on 448056@mygibs.co.za or 084 759 3909. This project will be conducted under the supervision of Mira Slavova, mira@mmd4d.org, who is my Research supervisor at the Gordon Institute of Business Sciences.

Signature of participant: _____

Date : _____

Signature of researcher: _____

Date : _____

APPENDIX D: INTERVIEW DECLARATION FORM

Adoption of mobile payment channel by retail businesses in South Africa

INTERVIEW DECLARATION

I …… (participant) declare that I have voluntarily participated in the interview and that the information I provide is honest and truthful.

Participant Signature : Date: