

Financial inclusion through digital payments in South Africa

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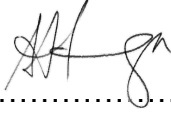
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This research report is submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the Degree of Master of Management in the field of Digital Business

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Declaration

I hereby declare that this research report submitted in partial fulfilment for the Degree Master of Management in Digital Business at the University of the Witwatersrand is my own work and has not been submitted by me to any other university.

Signed: 

Date: ...29 September 2023.....

Abstract

One of the enablers of financial inclusion is access to payment services and digital payments have been proven in other countries to be one of the enablers of financial inclusion. Cash payments are prevalent in many communities in the country. However, those using cash are not included in formal financial services and are not able to get services such as credit, insurance and other financial services products. This study sought to identify the challenges that should be addressed in order to use digital payments as enablers of financial inclusion in South Africa. It also sought to identify the solutions or frameworks that could be used to address these challenges.

The Actor-Network Theory was used to identify the actors in the digital payments ecosystem and the challenges they face. The research findings show that the South African economy can be referred to as a “dual economy”. The rural economy relies heavily on cash while the urban economy uses formal banking services, which include digital payments. Amongst the challenges affecting the adoption of digital payments are the immediacy of cash and the perceived low cost of cash, the low acceptance of digital payments by merchants’ infrastructure and, in some instances, those who are willing to pay using digital means are charged more to cover the costs merchants incur when accepting digital payments. A further challenge is the rate of digital literacy in the country and the lack of trust in the digital payments ecosystem. The cost of data in South Africa limits access to internet connectivity which is required to make digital payments. There is a lack of interoperable solutions in the market whereby customers can move from one channel to another with ease, for example, by using a mobile money wallet in the same way a bank account can be used. Lastly, the lack of privacy in transactions was also identified as a challenge.

While there may be several solutions for these challenges, this research established the following potential solution, namely, the creation of a new industry body that includes all actors in the digital payments ecosystem. Mobile network operators, financial technology companies and retailers, amongst others, need to participate in this new industry body in order to help address the identified challenges. The new industry body must also assume the task of increasing digital literacy in the country and improving the infrastructure required to support digital payments.

Keywords

Actor-Network Theory

Digital payments

Financial inclusion

Financial technology

Interoperability

Mobile network operator

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List of acronyms

ANT	Actor-Network Theory
FSCA	Financial Sector Conduct Authority
Fintech	Financial technology company
MNO	Mobile network operator
NDP	National Development Plan
NPS	National Payment System
PASA	Payments Association of South Africa
POS	Point-of-sale
QR code	Quick response code
RTC	Real time clearing
SA	South Africa
SARB	South African Reserve Bank
SASSA	South African Social Security Agency

Chapter 1 – Introduction

1.1. Statement of purpose

The purpose of this qualitative study was to explore how digital payments can foster financial inclusion in South Africa (SA). This was done by exploring the actors in the digital payments ecosystem, the challenges in the ecosystem and the implications of these challenges in fostering financial inclusion through digital payments. The findings of the study are discussed through the lens of the Actor-Network Theory (ANT), the theoretical framework that underpinned the study.

1.2 Background of the study

In its vision to eliminate poverty, unemployment and inequality, the government of South Africa, through the adoption of the National Development Plan (NDP), identified the need for the financial sector to achieve 90% financial inclusion by 2030 (South African Government, 2012). Furthermore, financial inclusion is one of the nine goals of the South African National Payment System (NPS) Vision 2025. The NPS intends to increase financial inclusion, among other goals, which will contribute to the prosperity of all South Africans (South Africa Reserve Bank, 2018).

Digital technologies are disrupting the payments industry and introducing new entrants into the market. Financial technology (fintech) companies are introducing new digital payment options while established financial services organisations are enhancing their digital payment solutions. According to Deloitte and Mastercard in their report titled “The future of payments in South Africa, enabling financial inclusion in a converging world” (Deloitte, 2019), the adoption and use of digital payments in SA can be one of the vehicles through which financial inclusion can be achieved. The report acknowledges that although there are over 80 million bank cards in circulation, their use remains low, which indicates that having a bank card does not imply financial inclusion.

SA is still grappling with the challenges of poverty, unemployment and inequality, generally referred to as the “triple” challenge. Although the country is increasingly adopting technologies in the finance sector, the contribution and benefits of such

technologies towards financial inclusion are still unclear. As SA attempts to deal with the triple challenge, it is also imperative to investigate how digital payments can foster financial inclusion as one of the measures to deal with the challenge.

1.3. Research problem

There is still heavy reliance on cash payments in SA. This is despite Deloitte, an international professional services network headquartered in London, and Mastercard, the second-largest payment-processing corporation worldwide, pointing out that the future of payments is premised on the adoption of digital payment methods and systems (Deloitte, 2019). However, the impact of adopting digital payment methods on financial inclusion still needs to be explored. According to Deloitte (2019), many people in SA have bank accounts, but the use of these accounts for financial services is low, hence the need for this research.

The tendency is for bank account holders to withdraw the full amount of money that is deposited into their accounts and then proceed to spend all of it in cash (Deloitte, 2019). A study on the impact of factors that affect the adoption of digital payments in sub-Saharan Africa puts the percentage of adults not having access to formal banking services at approximately 60% (Soutter, Ferguson, & Neubert, 2019). The study indicates that payment methods are predominately in cash as it is perceived to be easy to use and do not come with trust issues. It is, however, acknowledged that financial inclusion requires access to formal financial services. Oyelami et al. (2017) also had a similar finding, namely, that sub-Saharan Africa has a high population of people not participating in formal financial services due to their reliance on cash (Oyelami, Saibu, & Adekunle, 2017).

In SA, the percentage of the population with bank accounts does not necessarily translate into access to formal financial services and enable financial inclusion. The number of households that own an investment account is low, which reflects that bank accounts are not used to access formal financial services (Mhlanga, Dunga, & Moloi, 2021).

Given that digitalisation has been found to be an enabler for sustainable financial inclusion in China (Chu, Shujun, Li, Strauss, & Zhao, 2023), the use of digital payments to enable financial inclusion in SA is clearly an area that requires further exploration.

To achieve the purpose of the study, literature pertaining to digital payments enabling financial inclusion was reviewed to gain more insights on the subject. A qualitative research methodology, anchored on the interpretivism philosophy, was chosen to enable the researcher to gain a deeper understanding of the contribution of digital payments towards financial inclusion in SA. Participants in the study were payments industry professionals drawn from the payments industry regulator, commercial banks which had experience in digital payments initiatives, fintechs involved in digital payments, mobile network operators (MNOs), industry bodies leading payments systems in SA, and payment card scheme companies. These participants (“actors”) were interviewed to gain their insights on the digital payments ecosystem, its challenges, the factors that could make them (the actors) interested in fostering financial inclusion, and the potential framework that could be used to foster financial inclusion through digital payments. The results were analysed using thematic analysis and discussed against the reviewed literature. Recommendations were then made on how digital payments can foster financial inclusion in SA. A framework was also provided influenced by the research findings and their discussion.

This study’s research questions were:

- a) How do stakeholders perceive the composition of the digital payments ecosystem in South Africa?
- b) What are the experiences and perceptions of stakeholders in the digital payment ecosystem regarding the adoption of digital payments in South Africa?
- c) In what ways do stakeholders in the digital payment ecosystem believe digital payments can enhance financial inclusion in South Africa?
- d) What are the perspectives of stakeholders in the digital payment ecosystem on the steps to be taken to achieve financial inclusion through digital payments in South Africa?

1.4. Rationale of the study

Financial inclusion, which is generally defined as having access to and use of formal financial services to satisfy one needs, is a societal challenge identified by both the NDP of SA and the South African Reserve Bank's (SARB), NPS Vision 2025 (South Africa Reserve Bank, 2018). The SARB (2018) indicated that access to financial services is at the heart of fostering financial inclusion and the digitalisation of financial services. In addition, how payment transactions are conducted (either by cash or cashless) has a bearing on whether the objective of financial inclusion is achieved. Therefore, the importance of financial inclusion brings into debate the future of payments as it relates to financial inclusion and the perceived impact of the digitalisation of payments on financial inclusion in SA.

The study poses critical questions in the context of high inequality in SA: How can unemployed and poverty-stricken communities access digital payments to improve their lives? The assumption is that most digital payment solutions are mainly focused on making a profit and not on improving and fostering financial inclusion in the country. Do digital payments improve sustainable growth and thereby increase employment opportunities which then contribute to the elimination of poverty, unemployment, and inequality in SA? These are some of the questions that make the study relevant to the South African context. Twenty-nine years after attaining democratic freedom, the issue of financial inclusion has become more urgent for the majority of the population, and this is confirmed by the South African government's aspirations on the issue. For example, the NDP aims to reduce unemployment to six percent by the year 2030, and 90% of the South African population should have access to formal financial services by 2030 (South African Government, 2012). The International Monetary Fund Report on SA's financial system's stability noted that financial inclusion has slowed down and reaching the "unbanked" remains a challenge (International Monetary Fund, 2022).

Given the above, the findings from this study may help improve the collaboration between the government, industry, the regulator, and the general population to prioritise the provision of financial inclusion through digital payments.

1.5. Delimitations of the study

The study focused on how digital payments can foster financial inclusion in SA. The impact of financial inclusion through digital payments on economic development was not in the scope of the study. In addition, the study did not investigate the impact of digital payments on poverty, inequality and unemployment.

1.6. Definition of terms

A **digital payment** sometimes called an **electronic payment**, is the transfer of value from one payment account to another using a digital device such as a mobile phone, POS (point-of-sale) device, a computer, a digital channel of communication such as mobile wireless data, or SWIFT (Society for the Worldwide Interbank Financial Telecommunication). This definition includes payments made through bank transfers, mobile money, and card payments, including credit, debit, and prepaid cards (Better Than Cash Alliance, 2022).

Financial inclusion is defined as individuals and businesses having access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered responsibly and sustainably (World Bank Group, 2022, para.1). Simply having a bank card does not mean financial inclusion if the holder of the card does not have access to useful and affordable financial products and services that meet their needs.

1.7. Assumptions

There are several definitions and understandings of what digital payments mean; hence, the definition of digital payments mentioned above was adopted in this study. Digital payments are those electronic payments done using digital devices and digital communication tools such as mobile phones and POS devices.

The approach assumed in this study was deductive reasoning.

The Actor-Network Theory (ANT) was identified as a suitable framework for this study. It helped with the translation moments starting with key actors in the ecosystem and their intentions and alignment to the problem of digital payments adoption to enable

financial inclusion. The framework addressed their interests, engagements and mobilisation to solve the challenges that emerged. This was the proposition for the study based on the assumptions identified.

1.8. Chapter outline

The structure of this research report is as follows:

Chapter 1 introduced the study. It covered the purpose of the study, its background, and its rationale. Furthermore, the chapter elaborated on the research problem, the research questions, the delimitations of the study, the definition of key terms and the assumptions of the study.

Chapter 2 explores the literature that portrays the nexus between financial inclusion and digital payments. The chapter also explores the theoretical lens through which the study was conducted.

Chapter 3 presents the research methodology underpinning the study. The chapter outlines the design of the study, data collection methods, and data analysis strategies. This chapter also covered the ethical considerations of the research.

Chapter 4 presents the findings of the study in terms of the research questions posed.

Chapter 5 discusses the study's findings in light of the ANT.

Chapter 6 concludes the study. It provides recommendations based on the study's findings, the contributions of the study and its limitations, and ends with a suggestion for further research and some concluding remarks.

1.9. Conclusion

The digitalisation of payments is an integral part of the future of payments in SA as it is in some countries around the world. Financial inclusion has been identified as one of the goals to grow the South African economy and improve the lives of its citizens. The nexus between digital payments and financial inclusion has been observed in

many countries. It is on these premises that this study investigated how digital payments can foster financial inclusion in SA.

The chapter which follows comprises the literature review and theoretical framework.

Chapter 2 – Literature review and theoretical framework

2.1. Introduction

The literature review assesses prior and relevant work that has been done in the field of study. Previous research helps the researcher assess the research area, identify areas that require further study, and justify the research questions, objectives and potential hypothesis (Snyder, 2019). In this study, the research questions guided the literature review and an attempt was made to also focus on literature that was published more than 15 years ago.

The themes covered in the literature review include the digital payments ecosystem, the interest of the actors in the ecosystem, digital payments' influence on financial inclusion, and frameworks used to drive financial inclusion through digital payments. The literature review will cover both the local and international contexts. It includes both seminal reports and peer-reviewed literature.

2.2. Literature review

2.2.1. Financial inclusion and digital payments

The International Monetary Fund (IMF), in its working paper published in June 2021 titled, "Is digital financial inclusion unlocking growth?", asserts that there is evidence that financial inclusion has a positive impact on economic growth (Khera, Ng, Ogawa, & Sahay, 2021). This evidence is based on research conducted on traditional financial services across Africa, the Middle East, Asia Pacific, and Europe. In the same vein, financial inclusion is one of the tenets of the aforementioned NDP 2030 (which is the South African government's vision) and the SARB's Vision 2025 document. This is because of the potential that financial inclusion has in enabling economic growth.

A study on the Indian economy concluded that financial inclusion is necessary to achieve economic growth in the country (Dipasha, 2016). The study confirms that financial inclusion is a driver of economic growth and the determinants of financial inclusion should be considered in the policy formulation of a country. While the study was done on the Indian economy, India, much like SA, is an emerging and developing

economy in the world. This conclusion was also corroborated in a study by Van, Vo, Nguyen, & Vo (2021). The authors examined international evidence on financial inclusion in economic growth. They found a positive correlation between financial inclusion and economic growth. The study acknowledged that given that the institutional frameworks of countries differed, the magnitude of the link between financial inclusion and economic growth may differ.

A study in China (Ahmad, Majeed, Khan, Sohaib, & Shehzad, 2021) took the subject of financial inclusion further by looking at digital financial inclusion and economic growth. It found that digital financial inclusion helps to deal with access barriers to formal financial services, and financial technology (fintech) companies can be used to deliver financial services at low cost to all areas, including remote areas and that this improves economic growth. The study raised the important aspect of using digitalisation to achieve financial inclusion.

Oliver Wyman (2021), in their report on the digitalisation of financial services in SA, notes that traditional financial services are engaging in digital transformation projects, and new digital entrants are also increasing competition in the financial services industry (OliverWyman, 2021). Access to digital financial services should transcend beyond the current banked population; in other words, the digitisation of financial services should increase access to formal financial services if financial inclusion is to be achieved. “The future of payments in South Africa...” report by Deloitte and Mastercard (Deloitte, 2019) argues that the country still has a few fundamentals for enabling financial inclusion that need to be addressed. According to Deloitte (2019), current informal sector players and those in rural areas still believe in using cash for transacting. Cash is still seen as a reliable method of payment and a store of value by many in rural areas. The same report established the need for educating people about financial services and creating trust in digital payments in SA.

The concept of digital payments and financial inclusion is important in the South African economic discourse. Many study groups and industry experts are looking at the South African NPS with anticipation of meaningful change for a better payments landscape (Deloitte, 2019). Deloitte’s (2019) report identified reducing the friction of transacting in cash, reducing transport-related costs, increasing financial

transparency, increasing security associated with cash being stolen or mugged because criminals are looking for cash, and increasing record keeping as some of the benefits of digital payments. If these benefits are achieved, a case for fostering financial inclusion can be made as these benefits have the potential to enable consumers in informal and rural areas to have access to payments using digital means.

According to the World Bank, financial inclusion is defined as “individuals and businesses having access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered responsibly and sustainably” (World Bank Group, 2022, para.1). This definition puts payments at the centre of financial products to meet consumer needs. In the past, having transactional accounts meant having access to financial services. Digitisation of financial services, and in particular payments, challenges this notion and widens payment options beyond just having a transactional bank account.

It is against the backdrop of the definition of financial inclusion, and the efforts of financial services industry players to modernise payments that the literature review is conducted.

2.2.2. Impact of digital payments on financial inclusion

M-Pesa, which is a mobile banking platform, has been a success story in digitising payments in East Africa (Oluwole, 2022). Although it started as a money transfer platform, it evolved into a fully digital financial services platform enabling digital payments and other services for individuals and businesses who adopted it. According to Oluwole (2022), M-Pesa played a significant role in serving and helping the unbanked in Kenya. Two percent of households in Kenya were lifted from poverty as a result of M-Pesa adoption, confirming the impact of digital payments on financial inclusion (Oluwole, 2022).

According to Peter Ndegwa, Safaricom CEO, “it was in a bid to deepen financial inclusion that they launched M-Pesa in 2007” (Oluwole, 2022, para.7). M-Pesa has since increased access to formal financial services by as much as 83% which reflects

the remarkably positive impact that digital payments have on financial inclusion (Oluwole, 2022).

China's digital payments have transformed the lives of those who live in remote areas in that they can now participate in financial services. China's tech giants Alipay (a Chinese e-commerce company) and Tencent (a Chinese technology company) led the shift from traditional finance based on cash to digital (PWC, 2019). They also introduced quick response (QR) codes which enable customers to make instant payments via their mobile phones as long as they can read a QR code. China increased the use of e-wallets and mobile money which reduced cash dependency by as much as 30% between 2011 and 2016 (PWC, 2019). The integration of WeChat Pay – a mobile payment and digital wallet service, introduced digital payment options that allowed rural, underbanked, and unbanked Chinese populations access to financial services. This had a massive impact on financial inclusion, as people who were not able to access banking could now access financial services via their mobile devices. Tencent and Alibaba, having seen the positive impact of digital banking, are now expanding to other countries including India, through strategic investments and/or following their customers when they travel abroad (Kapron, 2018). China, along with other countries in Asia, represents a case study of how to use digital payments to reduce dependency on cash and provide access to financial services to those unbanked and living in remote areas, thereby enabling financial inclusion. An evaluation of the use of digital platforms in China reveals that these platforms are secure, convenient, and easy to use by citizens; hence, their adoption was not an issue (PWC, 2019).

In Indonesia in 2014, as much as 64% of the banked population was not included in formal financial services (Azali, 2016). While the Indonesian government planned to drive access to financial services and improve financial inclusion by reducing dependency on cash and introducing digital payments through e-money, inadequate infrastructure and maturity of the business partners hindered its plans to do so.

SA has a unique set of attributes compared to other countries where research on access to financial services has been conducted. The country has a high percentage of people with a bank account who hardly use it for accessing formal financial services,

as they still prefer to use cash (PWC, 2019). Approximately 80% of the population in SA have bank accounts but the country still uses cash as a method of exchange of value (Soutter, Ferguson, & Neubert, 2019). Merchants in rural areas are reluctant to accept digital payments and this has a direct impact on financial inclusion. The South African situation is a typical illustration that having a bank account is not a guarantee for financial inclusion. In addition, those who live in remote areas continue to depend on cash as digital payments are largely inaccessible to them. This creates another hurdle for rural dwellers as they must travel to nearby cities to access financial services, which is an expensive and inconvenient process.

This study argues that SA, like other developing countries, can use digital payments to improve access to formal financial services and foster financial inclusion. Financial inclusion will help eradicate the triple challenge faced by SA, namely, unemployment, inequality and poverty as envisaged in the NDP 2030, a vision and strategic plan for the country.

2.2.3. Factors that can lead to digital payments improving financial inclusion

A study on the acceptance of digital payments in rural India established poor infrastructure as one of the main reasons for the limited adoption of digital payments (Koul, Jasrotia, & Mishra, 2021). The study identified the importance of retailers' acceptance of digital payments as a catalyst towards their adoption and thereby improving financial inclusion. This is sometimes referred to as the supplier side of digital adoption (Soutter, Ferguson, & Neubert, 2019).

Perceived ease of use of digital platforms is another factor that should be considered when the adoption of digital payments is being considered. When retailers and customers perceive the digital platform to be cumbersome, not user-friendly, and insecure, they are likely to revert to physical cash transactions as their preferred payment method. Deloitte (2019) investigated the future of payments in SA and argued that digital payments must be perceived by the adopters to have the same features as cash, particularly when it comes to immediate payments.

Low levels of trust and perceived risks such as cyber fraud when using digital payments are some of the factors contributing to low adoption of digital payments (Koul, Jasrotia, & Mishra, 2019). Customers, to adopt and use digital payments, must trust that they are secure and will always work. Trust also reduces perceived risk in digital payments, thereby increasing adoption which improves financial inclusion. India saw an improvement in their demonetisation journey when rural retailers started accepting digital payments (Sivathanu, 2019). Digital payments must use technology that is relatively easy to use, or/and an aggressive education plan must be put in place to drive adoption.

A team comprising payments professionals from SA and led by consulting firm PWC, visited China, India, Thailand and Singapore to learn about those countries' payments modernisation journeys. In their report, the "Payments Study Tour 2019", it is stated that internet connectivity is one of the factors that could accelerate or decelerate digital financial services (PWC, 2019). Low or affordable costs of data are also enablers of the adoption of digital services. SA, for example, has high data costs compared to other countries and in some instances, network coverage is not good in remote areas (PWC, 2019). This does not only affect customers who may want to use digital devices to make payments but also merchants who need connectivity to accept digital payments. Costs, such as interchange fees for merchants to accept digital payments, can also be inhibitors to digital payment adoption (Deloitte, 2019).

Regulation and incentivisation in promoting the digitalisation of payments are other areas that require close review. In Thailand, the government took a leading role in modernising payments into digital payments. To incentivise customers, they introduced an approach of paying tax refunds through digital channels (PWC, 2019). In Singapore, the Monetary Authority of Singapore (MAS) led the change to accelerate the modernisation and digitisation of payments. It also collaborated with non-banks in the digital payments ecosystem (fintechs, MNOs, and technology companies) to ensure that they were also part of the journey to modernise financial services. Countries that were able to modernise payments and shift to digital financial services with acceptable timelines had one thing in common, that is, the modernisation journey was led and coordinated by their governments. In the South African context, the National Payment System (NPS) Act no. 78 of 1998, the SARB as the regulator, and

the NDP 2030 could be the anchors that provide structured leadership to foster financial inclusion through digital payments.

In SA, it is anticipated that better infrastructure, regulation (adjustment of the NPS Act to include other players in the payments system), and financial education will lead to high adoption of digital payments which will improve financial inclusion. A study by Van Niekerk and Phaladi (2021) found that insufficient information and education are contributing to a lack of adoption of mobile money, a form of digital payment (Van Niekerk & Phaladi, 2021). The authors point out that smartphones and internet penetration should help with the adoption of digital payments, mobile money in particular, and contend that digital payments are the most convenient way for people in remote areas to access financial services at an affordable cost. Fraudsters, also take advantage of security loopholes in digital payments. As a result, and as alluded to earlier, trust is also an important determinant in the adoption of digital payments. Van Niekerk and Phaladi (2021) conclude that the adoption of digital financial services in SA has the potential to increase the level of financial inclusion in the country.

2.2.4. Digital payments ecosystem in South Africa

Immediate payments, also known as real-time clearing (RTC) payments, have been part of the digital payments ecosystem in SA since 2006 (Deloitte, 2019). The South African payment systems were rated amongst the best in the early 2000s (Deloitte, 2019). However, these were always implemented in silos by the different commercial banks and the costs for immediate payments were too high for some rural customers (Thompson, 2021). Instant payments, facilitated by the five major banks operating in SA (Standard Bank, Absa, FNB, Nedbank and Capitec), are still geared towards moving cash from one cash-dispensing outlet to another. For example, although Standard Bank Instant Money allows one to send money to those in rural areas, the recipient still needs to collect the money through either an ATM, partner retail stores, or any outlet which is part of the ecosystem. However, it is the researcher's opinion that this does not foster financial inclusion as it does not really provide access to formal financial services but only transports cash from one person to the next through a banking system of convenience. The same wallet products, such as Instant Money, are found in all mainstream commercial banks. The type of financial inclusion

envisaged by this study is one where individuals have access to formal financial products that they can use for their needs. Products would include transactional, investments, payments, credit and lending.

The Vodacom-led M-Pesa project referred to earlier was a success in Kenya and other areas but had very limited success in SA (Businesstech, 2020). Vodacom executives at the time apportioned the blame on the regulatory environment, suggesting that SA has one of the worst regulatory environments supporting mobile money (Businesstech, 2020). The regulation environment was seen as being geared towards favouring commercial banks.

In SA, over 58% of the population is formally banked and when the South African Social Security Agency (SASSA – the government social development agency that administers grants to vulnerable citizens) recipients are included, the number grows to over 77%. However, the population is still dependent on cash transactions. This is in part because social grant recipients generally withdraw all money deposited into their accounts and spend it in cash.

The perceived players in the digital payments ecosystem in SA are the following:

Government through the National Treasury. The National Treasury is the custodian of economic policy in the country.

South African Reserve Bank (SARB). It is mandated to protect the value of the currency and one of its functions is to manage the NPS to maintain a sound financial system for the country.

BankservAfrica. It manages payment transactions on behalf of banks.

Mastercard, Visa and Strate. They manage payment transactions.

Payments Association of South Africa (PASA). A payments industry body that manages the payments system on behalf of the SARB.

Commercial Banks.

Payment Service Providers (PSPs).

Fintechs and technology companies, although part of the ecosystem, are not formally recognised as part of the ecosystem. MNOs are also not formally recognised as part

of the ecosystem although their role in digital payments is of paramount importance given their role in mobile phone adoption.

2.2.5. A framework that could be used in the adoption of digital payments to enable financial inclusion in South Africa

The Financial Sector Conduct Authority (FSCA), the regulator of financial institutions in SA, in their report on financial inclusion strategies, identified that an enabling environment covering both demand (customers) and supply (providers) is one of the requirements to drive financial inclusion in SA (Financial Sector Conduct Authority, 2021). In addition, it also identified the legal and regulatory environment as part of an enabling environment that should be conducive to driving digitisation and new, affordable, and easily accessible financial services (Financial Sector Conduct Authority, 2021). The report captured elements that could inform a framework that will enable the adoption of digital payments to foster financial inclusion. The elements identified included the following:

Environmental considerations. These cover enabling conditions such as infrastructure development, internet connectivity, mobile data costs, and electricity supply.

Regulatory environment. Payment processes and interactions are regulated and this has an impact on digital payments.

Payment actors' collaboration. In countries visited by the payments professional team that conducted the "Payments Study Tour" in 2019, it was established that an industry collaboratory body was useful in driving digital payments (PWC, 2019). This body should also clearly define the role of fintechs, mobile operators and technology players in the payments ecosystem.

Products and services. These are important aspects of digital payments and include product costs – flexibility, affordability, and perceived low-risks.

Accessibility of digital payments. This is from both the supply and the demand side and refers to merchants providing and customers buying the services.

Financial and digital education. For both merchants and customers.

This study suggests that developing a digital payments ecosystem framework will help establish a workable plan for accessible financial services through digital payments to improve financial inclusion.

2.3.Theoretical framework

Anfara and Mertz define a theoretical framework as a lens through which phenomena can be studied. It is the frame on which the researcher's work hangs (Mcilheran, 2007). It also shows how the study is supported by the literature review and links with the problem statement.

As noted, SA is grappling with what has been termed a “triple challenge”, namely, poverty, unemployment, and inequality. Also as noted, one of the levers identified by the NDP 2030 and included in the Vision 2025 of the SARB is financial inclusion (South Africa Reserve Bank, 2018). The World Bank, amongst others, has also identified that financial inclusion positively impacts economic growth.

Traditional financial services improve financial inclusion; however, their reach in terms of access by customers and suppliers has been limited, particularly in the remote and rural areas of the country. In SA, although access to bank accounts has increased over time, their use has been very limited due to many factors, including the absence of opportunities to use a bank account for purchasing, and payment services in rural areas. With digital transformation in financial services, digital payments are one of the elements representing the future of payments in the country.

This study is premised on the notion that digital payments can enable a wider reach of potential users, and be easily accessible and affordable for all, including those living in the rural/remote parts of SA. Digital payment processes do not require commercial banks to set up big infrastructure in the form of, for example, a branch or office. If financial inclusion is about access to formal financial services for one's benefit, then the main question that this study poses is: “How can digital payments foster financial inclusion in South Africa?”.

For digital payments to enable financial inclusion, the adoption of digital payments by customers and suppliers (including third parties enabling the processing of digital payments) must improve and permeate through to rural customers, service providers and other ecosystem actors. This includes examining the factors that need to be considered for digital payments to be adopted on a large scale and the role that the government and/or regulator/s should play to enable financial inclusion through digital payments. The actors' roles and their contributions to the digital ecosystem need to be assessed as different actors play different roles in the process of fostering financial inclusion.

Given the above, this study was anchored on the Actor-Network Theory (ANT). The ANT provides a research framework that enables the examination of dynamic and socially constructed phenomena and their interactions (Latour, 1996). In the context of this study, the ANT helped to understand the role of actors in the process of using digital payments to foster financial inclusion in SA. This was done by analysing the characteristics of the actors involved, the organisations they represent, the resources they have at their disposal, the roles they play, the interests and ideas they stand up for, the relationships among them, as well as the identification and understanding of the factors that influence their decisions.

The ANT framework was previously used in Brazil when the country was formulating its financial inclusion agenda. Sela, Gonzalez and Christopoulos (2020) summarise the translation processes of the financial inclusion agenda in Brazil, which was captured through the translation moments of the ANT. These are problematisation, interessement, enrolment, and mobilisation as depicted in Figure 1 below (Sela, Gonzalez, & Christopoulos, 2020).

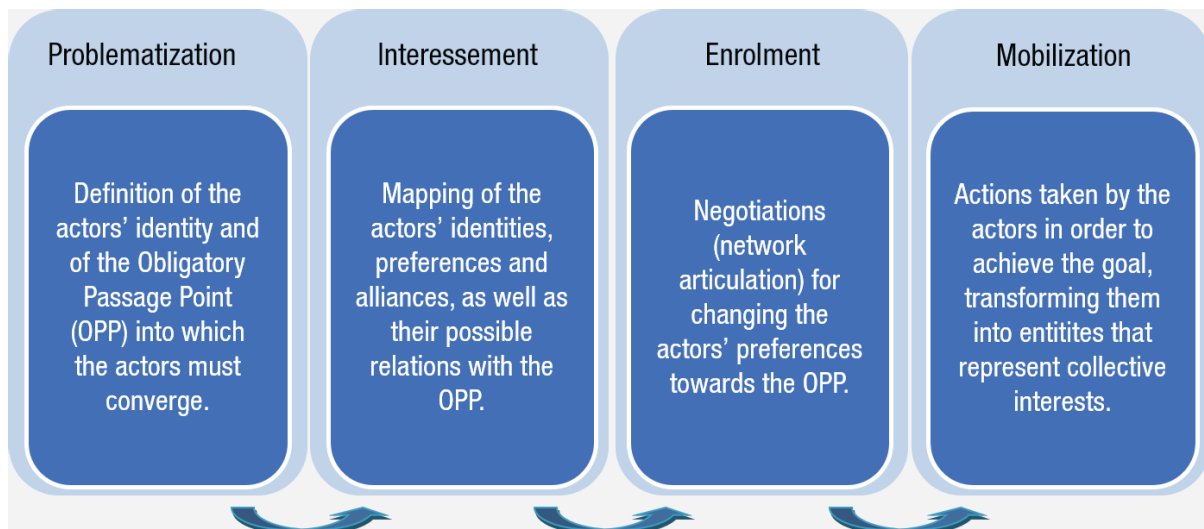


Figure 1 – Actor-Network Theory translation moments

Sela, Gonzalez, & Christopoulos (2020) indicate (as per Figure 1), that *problematization* refers to the actors' identification of a point at which all actors share the same problem or at least are aware of the problem in the network. With regard to this study, this refers to the issue of fostering financial inclusion using digital payments.

Interessement refers to the phase where intended relationships amongst actors are forged. In this study, it is a stage where all actors' interests are mapped to understand which actors have interests aligned with the network's interests. It also assists in understanding which actors require more persuasion due to them protecting their own interests which may not be aligned with the network's interests.

Enrolment is when the actors have to negotiate for the benefit of the network. Incentives are used to get other actors interested in aligning with the network's interests. Some of the actors' commercial aspirations are strong because they stand to lose some revenue and therefore require incentives to move over to the bigger network's interest.

In *mobilisation*, the final state, actors are mobilised by the network leader to surrender their positions for the benefit of the network. In this study, this entails the identification of the person or entity that should play the role of network leader or mobiliser in the

network. Actors would generally surrender their positions and interests to those of the network as presented by network leaders (Latour, 1996).

2.4. Conclusion

The literature review confirms that the digitisation of payments, demonetisation and reducing dependency on cash has had a positive impact on financial inclusion in several countries. Countries such as India, China, Thailand, Pakistan, and Singapore have seen an uplift in their citizens' access to formal financial services which directly improved their financial inclusion as a result of initiatives they (the countries) took to modernise and digitise payments. The collaboration of actors in those countries was also evident in the report of the aforementioned "Payments Study Tour", with the roles of government and/or the regulator clarified, and benefits made clear. The gap concerning how different actors can collaborate to use digital payments to foster financial inclusion in SA does, however, remain. The literature also confirms the wide acceptance that financial inclusion leads to economic growth. The range of challenges to attaining financial inclusion identified in other markets are relevant in the South African context and require further exploration.

The ANT was adopted as the lens through which the contribution of digital payments towards fostering financial inclusion is assessed.

Chapter 3 follows and concerns the research methodology adopted.

Chapter 3 – Research methodology

3.1. Introduction

This chapter discusses the methodology which was adopted in the study. The "Research Onion" framework by Saunders et al. (2012) was used to develop the research methodology. The framework is divided into six layers, namely, research philosophy, research approach, research methods, research strategies, time horizon, data collection and analysis as depicted in Figure 2.

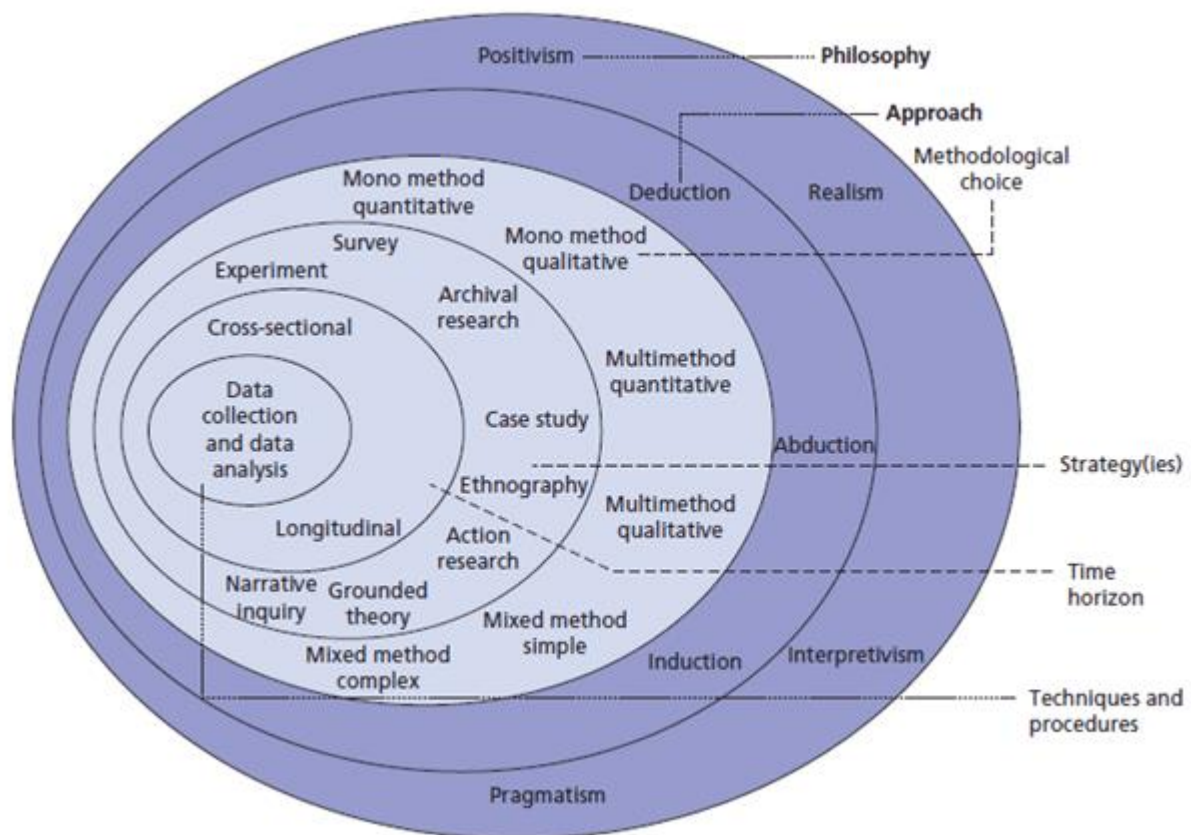


Figure 2 – The "Research Onion" framework

Source: Saunders et al. (2012)

3.2. Research philosophy

A research philosophy seeks to explain the assumptions that are made in the course of developing knowledge. The research philosophy chosen by a particular study is influenced by how the researcher sees the world which ultimately influences how s/he

conducts the study. Saunders et al. (2012) identified four major research philosophies, namely, positivism, critical realism, interpretivism and pragmatism.

3.2.1. Positivism

This research philosophy is used when the data can be quantifiable and the phenomenon being researched can be measured objectively (Saunders et al., 2019). Quantitative data analysis methods are usually used in this philosophy and the philosophy is also applied to experimental studies. Positivism believes that knowledge can only be considered genuine if it can be proven by science (Ryan, 2018).

This philosophy was not used because the nature of this study entails that the researcher gathers subjective views, that is, in-depth insights from participants. Data collected from participants pertained to their own experiences which cannot be subjected to quantitative methods.

3.2.2. Critical realism

Critical realism is a philosophy generally used towards understanding social constructs (Saunders, Lewis, & Thornhill, 2012). Mixed methods of data collection are often used in this philosophy.

This study did not use critical realism as mixed methods of data collection were not deemed suitable for the study.

3.2.3. Interpretivism

This research philosophy argues that people's experiences and understanding of truth and knowledge are subjective. Researchers, therefore, are unable to get objective views on a phenomenon as people tend to share their own experiences (Tsang, 2016). Thus the data collected often reflects the values, beliefs, and experiences of the participants.

This study adopted the philosophy of interpretivism to understand how digital payments can foster financial inclusion from the perspectives of payment professionals in the South African payments industry. Data collected from the

participants reflected their own experiences. The interview guide (see below) which was used to collect data was based on semi-structured interview questions which enabled the researcher to probe the participants in instances where their experiences were not forthcoming.

3.2.4. Pragmatism

According to Saunders et al. (2012), this philosophy uses a mixed-method research approach. It combines both subjective and objective ways of assessing a phenomenon. Pragmatists do not believe in the use of one research approach to interpret a phenomenon.

This philosophy was not used because the purpose of the study was to get an in-depth understanding of the contribution of digital payments to foster financial inclusion.

As outlined above, the interpretivism philosophy was deemed appropriate for the study.

3.3. Research approach

A research approach refers to the plan encompassing the steps to be followed by the researcher when collecting, analysing and interpreting the data to arrive at meaningful conclusions. There are three approaches as described below.

3.3.1. Inductive approach

An inductive research approach is focused on observing and finding patterns to develop a theory or develop broad generalisations based on specific observations, interviews, surveys or studying secondary data (Streefkerk, 2023). In the inductive research approach, the data collected informs the formulation of theory.

3.3.2. Deductive approach

The deductive approach aims at testing a theory that already exists. This approach uses a theoretical framework to research a particular problem. In some instances, the theory being tested may need to be adjusted or modified if the results of the findings suggest the need to modify it. Streefkerk (2023) indicates that in large research

projects, researchers may start with an inductive research approach to generate a theory and then move on to a deductive approach to either reject or not reject the theory.

Figure 3 below illustrates the steps involved in inductive and deductive reasoning.

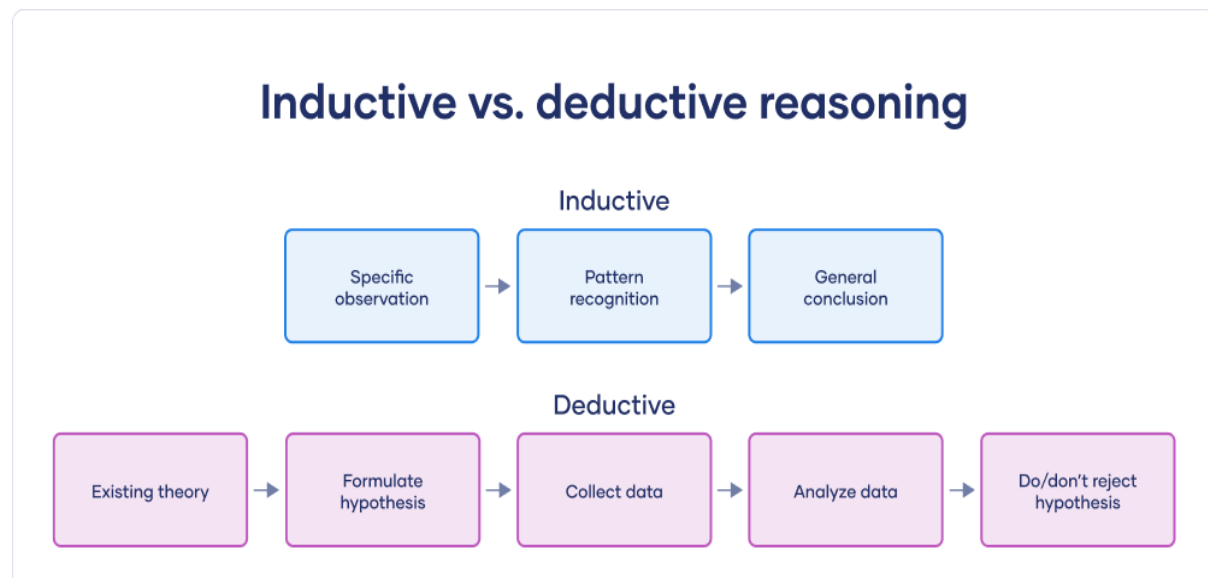


Figure 3 – Inductive vs. deductive reasoning

Source: Scribbr (2023)

3.3.3. Abductive approach

The abductive approach starts with the discovery of surprising facts and the researcher moves on to explaining those surprising facts (Sanders et al., 2012). In this case, the researcher may choose the best explanation from many alternatives that seek to explain the surprising fact. The abductive approach does not depend on a theoretical framework and, therefore, the abductive approach enables a researcher to be creative in how s/he conducts the research.

In this study, a deductive approach was used to collect and analyse data. The preference for using the deductive approach was informed by the quest to gain an in-depth understanding of how digital payments can foster financial inclusion in SA through the lens of the ANT. The understanding was drawn from insights gained from the semi-structured interviews with key stakeholders (actors) who had experience in the implementation or management of digital payments initiatives or were part of the

ecosystem involved in digital payments in SA. An understanding was also drawn from the available literature on the subject matter.

3.4. Research methodology

The three research methods identified by the Research Onion are qualitative, quantitative and mixed methods.

3.4.1. Qualitative method

Qualitative research focuses on gaining a deeper understanding of a particular social or human phenomenon and/or problem (Creswell, 2013). The most common data collection methods in this approach are observations where the researcher observes and records what they see or hear; one-on-one interviews; focus groups where the researcher engages a group of people discussing a particular topic or set of questions; and surveys where the researcher ensures that they are asking open-ended questions (Bhandari, 2023). Data analysis in qualitative research is focused on finding similarities and/or differences in the data collected. These similarities are then grouped into themes for further analysis.

Since this study used the qualitative method, the following themes were explored based on the chosen theoretical framework (ANT). "Digital payments and financial inclusion – actors in the network" was the first theme explored. In this theme, the challenges faced by the different actors were identified. In the ANT, this translation moment is called problematisation.

The second theme was the "Digital payments ecosystem players/actors and their interests". In this theme, the actors' interests were explored and this translation moment is called intersement. This is where the different actors identify a common interest and it provides motivation for all the actors to be interested in solving the challenges.

The third theme was "Ways in which stakeholders believe digital payments can be used to enable financial inclusion in SA and how to get stakeholders involved". This translation moment is called enrolment.

The last theme was “The steps that can be taken to achieve financial inclusion through digital payments in SA”. This would include a potential framework that could be used to achieve financial inclusion through digital payments. This translation moment is called mobilisation in the ANT.

3.4.2. Quantitative method

The quantitative method relies on numerical and statistical data to understand the relationship between variables. It can be used to explore theories, test hypotheses or generate new frameworks through statistical testing (Bhandari, 2022). This method is well suited in instances where the researcher is poised to work with a large sample of data.

3.4.3. Mixed methods

There is a view that choosing either qualitative or quantitative methods may be limiting to the researcher (Creswell & Clark, 2017). Creswell & Clark (2017) believe that researchers should perhaps use both methods, in that using one method or approach may not be able to answer all the questions and cover all the angles related to the phenomenon. Adopting a mixed-method approach is, however, time-consuming and some problems may require the use of only one approach instead of the other.

3.5. Research strategies

There are eight different research strategies as espoused in the Research Onion, namely, experiments, surveys, action research, archival research, naturalistic observation, ethnography, grounded theory, and case studies (Saunders, Lewis, & Thornhill Adrian, 2007).

3.5.1. Experiments

Experiments in their simplest form focus on testing the causal links between variables, and more specifically whether a change in the independent variable causes a change in the dependent variable. Often these are done in a controlled environment such as laboratories, which gives the researcher more control over the context where the

testing is happening (Hakim, 2000). This approach is generally difficult to use in a situation that requires conducting experiments on humans.

This approach was not used in this study since the intention was not to conduct experiments but to develop a framework that can be used to foster financial inclusion through digital payments using an already established framework.

3.5.2. Surveys

A survey involves using a questionnaire to collect a large amount of data from participants. This approach is used widely in quantitative studies where one can analyse data statistically. Therefore, this approach was not adopted in this study.

3.5.3. Action research

Action research is an approach that aims to actively involve the participants in the research process, promote collaboration between researchers and practitioners, and facilitate social change based on the findings and insights gained from the research. By engaging in action research, participants can gain a deeper understanding of their own practice and create informed action plans to improve it. The researcher is part of the change process (Coghlan, 2019).

3.5.4. Archival research

This research approach relies on documents, new and old, as the primary source of data. As this approach entails primary data collection, the success of this approach is constrained by the quality of archived data that is being used. Using this approach requires that the researcher first confirms the availability and access to such data before the research commences.

3.5.5. Naturalistic research

Naturalistic research, as part of qualitative research, refers to the research method where the researcher observes and records their subjects' interactions and behaviours in real-world settings (Bhandari, 2023). In this approach, the researcher observes their subjects in the subjects' "real" world. The subjects may be unaware that they are being observed, which is covert observation, or they may have been made aware that they are being observed, which is overt observation (Bhandari, 2023).

In this study information from participants was gained through interviews and not through real-life observations. Therefore, this approach was also not used in the study.

3.5.6. Ethnography

Saunders et al. (2007) explain ethnography as an approach where the researcher has to immerse himself or herself in the world of the research subject as completely as possible in order to be in a position to describe and explain it properly. It is usually relevant when the researcher wants to gain a better perspective to explain insights from the context of the research subject.

This approach is not too different from naturalistic research where there is a need to observe real-life interaction. Doing so was not the focus of this study.

3.5.7. Grounded theory

In grounded theory, the emphasis is on developing and building a theory based on data collected without having formed a theoretical framework to refer to (Tsang (2016).

3.5.8. Case study

In the case study approach, the investigation of the issue or phenomenon aims to gain a richer and deeper understanding of context in real-life situations. The context in case study research is important although the boundaries may not be evident between the phenomenon and the context (Yin, 2017).

3.6. Time frame horizon

There are two basic time frames in research as per the fifth layer of the Research Onion, namely, longitudinal and cross-sectional studies (Saunders et al., 2019).

3.6.1. Longitudinal studies

In longitudinal studies, researchers study the same phenomenon for a prolonged period, either continuously or repeating the same processes (Thomas, 2023). In such studies, the researcher may seek to assess whether there are possible changes that may occur within the phenomena under study and if there are any changes over a long

period. This approach is usually applied in medicine and economics, subject areas that require observations over a long period. In this time horizon, the way data is being collected should remain the same over the duration and the recording of such data should also not change. A longitudinal study can be very costly as it is often a long process.

This study was not longitudinal as time was an important constraint.

3.6.2. Cross-sectional studies

According to Thomas (2023), cross-sectional studies are the direct opposite of longitudinal studies in that they are done over a short period and do not entail observing the same participants over that period. In a cross-sectional study, a researcher can study different participants over a short period and provide feedback about all of them.

This study was cross-sectional as it is part of an academic programme that needed to be completed within a year.

3.7. Research design

This study adopted the case study research design. This design was chosen as the study sought to gain in-depth insights into how digital payments can foster financial inclusion. This study was concerned with how digital payments can influence financial inclusion. This design was considered the most appropriate as the study was geared towards finding the “how”, which is the basis of case study research design (Starman, 2013).

3.7.1. Data collection methods and analysis

This section describes the sampling plan and methods, the target population and sample size, the data collection methods, the reliability and validity of the research and the analysis of the data collected.

3.7.1.1. Sampling plan and methods

McCombes (2023) indicates two primary sampling methods that can be applied in research. The first is probability sampling which involves random selection and is most suited to quantitative research methodology. The second is non-probability sampling which involves non-random selection methods based on certain criteria and allows the researcher to collect data for qualitative research purposes (McCombes, 2023). Because non-probability sampling is based on specific criteria and not everyone in the population has an equal chance of selection, there is always the risk of bias which the researcher must be aware of.

There are four types of non-probability sampling methods as per McCombes (2023), namely, convenience sampling, purposive sampling, snowball sampling and quota sampling.

3.7.1.1.1. Convenience sampling

In this sampling method, participants are chosen based on their proximity and accessibility to the researcher. This is the most cost-effective sampling method since the participants would, in most cases, be in close physical proximity to the researcher.

This study used this sampling method due to the participants' proximity to the researcher.

3.7.1.1.2. Snowball sampling

This sampling method entails that the chosen participants may know someone who could also add value to the research and, therefore, suggest they be invited to participate.

In this study, some participants were proposed by the main chosen participants to also participate. They agreed to participate in the study although they were not in close proximity to the researcher.

3.7.1.1.3. Purposive sampling

This sampling method requires the researcher to use his/her judgement on who should participate and provide the most useful information for the purpose of a particular study

(Moser & Korstjens, 2018). This method allows the researcher to select the most appropriate participants who will provide the most useful and relevant information for the study.

This was the most suitable of all sampling methods as the study was about getting in-depth insights into how digital payments may foster financial inclusion in SA. The study required people who have experience and knowledge about digital payments and financial inclusion, and this required that the selected participants be involved in the digital payments ecosystem. This sampling method was deliberately chosen for the study to ensure that relevant insights from the participants were obtained.

3.7.1.1.4. Quota sampling

In quota sampling, the researcher divides the population using some non-random criteria. This entails that the researcher has a predetermined number of participants who must participate in the study from the chosen population (Nikolopoulou, 2023).

This method was not applied in this study as the most critical criterion was to get views from players in the digital payments ecosystem.

Thus, as outlined above, the researcher used a mixture of three non-random sampling methods with the emphasis being on purposive sampling.

3.7.1.2. Target population and sample size

Studies on the sufficiency of sample size in qualitative research have been conducted without reaching any clear consensus. Context, however, is always important in determining an adequate sample size in qualitative research (Boddy, 2016).

Researchers using qualitative research methods must be transparent in their selection of sample size in order to collect as much data as possible for the purpose of their research (Vasileiou, Barnett, Thorpe, & Young, 2018). The focus of this study was to gain a deeper understanding of the digital payments ecosystem and how digital payments can be used to foster financial inclusion in SA. It was, therefore, important for the researcher to ensure that the sample selected supported the qualitative nature of the study by being experts, knowledgeable and able to provide deep insight into the

subject. To maintain the expected high quality and deeper insights, the number of participants was chosen to ensure views from key players were presented and captured.

The target population chosen for this study were professionals in the digital payments industry who either had experience in managing digital payment initiatives or were part of the digital payments ecosystem. The population included the payments industry body and its members for their overall experience in managing digital payments and payment modernisation initiatives across the industry.

The sample size was informed by the need to cover as many role players in the industry as possible. The participants who eventually took part in the study represented the following areas of the digital payments ecosystem:

The SARB as the payments regulator in SA.

Commercial banks as facilitators of digital payments.

Payment industry bodies for their insights on the management of payment systems.

Banking industry bodies for their experiences and insights in the banking industry.

Mobile network operators have an important role in digital payments.

Fintechs involved in digital payments, as they brought their perspectives on the ecosystem's challenges.

Card schemes/payment processing facilitators for their experience and insight into digital payment processing.

A total of 12 participants took part in the study. As can be seen above, these participants represented key players in the payments system in SA. The researcher, therefore, determined that this was an adequate sample size and one that allowed for a deep engagement with the subject. However, it is acknowledged that a limited sample size may be a limitation in qualitative research.

3.7.1.3. Interview venues/sites

All participants were requested to participate voluntarily in this study. Upon accepting to participate, an interview was scheduled to be conducted online via Microsoft Teams, a video conferencing platform that allowed for on-camera meetings and recording.

Thus all interviews were conducted virtually using the Microsoft Teams video conferencing facility whereby the interviewer and interviewee could see each other on video. The video meeting allowed the researcher to observe facial reactions when a participant was answering questions. The online platform enabled the recording and transcription of the notes and allowed the researcher to go back and listen for points that may not have been clear.

3.7.1.4. Data collection method

In-depth interviews were conducted online to gather the required data. Participants were contacted requesting their participation in the study. Once, they had agreed to participate, an interview session was scheduled at a time that was convenient for both the interviewer and interviewee. Interviews were used primarily to deeply understand the phenomenon being studied (Moser & Korstjens, 2018). Prior to data collection, interviewees were informed that the session would be recorded and that their input would only be used for research purposes. They were asked to acknowledge that they understood what the research was about and that they were voluntarily agreeing to participate in the study. As outlined earlier, interviews were conducted with participants representing the regulator (SARB), payments industry bodies (BankservAfrica, Payments Association of South Africa), leaders in commercial banks and payment service providers, fintech companies, and MNOs.

3.7.1.5. Research instrument

An interview guide was developed to conduct the interviews. The guide addressed the following research questions as indicated in Chapter 1:

- a) How do stakeholders perceive the composition of the digital payments ecosystem in South Africa?
- b) What are the experiences and perceptions of stakeholders in the digital payment ecosystem regarding the adoption of digital payments in South Africa?
- c) In what ways do stakeholders in the digital payment ecosystem believe digital payments can enhance financial inclusion in South Africa?
- d) What are the perspectives of stakeholders in the digital payment ecosystem on the steps to be taken to achieve financial inclusion through digital payments in South Africa?

As discussed, this study was anchored on the ANT and sought to identify each part of the ecosystem/network and how the parts/actors were supposed to act together to achieve the network objectives.

Appendix B shows the alignment between the ANT, research questions, and interview questions.

3.7.1.6. Overview of how the interviews were conducted

The interviews were conducted using the designed interview guide (see Appendix A) with questions arranged to cover the research questions and the ANT translation moments, namely, problematisation, Interessement, enrolment and mobilisation with regard to digital payments. Questions covered the “What, Who and the How” in terms of actors in the ecosystems, the challenges they faced, and how these challenges could be addressed. The average duration of the interview was 30 minutes.

3.7.1.7. Data analysis

The study used thematic analysis to identify themes and patterns emanating from the interviewees’ responses. The thematic approach entails the following steps: preparing data for analysis, reading or observing data, sorting or coding data, and creating themes (Fade & Swift, 2010).

Since the deductive approach and the ANT were used in the study, the responses to the interview questions were matched with the corresponding research questions to allow for a better interpretation of the findings.

3.7.1.7.1. Preparing data for analysis

As noted, interviews were conducted virtually with the aid of Microsoft Teams’ recording and transcribing capabilities. The audio recording and transcripts were coded in a way that removed the identity of the participants. The transcribed texts were checked in terms of quality assurance.

3.7.1.7.2. Reading and observing the data

The researcher read the transcripts and also listened to the recordings of the interviews. Listening to the recordings provided the researcher the opportunity to

observe the non-verbal cues of the participants when they were answering questions. Moser & Korstjens (2018) refer to paying attention during analysis to non-verbal cues like tone changes and pauses during interviews, and certain words being emphasised.

3.7.1.7.3. Sorting or coding the data

The data was sorted and categorised in a manner that related to the ANT and aligned with the research questions. To maintain the anonymity of participants, individual participants were allocated a code. Data was coded into themes, and these enabled the researcher to perform further analysis based on the emerging themes (Ravindran, 2019).

3.7.1.7.4. Creating themes – using the data

Ravindran (2019) recommends that emerging themes must be identified from the analysis of data so that those themes can be addressed in the discussion and recommendations. In this study, themes were developed based on the analysis of the data.

3.7.2. Quality assurance – dependability, credibility, confirmability and transferability.

To ensure good quality research, findings need to be dependable, credible, confirmable and transferable. These are the main criteria used to evaluate the quality of research (Nowell, Norris, White, & Moules, 2017 citing Lincoln and Guba, 1985).

Dependability in qualitative research relates to the sustainability of the research outcomes over time. If the process is logical, traceable, and documented, research outcomes become dependable (Tobin & Begley, 2004). Dependability is also about the reliability and consistency of research findings in that someone who was not involved in the research can conduct the same research with similar participants and come to the same findings (Streubert & Carpenter, 2007). In this study, data collection and analysis were based on an identified methodology. The use of an interview instrument with specific questions provides a uniform way to improve the dependability of the findings. Thus all participants were asked the same questions.

Nowell et al. (2017) refer to credibility as the alignment between participants' views and the presentation by the researchers. It also refers to the level of accuracy of the research method/s and other researchers' views. It is concerned with the degree to which the findings actually represent the true meaning of what the participants wanted to get across (Moon, Brewer, Januchowski-Hartley, Adams, & Blackman, 2016). The truth of the findings is the focus of this quality assurance element. In this study, the research design was carefully done to ensure the participants' views were captured via recordings and transcripts. Strictly adhering to the interview guide helped to maintain the credibility of the findings. A comprehensive study of the relevant literature including the outcomes of the study tour led by PWC was done. Also lending to the credibility of the findings was the researcher's attendance at industry conferences such as the Open Payments Conference in Cape Town in 2022 and the BankservAfrica Conference in 2023, where several aspects of this research were discussed.

Tobin & Begley (2004) maintain that confirmability will be achieved if the researcher's findings and conclusions can be traced back to the data that was collected. Confirmability focuses on the need to remove biases by ensuring that the findings of the research are based on what the research participants shared. In other words, the findings represent the views of the participants and not those of the researcher (Moon & Blackman, 2014). In this study, the interview transcripts of the research participants are being maintained to help ensure confirmability. The findings are an outcome of the recorded interviews (and subsequent transcripts), and the findings and their discussion are presented in separate chapters. The above is to allow the findings to be assessed without the researcher's input.

Transferability refers to the ability of the results to be used by others in their context and is also known as generalisability (Tobin & Begley, 2004). Transferability also examines the extent to which research findings can be transferred to other research or contexts. Qualitative research is focused on gaining a deeper understanding of a phenomenon (Creswell, 2013). It is, therefore, not concerned so much about the transferability of findings. Findings in qualitative research tend to be more focused and the number of participants are usually limited but are experienced in a particular field. In this study, detailed descriptions were used to allow the reader to clearly understand

the concepts and context within which the findings were made. However, the findings of this research are unlikely to be transferable due to the nature of the topic being researched and the research methodology adopted.

To ensure the reliability of the data collected and findings that emanate from such data, the interview guide was developed and reviewed with the supervisor. As Leung (2015) suggests, record keeping was done, and interpretations were based on the data collected. Where there were different views, these were presented to ensure transparency and true representation of participants' views on the subject.

The research was conducted in a way that ensured that the quality assurance elements required in qualitative research were observed.

Validity and reliability are two different methods of measuring the quality of research. Validity entails the accuracy and extent of a method in measuring what it intends to measure. Reliability refers to the consistency of the method being used, meaning the extent to which the same results can be achieved if the same methods are used under the same conditions (Middleton, 2023). If a measure is valid, it should be reliable whereas the opposite does not necessarily hold true because the measure may be reliable but not valid. Both validity and reliability are important in the design of a qualitative study.

A research methodology is valid if it is appropriate for the research questions identified, informs the sampling method, and allows the findings to be tested against those research questions (Leung, 2015). The method used to collect and analyse data must be valid to ensure that the results obtained can be reliably used to arrive at relevant conclusions.

3.7.3. Ethical considerations

This study complied with the research ethical requirements of the University of the Witwatersrand. The researcher applied for and received ethical clearance prior to data collection. The researcher ensured that participants were aware that they were participating in the study voluntarily. The interviews and the data gathered from them

were handled in accordance with the ethical requirements of the Protection of Personal Information Act (POPIA). All participants were provided the opportunity to either meet in person or through video conferencing. They chose video conferencing as it was convenient for them given their tight schedules. Participants provided their consent for the recording and transcribing of the interviews. The interviewer undertook to keep the participants' identities confidential. Thus where quotes are provided from the transcripts, the identity of the participant is protected. All participants were comfortable with the ethical considerations of the study.

3.8. Conclusion

The chapter outlined and discussed the research methodology adopted in the study using the Research Onion framework. The chapter further discussed how data was collected and analysed to answer the research questions.

In Chapter 4 which follows, the findings of the study are presented.

Chapter 4 – Findings

4.1. Introduction

This chapter presents the findings from the interviews conducted with the study participants. The demographics of the participants are presented and this is followed by the findings based on the research questions that guided the study.

4.2. Demographics of participants

Demographics concern the characteristics of the participants. These include particulars such as years of experience, level of education, and seniority or position in their workspace. Due to the nature of the study, participants were industry actors in the South African digital payments ecosystem and financial services sector. Some of them had been involved in the “Payments study tour” (PWC, 2019) which was conducted during March and April 2019 by payments industry bodies.

Twelve participants took part in the study. All the participants had extensive professional experience. Only three of the participants had less than 20 years of experience, while a further three had experience of more than 26 years. The remaining six participants had between 20 and 25 years of experience. Seven of the participants held MBA or MSC degrees and five had undergraduate and honours degrees. Finally, some participants had professional qualifications such as the CA(SA) designation.

To ensure the anonymity of the participants in this study, all the participants are referred to by their assigned codes (from P1 to P12).

The details of the demographics of the participants, including the sectors they were drawn from, are presented in Table 1 below.

Table 1 – Demographics of participants

Reference Code Name	Sector – Industry	Highest Qualification	Years of working experience
P1	SA Commercial Banks	Master of Business Administration (MBA)	25 Years
P2	SA Commercial Banks	Master of Business Administration (MBA)	21 Years
P3	Payments Association of South Africa	Master of Science (MSC)	21 Years
P4	Industry Body BankservAfrica	Master of Business Administration (MBA)	18 Years
P5	Industry Body BankservAfrica	Bachelor of Military Science	26 Years
P6	Industry Body Banking Association of South Africa	Master of Business Administration (MBA)	26 Years
P7	Financial Technology (Fintech)	Master of Science	20 Years

P8	Financial Technology (Fintech)	Bachelor of Science	24 Years
P9	Mobile Network Operator	Bachelor of Commerce	23 Years
P10	Card Payments Networks	Bachelor of Commerce (Honours)	16 Years
P11	Card Payments Networks	Master of Business Administration (MBA)	12 Years
P12	National Payments System Regulator	Chartered Accountant CA (SA)	26 Years

4.3. Presentation of findings

The findings of the study are presented according to the themes that emerged under each research question.

4.3.1. Research question 1: How do stakeholders perceive the composition of the digital payments ecosystem in South Africa?

This research question was examined primarily by investigating the actors in the digital payments ecosystem of SA. Subsequently, the challenges that make it difficult for digital payments to contribute to financial inclusion in SA were investigated.

Actors in the digital payments ecosystem in South Africa

The following actors were identified by the participants although not all of them are recognised as such in the current NPS Act of SA. A brief explanation of their role is also provided.

Commercial banks whose role in the digital payments ecosystem includes clearing and settlement of payment transactions and sponsoring those entities not registered for clearing and settlement.

SARB as the regulator because payments are governed by the NPS Act which is managed by the SARB.

National Treasury is a government department accountable for national economic policies in SA.

Financial Sector Conduct Authority (FSCA) which regulates the conduct of financial institutions.

Financial Intelligence Center whose role is to identify and combat proceeds from crime, money laundering and the finance of terrorism.

The Payments Association of South Africa (PASA) is the payment systems management industry body which regulates, organises, and manages the participation of members in the payment systems.

Payments Systems Operators (PSOs) facilitate electronic payments between payers and payees. In SA, the four PSOs are BankservAfrica, Mastercard, Visa and Strate Limited.

Third-party payment processors provide payment processing services to merchants and other businesses. Examples given by the participants were entities such as Eccentric and PayFast,

Mobile network operators (MNOs) who provide mobile money wallets, airtime, and vouchers. These are also used as payment mechanisms instead of cash.

Merchants are businesses that accept payments from individuals and businesses.

Fintechs facilitate payments and sometimes manage the payment gateways to allow payments to be made using debit/credit cards on e-commerce platforms.

Individuals who need to make or receive payments using digital payment methods.

Technology is also an actor since it is basically what is used to enable digital payments.

The participants also referred to the “Onion Ring Model for Payments”. The model incorporated the different layers of key participants in the payments system according to the NPS Act (PASA, 2023).

“So, we typically talk about an onion ring of participants” (P3).

“OK, so I think we are both familiar with the famous onion ring model of the national payment system, so I wouldn’t necessarily go through all of that. So, it starts with that. There you got your system operators etcetera, etcetera, etcetera going all the way through to the consumers, the clients, OK, that’s the start” (P7)

Figure 4 represents the Onion Ring Model of key players in the payments and settlements system as per the PASA and the SARB’s NPS (PASA, 2023)

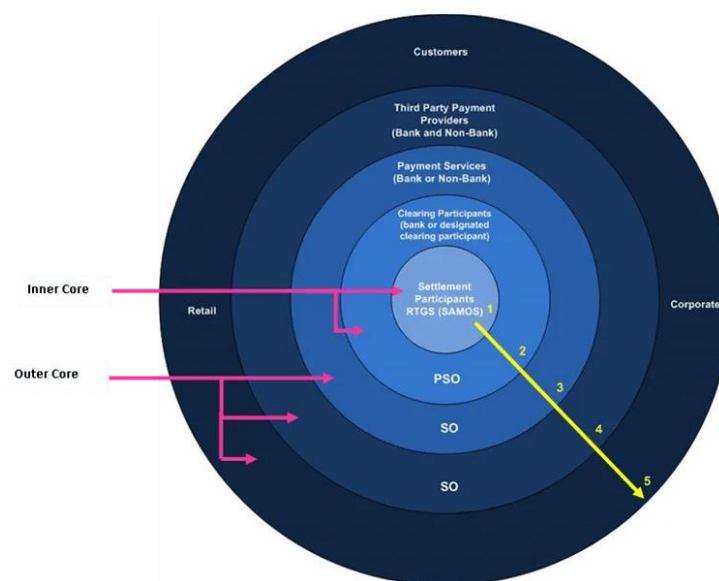


Figure 4 – Onion Ring Model for Payments
(PASA, 2023)

The *inner core* represents the main South African banks that have settlement accounts with the SARB and, as sponsoring banks, they also perform settlement functions on behalf of other designated participants.

The *clearing participants* are authorised by the PASA and are members of the association. In SA, and as mentioned, Strate Limited, BankServ Africa, Mastercard and Visa perform this function in the payments ecosystem.

The *outer core* of the model includes systems operators. These are non-banking institutions that provide payment instructions and not clearing instructions. Clearing instructions are processed by payment system operators. The outer core also includes

third-party payment providers who are generally enabled by systems operators and may hold payments in their bank account for a limited period. Lastly, are the business customers, payment providers and individual banking customers. Participants pointed to other actors that may not be in the Onion Ring Model but are part of the payments ecosystem, particularly digital payments.

“Within South Africa, obviously, payments are governed by the National Payments System Act, and the Act empowers the formation of the payment system management body, which is the PASA, and then at this stage banks are members of the PASA, and they clear and settle. So, they are essentially the clearing and settlement participants through approved payment system operators and in South Africa, you’ve got three.” (P1)

“It starts probably from a regulatory perspective with the framework of the national payment system which in the digital landscape probably speaks disbursement clearing and also the high-level stuff. You’ve got banks and non-banks, so the non-bank financial institutions but also non-financial institutions. So just the regular businesses as well as the consumers playing iPod somewhere in the digital payment landscape.” (P5)

“So, we typically talk about an onion ring of participants.” (P3)

Challenges that impede the contribution of digital payments towards financial inclusion

The themes listed below were identified as the challenges that make it difficult for digital payments to contribute to financial inclusion.

South African dual economies

The fact that SA has two economies, namely, formal and informal, was identified as one of the challenges. In the informal economies, payments are largely done in cash. The enabling conditions for digital payment adoption in the formal economy and informal economy are different and, therefore, solutions may differ. Lack of adequate infrastructure, internet connectivity, mobility and electricity supply may present challenges for the informal economy and adoption of digital payments is not possible under those conditions.

The informal economy has loyalty to cash which hinders the adoption of digital payments and the growth of small informal businesses (Deloitte, 2019)

“Markets in South Africa essentially have two, two core economies. You have your formal economy and you’ve got a much more, a big strong informal economy. In both those economies, but predominantly in the informal economy, the biggest form of payment is cash.”
(P1)

“So, until you can use your post bank card to pay at home to the informal seller on the side of the road, or you can use your mobile phone to pay digitally to the informal seller on the side of the road for your six tomatoes, digital payments remain a dream.” (P3)

The above quotes indicate the nature of the dual economies and the different attributes of those economies. The informal economy is mainly based in the rural part of the country which is under-developed and where there is no infrastructure to support financial inclusion through digital payments. The formal economy, on the other hand, can adopt digital payments.

Replicating the immediacy and low costs of cash

The perception that cash value does not change regardless of how many times it circulates in the economy makes cash payments more appealing compared to digital payments. Cash provides an immediate transfer of value whereas digital payments do not always match that expectation. In the digital payments arena, there is a requirement to have a store of value which is usually a bank account. Unfortunately, a bank account attracts costs for the bank account holder. The complexity that comes with digital payments may compel some to prefer the easier transfer of value that happens when using cash payments. So, the immediacy and low cost associated with cash payments must be replicated in the digital payments ecosystem if it is to replace cash payment benefits. Cash merchants receive their money instantly whereas, with digital payments, they sometimes need to wait for 24 to 48 hours to get their payments because they are sent to them in batches as opposed to real-time.

“And then the other biggest challenge is around replicating the immediacy and the low cost.”
(P1)

“The reality of the matter is that some people, they still perceive a cash payment as free. But you and I know that the cost of handling cash is high and all of that.” (P2)

“And the problem is the cost of cash is hidden because it’s a big cost to the formal sector.” (P3)

From a business perspective, cash in SA is expensive; therefore, converting cash to digital currency is also expensive, particularly for MNOs who would want to convert cash into digital currency, for example, in e-wallets. So, while individual customers may perceive cash as cheap, the cost of handling cash transactions is borne by the business organisations. Thus, the solution could be to look at ways to reduce the transaction costs related to converting cash into digital format.

“And if I look at mobile money ecosystems where they have done well or have proliferated in other countries, cash is actually cheap, not expensive to hold money.” (P9).

Acceptance of digital payments

Digital or card payment acceptance by merchants, shops and the overall network in the remote areas was flagged as a challenge.

“Let me paint a very practical scenario using you as an example. I can almost bet my pension on it that when you go home, you stop at the petrol station, and you withdraw cash. The business there doesn’t accept your card payment. Can you see that if you don’t solve acceptance they’ll continue with cash.” (P2).

“So, until you can use your post bank card to pay at home to the informal seller on the side of the road, or you can use your mobile phone to pay digitally to the informal seller on the side of the road for your six tomatoes, the fact that people have bank accounts in my view doesn’t crack the digital.” (P3)

In many of these areas, those who want to pay via digital payments are charged more to cover costs associated with digital payments, for example, point-of-sale devices and other costs. SA has a social grant system to assist senior citizens and the poor. Recipients of these grants use them to provide for their families, send their children to school and pay for their day-to-day activities. Most social grant recipients live in rural,

remote areas and townships where cash is still perceived as the easiest and cheapest way of payment. Because many live far from towns and cities, they opt to withdraw all their money in cash. According to Deloitte (2019), 90% of social grant recipients withdraw all their money from their bank accounts immediately when that money is available for use.

“The business is there, don’t accept your card payment or they will tell you if you use your card, you must spend over 50 Rands. Or if you use it exactly, they will say that they charge more.” (P2)

“So the money comes in the customer does two transactions which is a balance inquiry and withdrawal and that is completely rational behaviour because if you have to travel to draw your cash and you’re paying a taxi fare and your social grant is R1 850 and your taxi fares R100 well, it’s as rational as anything on earth to withdraw all your money in one go.” (P3)

Digital literacy in South Africa

Although literacy in SA is arguably high, digital literacy is low and payment applications, found on mobile devices do not have high usage in the country, particularly in rural areas where most people not using formal financial services are found. The costs associated with immediate digital payments are perceived to be high which prohibits their acceptance by many potential users. The benefits of using digital payments are not always clear to users. Moreover, the regulation favours banks and not non-banks, so non-banks may not be inclined to improve their acceptance of digital payments.

“In South Africa, we have a lot of literacy, very high literacy rate, you know 95% or something around there. But digital literacy is not that high.” P7)

“I mean the education thing I think is a huge thing and I think it’s something that should be incorporated into our school curriculum.” (P3)

A divergent view on digital literacy being a challenge for the adoption of digital payments emerged from one of the participants. Participant 6 believed that people in rural areas have the capacity to adopt digital solutions without education. WhatsApp and Facebook were used as examples of digital technologies that were adopted

without (digital) literacy campaigns. This was not a view shared by other participants but an interesting angle to the challenge, nonetheless.

“We got the barrier to financial inclusion is literacy. What a load of hogwash, right? I mean, I told you. I mean, is there a WhatsApp manual? Where’s a Facebook manual? Right? And so how is this thing adopted by everyone in the world at the rate it’s adopted? And yet we say stupid things like the poor people need to be educated on how to use a bank account. That’s nonsensical, right?” (P6)

Trust in the digital payments ecosystem

Trust in the digital payments ecosystem was also identified as a challenge in the adoption of digital payments. Deloitte (2019) noted that cash usage requires no financial or digital literacy and digital payments that require digital literacy will have to contend with a lack of trust.

“So, there are a bunch of other infrastructure elements and consumer education and consumer trust that underpin all of these.” (P3)

“Because access payments and the trust of digital payments is the security amount and it, you know, at least physical mode. If you can run away from the crook or you can keep it in your pocket or you can hide it, it’s pretty secure, right?” (P5)

Access to internet connectivity

The cost of data in SA is another challenge because one needs to have access to internet connectivity to be able to use digital payments. In many areas, there is no adequate internet/network connectivity.

Data costs were also identified in other countries such as India as something that needs attention as it hinders access to digital services (PWC, 2019)

“Of course, payment systems aren’t enough because you would need data that is cheap data.” (P3)

“In South Africa, the cost of data is too high, but it’s way too high in global terms. We’re paying too much.” (P7)

“Yeah, actually one challenge in the ecosystem that I did not mention is the role of the internet or MSN (collections of internet services and applications from Microsoft) or within that space because it’s becoming quite critical.” (P11)

Lack of Interoperability of solutions

Interoperability, which is the ability to move from one channel to another through the payment ecosystem, was identified as another challenge for digital payments to contribute to financial inclusion. The ability to use a mobile money wallet and a bank account is an example of a challenge in digital payments. This was also identified as a challenge at a regulatory framework level, as something requiring attention through regulation.

“How do we get these more integrated or at least interoperable so that they can facilitate the drive of these ecosystem announcements? I think regulation will be important because my experience showed me that very few of these programmes work.” (P5)

“Infrastructure leverage, I would call that, which brings interoperability from payments to value.” (P5)

“It shouldn’t matter that the owner of the shop has a bank account. I’ll be able to pay him because I’m using this proxy thing to introduce the interoperability, right? So that is one of the things for me that will drive well if it’s done right, that should drive the adoption of digital payments.” (P2)

“So, there’s space that we look after, which is the interoperability between all the players, no matter where you bank, and you’ll see that the National Treasury paper if you looked at it, recommends interoperability with mobile wallets as well.” (P3)

“I think one of the big problems is interoperability.” (P8)

“Financial inclusion? It is around the interoperability of the various stores of values, whether it be traditional banks and non-traditional banks, fintech, and that those things talk to each other. So, you want to think around the modernisation of our regulations to ensure that they have talk ability between actors.” (P4)

“We do not have a policy and framework that governs interoperability so that any product that comes into the space is able to interpret the web with, you know what, other systems or other services – a case in point is e-wallets.” (P12)

“How do you make it interoperable and also that it doesn’t limit you to one, you know if you put a cellphone number, and that’s all you can do, but how do you also get it to do other things.” (P11)

Countries such as Thailand and Singapore identified and promoted interoperability to drive the adoption of digital payments (PWC, 2019). This is also one of the goals of the SARB Vision 2025 (South Africa Reserve Bank, 2018)

Lack of privacy

Privacy of transactions, that is, the ability to receive payments without an audit trail is another consideration. Some transactions may border on non-compliance where businesses may prefer cash because they can avoid government taxes. Furthermore, there are businesses owned by people without the necessary documents that allow them to operate.

Privacy concerns, together with cybersecurity concerns, were raised as challenges in the “Payments Study Tour” report (PWC, 2019).

“The second problem in the digital system, which is becoming more and more important, is that the system is being exploited to extract data about people’s transactional behaviour, right?” (P6)

“Because the slightly bigger guys in the tax bracket and they want to pay in cash to avoid tax.” (P3)

“I don’t want people necessarily to understand what cash flow I’ve got.” (P5)

Table 2 – Summary of findings for research question 1

Research question 1	Participant	Who are the actors in the digital payments ecosystem in South Africa, both human and non-human?	What are the challenges that make it difficult for digital payments to contribute to financial inclusion in South Africa?
How do stakeholders perceive the composition of the digital payments ecosystem in South Africa?	P1	Commercial banks, payment service providers, systems operators, SARB, and the industry bodies.	Replicating the immediacy and low costs of cash. Cash is trusted in the informal economy. Interchange costs are a challenge to merchants.
	P2	Commercial banks, payment service providers, systems operators, SARB, and the industry bodies.	Acceptance of digital payments in remote areas is a challenge.
	P3	The Onion Ring Model of Payments is described in Figure 4. MNOs and fintechs should be included in the ecosystem.	Acceptance networks, trust and data costs are a challenge for digital payments, particularly in remote areas.
	P4	Actors as per the Onion Ring Model of Payments but there are other actors not included such as MNOs who provide wallets.	Perception of costs associated with digital payments, and the lack of acceptance in some areas.
	P5	Banks and non-banks, so the non-bank financial institutions but also non-financial institutions. Regular businesses as well as consumers.	Power/electricity. The ability to go online and offline securely is a challenge. Access payments and the trust of digital payments.

	P6	Commercial banks are the main actors. You also have the regulator, the government and other parties including individual customers.	Assuming that the physical world is the same as the digital world. The perception that digital can be duplicated.
	P7	The Onion Ring Model of Payments and other actors are not included. Fintechs in payments space, MNOs.	Digital literacy is a challenge and impacts the adoption of digital payments. High costs due to lack of competition driven by regulation.
	P8	Using our four-party model – issuing bank, acquiring bank, merchants, card scheme and cardholder. There are other key actors such as the regulator, fintechs, and telcos not formally included but key in payments.	The interoperability of digital payments is a challenge. The ability to move from a bank account to a wallet to cash is cumbersome and has a lot of friction.
	P9	Commercial banks, telcos who are also fintechs, other fintechs, the regulator, payments industry bodies such as the PASA and BankservAfrica, and card schemes such as Visa, and government.	The regulatory environment is biased towards banks and fintechs and other players are not given enough space to participate. Cash is expensive and turning it into digital currency is also expensive.
	P10	Four-party model where you have a card scheme, issuing bank, acquiring bank, merchant, and cardholder. The regulator, payments industry bodies, telcos for connectivity and other fintechs.	Infrastructure costs for merchants to accept digital payments. Cash is perceived to be low cost.

	P11	Commercial banks, card schemes, payments industry bodies such as the PASA and BankservAfrica, regulator, fintechs and telcos.	Trust in digital payments and lack of financial literacy. Access to the internet and data costs are other challenges.
	P12	The regulator, commercial banks, payments industry bodies, fintechs, telcos, payment service providers, systems operators.	Lack of framework for interoperability of digital products.

4.3.2. Research question 2: What are the experiences and perceptions of stakeholders in the digital payment ecosystem regarding the adoption of digital payments in South Africa?

This research question aimed to investigate the factors that influence the decisions of actors in the digital payments ecosystem as well as the factors that could make digital payments ecosystem actors interested in fostering financial inclusion.

Factors that could make digital payments ecosystem actors interested in fostering financial inclusion.

Cost of digital payments

The cost of digital payments is visible to both merchants and individual customers whereas the cost of cash payments, albeit high, is not always visible. One factor identified by the participants was for actors not to expect economic profit from facilitating payments but to use other services to generate profits. Deloitte (2019) in its report “Future of payments in South Africa ...” identified that infrastructure costs associated with the provision of digital payments need to be affordable for users to migrate from cash to digital. The SARB Vision 2025 identified the cost-effectiveness of digital payments as one of the industry goals (South African Reserve Bank, 2018).

In India, to drive financial inclusion through digital payments, the Reserve Bank of India covered the interchange fees that would have had to be paid by digital merchants and this enabled actors to keep the costs of payments affordable (PWC, 2019).

“Go and look at when we went to India and when we went to China, what was clear there was that those guys were not making money out of payments. They were making money out of insurance, lending, and a whole host of things.” (P2)

“Payshap, that program was rolled out and the costings and the customer proposition, it’s like it’s another bank service. It’s not as transformative as it can be in my opinion anyway. And I don’t think it’s going to have the traction with a bank leader approach because obviously there’s revenues and businesses that exist within banks that potentially a rapid payments program could disrupt.” (P9)

Commercial interest based on innovation

There is a need for collaboration of all actors in the digital payments ecosystem potentially led by the regulator with the purpose of growing the client base where more services can then be sold by the digital ecosystem players. It is also about the volume of transactions that would increase when the financially excluded are now included in the formal financial services which will benefit the same actors. Actors have different drivers, and most are concerned with commercial interests and the need to make a commercial profit; therefore, there is a need to create a commercial need for digital payments.

“Once you bring non-banks into the ecosystem because those people will come up with different business models, they will introduce more competition into the ecosystem. And that should work towards enabling people to be able to be digitally enabled in payments, right?” (P2)

“But the point is, until somebody finds a commercial basis on which to offer these things, they go nowhere.” (P3).

“I think entities including ourselves always act in our own best interests, so banks won’t have as an objective to improve financial inclusion if it’s not in their financial interest to do so.” (P9).

“So, the commercial benefit is the bottom line and shareholders always want to maximise profits.” (P12)

Regulatory mandate/instruction

This relates to the regulator mandating financial inclusion and encouraging it through regulations. Reviewing the regulatory environment and allowing organisations participating in the payments value chain while they are not banks (usually referred to as non-banks) to operate in a space that is traditionally reserved for banks will also increase competition, bring in new business models, and improve price competitiveness for the benefit of the customers.

“And a very, very good example is if you look at India and the UPI where they launched their version of Payshap or instant payments, the government mandated that it would happen. They set down the rules, the framework, and the governance.” (P8).

“So, enabling legislation and smart regulation to make sure that institutions don’t spend much can still meet compliance and regulations.” (P12)

While investigating factors that influence actors in the digital payments ecosystem, participants’ responses indicated that the same factors influence the actors’ interest in fostering financial inclusion through digital payments. Commercial interest influences actors’ decisions in digital payments and it is also one of the reasons why they are interested in financial inclusion. When the financially excluded start using formal financial services, the volume of transactions grows and the business revenue for actors in digital payments is increased. Financial inclusion is also a societal issue that the regulator is driving, and the regulatory vision influences other actors to maintain their commercial gain (South African Government, 2012).

Table 3 – Summary of findings for research question 2

Theme	Participant	What could make the actors in the digital payments ecosystem interested in fostering financial inclusion?	What factors influence the decisions of the actors in digital payments ecosystems?
What are the experiences and perceptions of stakeholders in the digital payment ecosystem regarding the adoption of digital payments in South Africa?	P1	Commercial interest. To get more people into the formal economy and increase volumes – the opportunity to get them to do more. E.g., buy airtime etc.	Commercial Interest. Economic benefits drive commercial banks, fintechs, telcos and merchants while socio-economic benefits drive the regulator and government.
	P2	Commercial interest. The potential to sell other services enabled through the digital payments ecosystem. E.g., lending and insurance	Regulatory mandate. Legislation around digital payments
	P3	Commercial interest. If it has commercial benefits for them as well – most actors are commercial entities.	Commercial interest. Business cases are driven by commercial elements.
	P4	Commercial interest. The fact is that when more people join formal financial services, volume increases and provides more opportunities for all.	Commercial and economic benefit. Social responsibility also influences the decisions of some of the actors.

	P5	Commercial interest. If you can bring volume, you can get access to lots of clicks and lots of transactions, meaning more clients.	Commercial benefit for different actors in the ecosystem.
	P6	Cost of digital payments. Change the assumption that those in remote areas are irrational and make stupid decisions. Pricing needs to be looked at.	Commercial business case. Every family is looking for what is best for them; therefore, what is good for the family will influence each actor.
	P7	Commercial interest. Make the circle bigger and create more business opportunities.	Economic benefits for themselves. The need to protect their revenue streams.
	P8	Regulatory mandate. Push from the government and the SARB as the regulator. In India, they mandated it and it happened.	Return on investments and economic benefit for those entities.
	P9	Commercial interest. Their own financial interests because they want to tap into that market which is excluded.	Commercial interest. Acquiring businesses are built on charging merchants for accepting digital payments which is lost when digital payments are cheap.
	P10	Cost of digital payments. Scale to increase volume and get	Commercial interest. Profit and market share.

		more business. The cost of handling cash for business is high.	
	P11	Commercial interest. Increase the size of the market and access that market for their commercial benefit.	Commercial interest. Profitability for their products and businesses as a capitalist society.
	P12	Regulatory mandate. Enable a regulatory framework that encourages interoperability.	Commercial benefit and shareholder return.

4.3.3. Research question 3: In what ways do stakeholders in the digital payment ecosystem believe digital payments can enhance financial inclusion in South Africa?

This question was addressed by examining what could be done to get actors to introduce solutions that would foster financial inclusion through digital payments, and mechanisms which could be devised for all the actors to embrace/join in the solutions. The findings are outlined below.

Create a new industry body that includes all actors in the digital payments ecosystem

One suggestion was to create an industry body that includes all the various participants to examine, together, all moving parts from regulation to execution as opposed to one body that is biased towards banks. Banks alone cannot solve the challenge of driving financial inclusion through digital payments adoption. In fact, there is no single party that can solve the problem on its own. This is in reference to opening up the payments ecosystem for other participants such as MNOs and also solving issues related to interoperability between mobile wallets, bank accounts and other stores of value.

“So, they are going to say that you know MTN, Vodacom Cell C, you must be direct participants in payments. Because they believe that those people will introduce the right level of competition and those people already operating in those environments, they’re used to selling airtime of 10 Rands” (P2).

Affordability for all actors

Affordability relates to making it cheaper or less costly for merchants to process digital payments. Merchants are sometimes encouraging customers to pay cash to avoid the costs associated with receiving payments digitally. However, if the costs to accept digital payments are acceptable to merchants, they will encourage customers to use digital payments and avoid the trouble of carrying cash which has its own risks.

“So, for me, it’s more about the ecosystem. So, why are you charging merchants to process digital payments? You know, how easy is it for customers to access digital payments and then come up with all sorts of fancy solutions.” (P9)

“And I think interchange can be used as a tool to optimally balance the two-sided market and really facilitate the provision of services to individuals who don’t necessarily need to pay for them. So in like the person to merchant space, the primary beneficiary of digital payments is the merchant. And so, getting interchange right and some of those constructs, right, I think become very, very important.” (P1)

An interchange fee is charged to merchants by merchant service providers for processing credit and debit card transactions (Fabregas & Bottorff, 2022).

“And if you look at other markets, I mean, I had a discussion with one of the banks in Brazil early this week, right in their world for these types of payments, there’s zero interchange.” (P2)

Interoperability of products and solutions

“It shouldn’t matter that the owner of the shop has a bank account. I’ll be able to pay him because I’m using this proxy thing to introduce the interoperability, right? So that is one of the things for me that will drive well if it’s done right, that should drive the adoption of digital payments.” (P2)

Payshap (part of the Rapid Payments Programme) was recently launched in March 2023 to provide an easy and fast way for payments to be made. Although it is currently limited to R3000, it is real-time and a good launching pad for person-to-person and person-to-business payments. It has thus started to introduce the key requirement of interoperability into the system.

Infrastructure that supports digital payments

The provision of infrastructure to enable digital payments will go a long way in driving adoption, particularly in remote or rural areas. The cost of this infrastructure must be affordable for actors to use.

“So, for me, it’s less about the solutions and more about the ecosystem that you build. We went on a field visit in KwaMashu (KZN). There’s no way I can pay digitally, there’s not even ATMs.” (P9)

Table 4 – Summary of findings for research question 3

Research question 3	Participant	What factors could be used to get actors to introduce solutions that would foster financial inclusion through digital payments?	What solutions could be introduced to foster financial inclusion through digital payments?	What mechanism could be devised for all the actors to embrace/join in the solution that has been introduced?
In what ways do stakeholders in the digital payment ecosystem	P1	Affordability. Interchange fees can be used as a tool to balance the two-sided market.	Solutions are already there, from settlement and clearing solutions to instant and immediate payments.	Creation of a broader payments industry body, where you bring all the different participants together.

	P2	New industry body. Open the payments landscape for competition. Bring in telcos and fintechs.	Affordability. Low-cost immediate payment solutions such as Payshap and relook at interchange fees.	Interoperability of products and solutions.
	P3	New industry body. Create a competitive environment for actors to compete and introduce new solutions.	Payshap is a game changer. Introduce solutions that are not only dependent on a bank account.	Interoperability of solutions – all actors should feel they can benefit from the solution.
	P4	New industry body. Volume will increase the size of the market thereby increasing opportunities.	Interoperability of stores of value solutions.	Interoperability will increase adoption.
	P5	Focus on what is important to people.	Interoperability of payments, interoperability of sectors and interoperability of market segments.	Affordability. Solve for cost and affordability and actors will embrace solutions.
	P6	New industry body. Create a conducive environment for everyone to	New Industry body. It is more about mobilising the actors rather than	New industry body. Leadership is provided by the

		participate. Increase volume and everyone gets more value.	which solutions are needed.	executive of the country.
	P7	Increase competition by providing access to fintechs and others to participate in digital payments.	Put pressure on MNOs to reduce data charges.	Create a conducive environment and step back. Improve the skills gap in digital payments.
	P8	This is already happening in SA. Actors are already interested in introducing solutions.	Payshap is an example of a solution that could be introduced.	Level the playing field and provide incentives for actors.
	P9	Provide direct access for fintechs and telcos to payments through inclusion in payments industry bodies. This will increase competition.	SA is ahead in terms of solutions and technology. What is needed is ecosystem thinking.	Review the regulatory framework and ensure the ecosystem is working and does not have silos in the solutions.
	P10	Competition will make parties interested in financial inclusion. Solve for loadshedding (electricity supply).	Low-cost acceptance. Interchange is expensive for small and medium enterprises.	Incentive plans such as the scheme are used for the benefit of all banks.

	P11	Introduce interoperability in the payment standards or regulation	The issue is less about solutions but pricing of those solutions. Payshap is a good example.	User digital literacy and education. Users must adopt the solution as well.
	P12	Balancing public policy objectives and commercial goals. Uplift people and increase the number of those accessing formal financial services.	Solutions are already there. The government must provide services such as e-KYC that should be consumed by all actors.	Digital or financial literacy campaign to improve trust in digital payments.

4.3.4. Research question 4: What are the perspectives of stakeholders in the digital payment ecosystem on the steps to be taken to achieve financial inclusion through digital payments in South Africa?

This question was addressed by investigating the role that the main actor in the ecosystem should assume, how the digital payments ecosystem actors will be mobilised to adopt solutions to foster financial inclusion, and if there is anything else that is required to use digital payments to foster financial inclusion in SA.

Identifying the main actor in the ecosystem who should mobilise the other actors

Some participants identified that the SARB, as the regulator, should assume the role of the main actor and mobilise all actors in the digital payments ecosystem to adopt policies and solutions to foster financial inclusion. Other participants identified either the National Treasury or the Presidency of the country, as the head of government executive authority, to assume the role of the main actor. If the Presidency or National Treasury assumes the role of the main actor, they will still use the SARB to lead the new industry body as the payments regulator. The SARB, therefore, is the identified

entity to represent government leadership of the network. Participants also saw the establishment of a new payments industry body that included different role players who are currently excluded, as a step in the right direction. Two of the participants pointed to Brazil and India, countries where the regulator took an active role in encouraging solutions that drove the adoption of digital payments to the extent that they were interested in the client users' experiences of the digital channel used. The SARB should be entrusted to consider the regulation of all enabling conditions, including ensuring that charges are fair and affordable for all participants in the ecosystem.

"The South African Reserve Bank. And they are. They realise and they know that they are. It sits with them." (P9)

"So, I think the National Treasury. I think that there's a big opportunity at that level to set the agenda and make sure that it succeeds and I'm not talking about India where it's, you know, India has been very autocratic. I think that there's as I say an opportunity at that level to set policy and to bring the participants together to make sure that we're dealing with all the challenges and listening to each other." (P1)

"I think the government, and this has been documented in other markets. You know government plays a very important role in mobilising towards the vision. They don't regulate the vision." (P4)

How can the digital payments ecosystem actors be mobilised to adopt the solutions to foster financial inclusion?

Include other actors in the ecosystem

This relates to ecosystem thinking where the role of fintechs is embraced to drive partnership for the benefit of all actors. This can be achieved through the working of the new payments industry body that was proposed by the participants, led by the PASA. It is at this level that there should be a policy position around using digital payments as a driver for financial inclusion in SA. Affordable pricing for digital payment products to enable adoption should also be dealt with.

"Then we are going to drive digital payments as the means to financial inclusion. Set your vision objectives in that arena into the payments industry body where you need to have

strategic alignment into that space and then into places like the banking association can look to deal with these pieces. You've got to bring all the different regulatory bodies on point.” (P1)

Introduce interoperability in the industry

Interoperability was identified as an imperative if digital payments are used to drive financial inclusion. There are products in the market, but they work in silos.

“So, I think that’s happening already anyway, so if you look at SnapScan, Zapper, you look at the some of the wallets the MNOs are introducing, you look at the remittance products, Payshap is now the latest one. But I mean you had Mukuru, you had Mobile Money, you had the proper money transfers. So those things are happening anyway. The problem is they all act individually in silos.” (P8)

What else is required for digital payments to foster financial inclusion in SA?

Infrastructure development

Infrastructure development and improvement needs to be prioritised and this includes the cost of data in SA and general access issues. Infrastructure development should be led by the government in partnership with MNOs and payment service providers.

“So, for us in the centre and regulators as well, in my view the best thing that you can do is create the conditions that make it easy for people to create compelling solutions.” (P3)

“Smartphone penetration and that’s why we are so aggressive in driving smartphone penetration because we know the range of products and services and the way we service customers, the way we service customers can be dramatically improved, you know.” (9)

Financial education and digital literacy

Participants identified that some small businesses are reluctant to adopt digital payments because it may create a tax burden whereas cash may not be visible to authorities. Digital literacy requires the participation of all players in the ecosystem with the payments industry body as the coordinator. According to Deloitte (2019), digital literacy is important because, in the absence of people knowing the benefits and being comfortable with digital payments, customers will simply continue with cash because as they put it, “cash required neither digital literacy nor access to the internet” (Deloitte, 2019, p 5).

“Appropriate tax mechanisms and ease of filing for parties at the bottom end of the market so that they could easily achieve compliance education around and why keeping your cash in digital form is safe and then keep it in cash form which I think actually intuitively most people probably understand and ease of use of solutions and low cost or near free solutions.” (P3)

“How do I get people to understand the value of digital payments and are there things like potentially tax incentives for businesses? I don’t think we’ve explored, so the whole consumer education side of things and broader business incentives are those are things I don’t think that we’ve ever explored properly.” (P1)

Table 5 – Summary of findings for research question 4

Research question	Participant	Who should assume the role of the main actor to mobilise the other actors in the ecosystem?	How will the digital payments ecosystem actors be mobilised to adopt the solutions to foster financial inclusion?	What else is required for digital payments to foster financial inclusion in SA?
What are the perspectives of stakeholders in the digital	P1	The National Treasury, I think that there’s a big opportunity at that level to set the agenda.	They can set up a Payments Council that would look at the policy and strategically align the actors.	Consumer education around digital payments is important to create trust and adoption.

	P2	The regulator – the South African Reserve Bank	Through regulation that allows other actors to play in the digital payments ecosystem.	Encourage partnership s– no single actor can solve the problem.
	P3	The National Treasury and the South African Reserve Bank.	Making solutions interoperable will benefit all players.	Affordable data costs, financial education around tax compliance.
	P4	The government should assume the role of the main actor.	Create a common vision and reimagine the regulatory framework.	Mobilising each other as ecosystem players.
	P5	The regulator and the national networks, BankservAfrica as an example.	Influence the actors. Also, influence the education sector to drive digital literacy.	Trust in digital payments in the population will improve adoption.
	P6	The president of the country. The executive arm of the government.	Put a plan together and monitor its execution at the leadership level.	Payments are not the end state. It should be a non-event.
	P7	The government should assume the main actor's role.	Create more of a level playing field for all actors. E.g., create a	Demonetisation as was done in India.

			BankServ that is not owned by the banks.	
	P8	The government by putting an officially mandated body that brings all actors together.	Through regulation and incentivisation for the actors	Interoperable wallet. Target the informal sector, starting with the taxi industry.
	P9	The South African Reserve Bank should assume the main actor role.	No need for mobilisation. MNOs will participate in the ecosystem as it is in their interest to do so, as long as the regulatory framework is conducive.	Increase smartphone penetration and internet access.
	P10	The South African Reserve Bank is the regulator of this industry. They can work with the PASA and BankservAfrica.	Use regular meetings they have with industry players to mobilise acceptance.	User awareness to build trust in digital payments. Electricity issues must be addressed.
	P11	The South African Reserve Bank is the regulator	A regulatory environment that enables the ecosystem's way of doing things.	Access to digital services including connectivity. Price is also a factor that impacts access.

	P12	The South African Reserve Bank as the regulator must assume the role of the main actor.	Using the policy instruments at their disposal to motivate all actors in the ecosystem.	Cybersecurity in the digital world and trust in the digital system.
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4.4. Conclusion

The findings of this study reflected the participants' experiences in the payments industry in SA. These findings were grouped into themes and these themes were mapped to the research questions.

The following chapter (Chapter 5) discusses these findings in the light of the ANT, the theoretical framework underpinning the study.

Chapter 5 – Discussion of the findings based on the Actor-Network Theory

5.1. Introduction

This chapter discusses the research findings (presented in Chapter 4) based on the Actor-Network Theory (ANT) model and its translation moments. Latour (1996) explains the ANT as a model enables a close examination of the actors in an ecosystem and their interactions therein. The ANT translation moments comprise problematisation, interessement, enrolment and mobilisation.

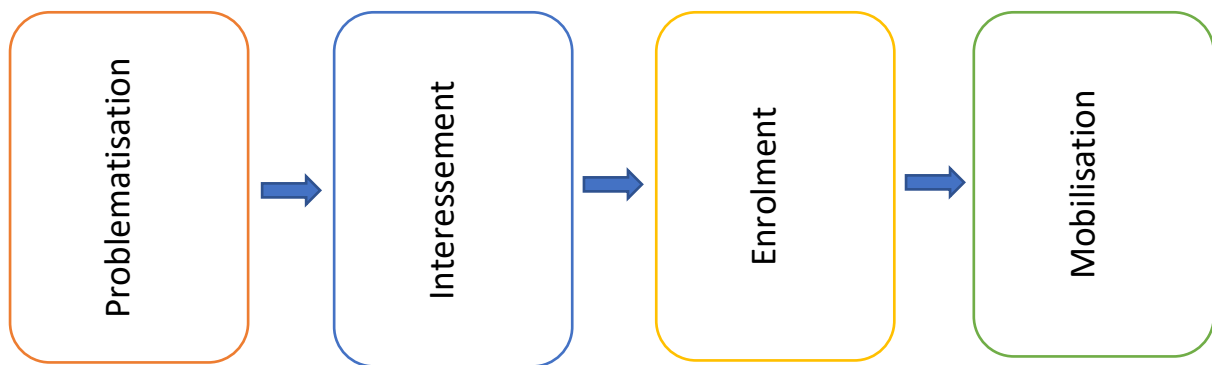


Figure 5 – ANT translation moments

Source: Adapted from Sela et al. (2020)

5.2. Discussion

As noted, this discussion is based on the four translation moments of the ANT

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5.2.1. Problematisation

According to Latour (1996), problematisation represents the first stage in the translation moments where a problem of the ANT is being defined. This is the stage where the actors in the network and their contribution to the problem are identified. It is at this stage of the translation moments where the actors establish a point where all interests are aligned, which is also referred to as the obligatory passage point (OPP).

Mishra (2019) indicates that although a high number of South Africans have bank accounts, the use of cash continues to grow. Approximately 80% of the population, including SASSA recipients, have access to a bank account (Mishra, 2019). This

statistic is indeed corroborated by the findings in Chapter 4, where one of the participants stated that some South Africans are using the bank account as a post box where money gets withdrawn the same day it was deposited.

In SA, there is a lack of information and education concerning mobile money, which is one of the mechanisms used to improve financial inclusion in other parts of the continent (Van Niekerk & Phaladi, 2021).

This study established that there are real and perceived challenges which result ***in a lack of or slow adoption of digital payments which delays their contribution to financial inclusion in SA***. Although some challenges are perceived and not real, they still hinder adoption. Cash is perceived to be cheap and perhaps it is cheap on the customer side; however, it is expensive on the business side. Customers in remote areas will prefer to use cash because it is free from charges which is not the case when one has a bank account, for example. Therefore, while cash is trusted by the customer, it does not create a financial profile for him or her, which then makes it difficult for them to access other formal financial services such as lending products.

There is the real challenge of interchange fees charged to merchants which does not make financial sense for merchants in remote areas where purchases are generally of small amounts. Businesses would prefer cash to avoid interchange fees. In some instances, they would want to charge more for products in order to cover interchange costs from customers which, in turn, discourages customers from using digital means to pay. There are also instances where small township businesses are avoiding tax compliance and thus prefer cash instead of digital payments. There is also the issue of immediacy of payments where merchants will only receive their payments 24 to 48 hours after they have made a sale. This does not always help with cash flow. Products such as Payshap, which allows for immediate payment to a merchant using a bank account or proxy, help solve the immediacy problem. Adoption of such solutions would help small merchants solve the late settlement and cost of handling cash. There is also a need to use electronic wallets to pay for goods and services as opposed to using wallets as “mailboxes” to transport cash and withdraw it in order to make payments.

Access to digital payments in rural areas is another challenge that requires attention as merchants do not have devices to accept digital payments network connectivity coverage is not good, costs of data are high, and when there is power loadshedding, access to digital payments is not possible. There is also no offline mode for many endpoints that accept digital payments and people could, therefore, be stranded and trust in the ability to make payments digitally, eroded. It only takes a few disappointing experiences for people to revert to using cash to make payments.

Interoperability is one of the challenges that the ecosystem actors need to address. The lack of interoperability in products and solutions results in great products not being user-friendly, that is, only usable in one context and useless in another. A digital wallet should be interoperable with a bank account in order to enjoy the benefits of the digital payments ecosystem. The ability to pay with airtime or vouchers should be made possible in the digital payments world as long as there is an exchange of value between parties. This lack of interoperability is a direct manifestation of inefficient digital payments ecosystem thinking and can be addressed through the collaboration of actors putting the interests of the network ahead of theirs.

There is a good understanding of who the actors in the digital payments ecosystem are and the controlling actor is the SARB through the NPS Act. The challenge is that not all of them ecosystem actors are recognised by the Act and, therefore, the payments industry body (PASA) does not recognise them as direct members. Banks, particularly the top five banks, are still seen as the major stakeholders in digital payments. This creates a concentration of decisions being made within the banks and, due to the current ecosystem structure, innovation emanating from other actors requires the banks' endorsement or support. Interests of these actors need to be assessed and aligned to achieve ecosystem aspirations, one of which is financial inclusion in SA.

Ahmad et al. (2021) established that China used fintech companies to offer more digital payment services and them doing so improved access to formal financial services. The findings also confirm that SA has a rich coverage of fintech companies. Fintechs are playing a critical role in digital payments and bringing innovations; however, they are still not participating in the discussions around digital payments held

by the country's payments industry body (PASA). Fintechs have an interest in growing their market share and increasing revenue through new business models and increased transaction volumes.

MNOs have introduced payment wallets, a critical product in the digital payments space, yet they still require a bank to sponsor their participation in the digital payments ecosystem. They intend to use their digital presence and large customer base to increase the financial services they offer and increase profitability.

Commercial banks are currently working in partnership with fintechs to provide some solutions to clients. They intend to serve the market without losing market share. Bringing the financially excluded into the formal financial services sphere provides opportunities for more services, such as lending products, to be offered to those who were excluded.

The study findings show that actors have an interest in including more people in formal financial services as this will increase transaction volume, which in turn increases the size of the market for commercial gains. Actors will thus be able to enjoy commercial gains from increased markets. This represents an OPP for actors in the network, that is, the digital payments ecosystem. This was also highlighted by the participants as they emphasised that the economic value and profit-driven benefits of fostering financial inclusion through digital payments must be conveyed throughout the digital payment ecosystem with adequate backing from regulatory bodies.

5.2.2. Interessement

Latour (1996) defines the interessement translation moment as the one where actors' interests and actions to get them interested in resolving the problem that the network has identified are examined. At the problematisation stage, it was identified that actors' commercial interests will influence their decisions. The regulator is interested in achieving the policy aspiration of financial inclusion and has delegated some tasks to the industry body, the PASA, which has the same interest. Some interests of the actors may present a challenge to others in the network. MNOs, for example, may be driven by the desire to capture customers who are currently banking with commercial banks

by offering them better interoperable solutions. Commercial banks may also be sceptical about sharing the MNOs' intentions given that they have a large customer base. The high penetration of smartphones and the adoption of mobile phones has resulted in the rise of digital financial services and providing access to the unbanked population in China (PWC, 2019). While the solutions will be good for the customer and financial inclusion, the competition that will ensue may not, in the beginning, be appreciated by the actors and, therefore, there is a need for the government, through the SARB as the main actor, to incentivise the actors who may regard the benefits of the network being unaligned with their commercial interests. Interchange provides income for commercial banks when digital payments are used. If commercial banks are to lose some of those fees, the SARB may want to subsidise those transactions to get the commercial banks to support the interests of the network. The SARB has a major task of not only coordinating the work of the actors but also promoting the interest of the network while benefiting the participating actors.

5.2.3. Enrolment

In this moment of translation, actors are being negotiated with and alliances in the network are being formed. Also, at this stage, some of the issues raised by actors are addressed.

Technology in SA is at an advanced level and fintechs continue to innovate through technology in digital payments. Including fintechs in the digital payments ecosystem and the regulatory framework would create an ecosystem that fosters financial inclusion. The current cost structure of the big commercial banks' operations hinders them from providing affordable solutions to the financially excluded and those in remote areas. Partnerships with fintechs and MNOs have the potential to serve those who cannot be served by big commercial banks. The literature concerning M-Pesa's success in Kenya shows that the ecosystem cannot be complete when commercial banks sit around the "proverbial" table excluding those who are innovating around wallets, airtime, and vouchers – developments that are becoming increasingly prevalent in the payments industry (Oluwole, 2022). Banks must be encouraged to accept MNOs as members of the new body.

5.2.4. Mobilisation

In this translation moment, actors are being mobilised to join the network and put the network's interest at the centre of their actions. A network of actors that supports the proposed solution(s) is created from all the actors who have been accepted as part of the enrolment translation moment (Sela, Gonzalez, & Christopoulos, 2020). The SARB should assume the role of the main actor and should mobilise other actors through legislative mechanisms and industry persuasion.

As per the findings, the current industry body, the PASA, needs to be re-organised into a new payments industry body that will bring all actors or their representatives into the formal digital payments ecosystem. This new body must embrace and encourage new innovative solutions and competition which will drive all actors to participate in the ecosystem. The SARB has already mandated the PASA to facilitate the co-design of the new payments industry body (Payments Association of South Africa, 2022). This process should also include the updating of the NPS Act to recognise fintechs and MNOs as actors or players in the digital payments ecosystem. A new payments industry body that includes fintechs and MNOs will be a good start to creating an ecosystem that will contribute to financial inclusion. At this stage an OPP has been established in that the interests of the actors in the network are aligned – a new payments industry body has been raised in the findings by the study participants particularly those coming from MNOs and fintechs participating in the digital payments space.

As part of the mobilisation moment, BankservAfrica's role must also be reviewed. BankservAfrica as a clearing house is an important actor in the ecosystem but its ownership structure makes it biased towards its owners, that is, the banks. Solutions that are coordinated through BankservAfrica, such as Payshap (a rapid payments programme) are seen to be sympathetic to the banks' business models and do not bring the required transformation in the real-time digital payments area. There is a need to review BankservAfrica's ownership structure and part or total ownership by government could be considered. Its role in the new payments industry body must be such that it does not give banks more power than other actors in the network.

What follows is the proposed framework for financial inclusion through digital payments. Figure 6 below provides a framework for depicting the process of financial inclusion through digital payments using the ANT translation moments as a basis.

5.7. Proposed framework for financial inclusion through digital payments

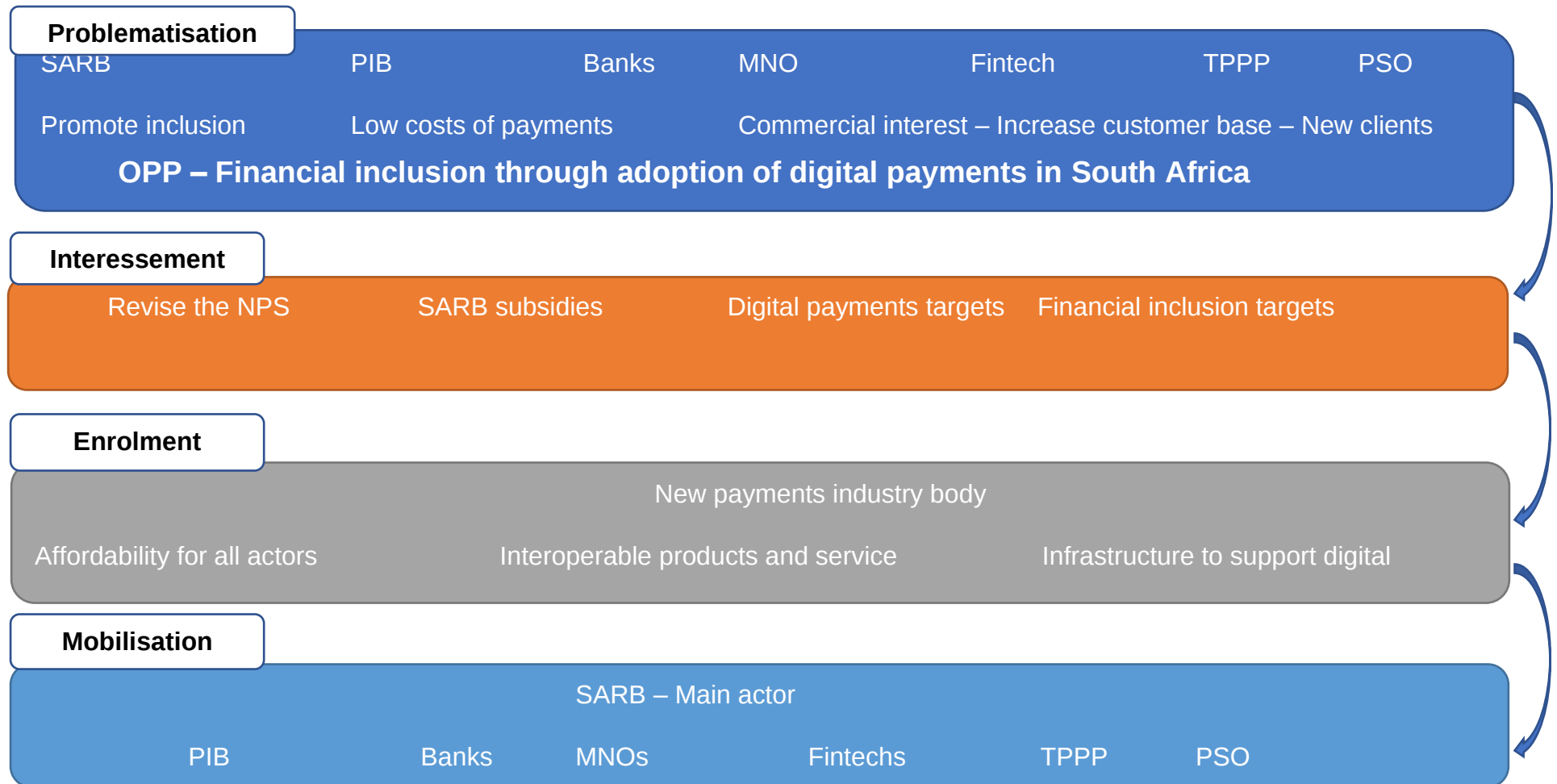


Figure 6 – The process of financial inclusion through digital payments – ANT translation moments

The first step in the ANT translation moments is problematisation. In this adapted model from Sela et al. (2020), the different actors in the digital payments network in SA have been mapped in terms of their identity and their interests. The SARB as the custodian of monetary policy is interested in financial inclusion amongst other interests. The payments industry body is interested in low and affordable digital payments to support financial inclusion aspirations. The payment service providers have financial inclusion as their target, which represents their interest. Commercial banks, MNOs, fintechs and other commercial entities involved in payments have shareholders' returns and commercial interest. They want to increase the market and offer solutions to the financially excluded once they are included. Financial inclusion is the OPP for all actors in the digital payments ecosystem.

Once all the actors are aligned with the OPP, the next step would be to ensure that every actor is interested in financial inclusion through digital payments. There are financial inclusion targets already as per the NDP (South African Government, 2012). Digital payments adoption is the next logical step that the payments industry body should promote. The NPS Act must also be revised to include non-members in the digital payments ecosystem. The SARB should consider the provision of subsidies or incentives to actors such as banks who may lose revenue in the short term given that they would forfeit interchange fees to make digital payments affordable. This will strengthen the relationship of the actors in the network, which is the second stage of the translation moments, that is, *interessement*.

The revision of the NPS and the SARB subsidies would open the doors for actors to align their interests with those of the bigger network. A new payments industry body to replace the PASA should be established. The new body should start consolidating, through negotiation, the different interests by ensuring digital payments are affordable for all actors, products and solutions are interoperable, and the infrastructure is conducive for digital payment access. At this stage, the rules of engagement within the new body would be understood by all involved as part of the third stage of the translation moments, namely, *enrolment*.

The final stage would comprise the mobilisation led by the SARB as the main actor. At this stage, the regulation supports the interest of the network, and all actors'

interests are represented. Figure 7 below summarises what would be achieved as per the stage of the ANT translation moments in fostering financial inclusion through digital payments in SA.

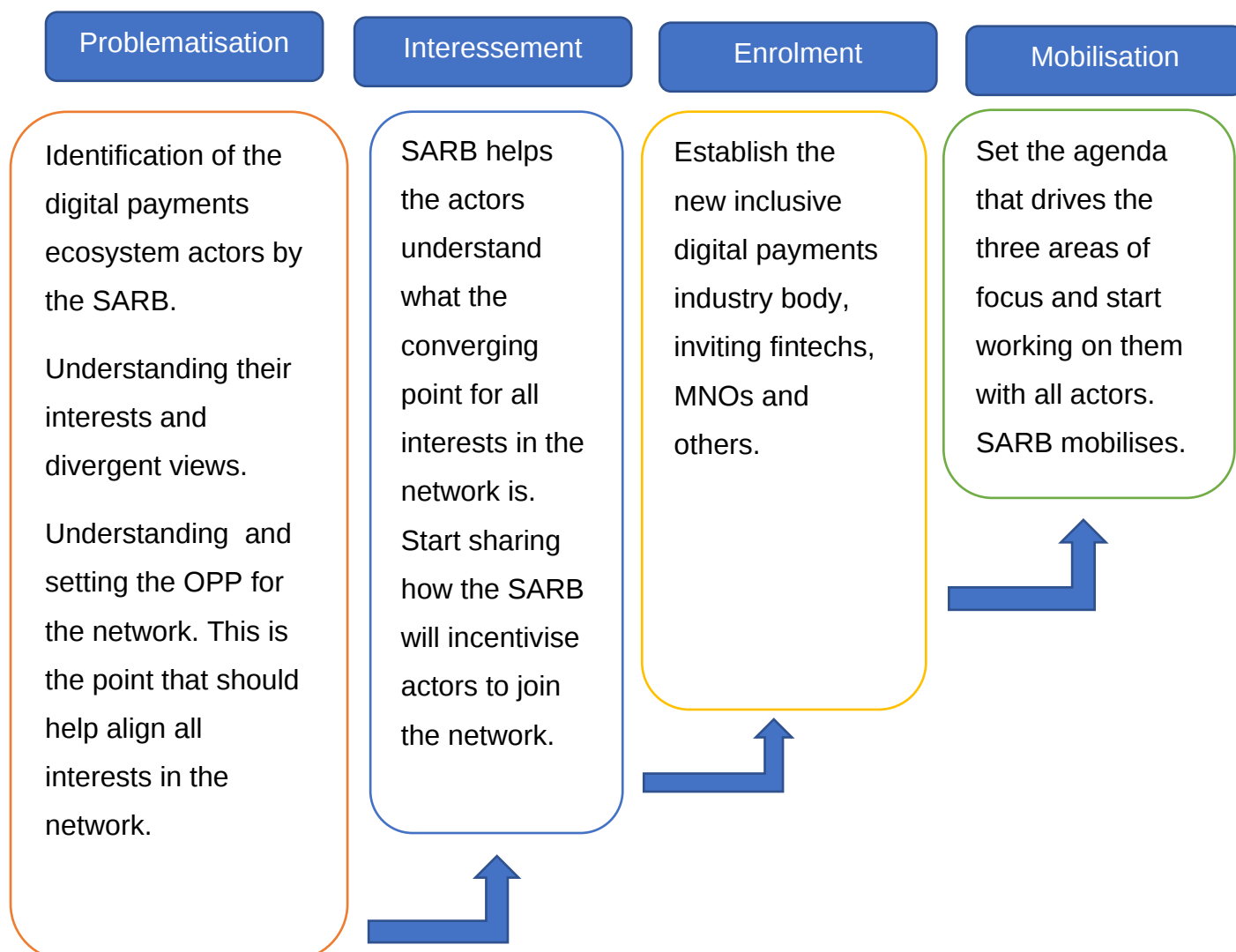


Figure 7 – Summary of the framework stages based on the ANT

5.8. Conclusion

This chapter discussed the findings through the lens of the ANT. It also presented a framework that could be used to drive financial inclusion through a digital payments ecosystem.

The next chapter (Chapter 6) concludes the study.

Chapter 6 – Conclusion and recommendations

6.1. Introduction

In this final chapter, the study is concluded by summarising each of the chapters in the research report. The study's limitations are then outlined, followed by the contributions of the study. Recommendations are provided and the chapter ends with some concluding remarks.

6.2. Summary of the study

The purpose of this qualitative study was to explore how digital payments can foster financial inclusion in SA. The study aimed to identify the actors (people, processes, and technology) in SA's digital payments ecosystem, evaluate the contribution of digital payments towards achieving financial inclusion in SA, identify the enablers of financial inclusion in SA's digital payments ecosystem, and devise a digital payments framework that could be used to achieve financial inclusion in the South African context.

Chapter 1 provided the purpose, background of the study, the research problem and the research questions. The rationale of the study, the limitations of the study, the definition of key terms, the assumptions, and the outline of the study report were also provided.

Chapter 2 presented the review of the literature supporting the study together with the theoretical framework that underpinned the study. The literature review focused on the impact of digital payments on financial inclusion, factors that would lead to digital payments improving financial inclusion, and a possible framework that could be used in the adoption of digital payments to foster financial inclusion in SA. The ANT and its translation moments, namely problematisation, interessement, enrolment, and mobilisation provided the theoretical framework for the study.

Chapter 3 presented the research methodology that was and how the research questions were answered by the study. The target population comprised professionals from the banking industry, payments industry, the regulator, MNOs and fintechs.

Following non-random sampling, a total of 12 participants took part in the study and interviews were conducted via MS Teams video calls, which were recorded and transcribed for further analysis.

Chapter 4 presented the study's findings based on the research questions.

Chapter 5 provided a discussion of the findings in light of the ANT, the theoretical framework underpinning the study.

Chapter 6 concludes the study. It summarises the content of each chapter in the report, outlines the limitations and shares the contributions of the study. Recommendations are provided, and the chapter (and study) ends with some concluding remarks.

6.3. Limitations of the study

The study focused on digital payments fostering financial inclusion in SA. It outlined the actors in the digital payments ecosystem, the challenges, potential solutions, and the framework that could be used to foster financial inclusion through digital payments. The study was limited both in scope and time and the researcher acknowledges that it did not cover all aspects and every challenge within SA's digital payments ecosystem.

The sample, while reflecting a range of actors in the digital payments ecosystem, was limited in size. The researcher acknowledges that it could have been larger to accommodate more views and more key actors in the ecosystem. The views of the actors were taken as representing the views of the ecosystem. Customers were not interviewed for the study, and their voice was represented by the regulator and industry body representative.

While literature shows a link between financial inclusion and economic development in India (Dipasha, 2016), and this is further corroborated at an international level (Van, Vo, Nguyen, & Vo, 2021), the study did not research the link between financial inclusion and economic development in the context of SA. It accepted that the situation

in SA would be similar to India and other developing countries with regard to financial inclusion and economic development.

6.4. Contributions of the study

This study should benefit both the regulator in the payments industry and the ecosystem actors in their quest to improve the adoption of digital payments in SA, particularly in rural and informal economies. The SARB has shared its Vision 2025; however, the adoption of digital payments needs to be accelerated if that vision is to be achieved. This study should thus be beneficial to the SARB, in its mission to improve financial inclusion in the country.

Interoperability was identified as a critical enabler of digital payments adoption. Actors in the digital payments ecosystem must promote the interoperability of products and solutions. For the actors to promote interoperability, all actors must be recognised by the NPS and be represented as members of the payments industry body in order to participate in digital payment solution strategies.

6.5. Recommendations

Actors in the digital payments ecosystem have different but aligned interests in the adoption of digital payments to foster financial inclusion. Financial inclusion is good for all actors, whether actors are driven by public good or whether they are driven by commercial interest. When the framework for financial inclusion through digital payments includes all digital payments ecosystem players, they will all achieve their aspirations.

It is recommended that the well-known “Onion Ring Model of Payments” be updated and the NPS Act be reviewed to include MNOs, fintech companies and, in some instances, retailers. This will accelerate the adoption of digital payments which, in turn, will foster financial inclusion. The following tenets of the SARB’s Vision 2025 will also be achievable goals within the desired timeframe: pursuit of interoperability, collaboration and cooperation, representative and inclusive industry structures, and collective pursuit of broader NPS goals (PASA, 2023).

The challenge of informal sector loyalty to cash must be addressed through education and digital literacy campaigns to get cash users to appreciate the benefits of digital payments. This task must be given to the new payments industry body that is to be created.

Partnerships with MNOs to review data costs and network coverage are needed. It is thus important that they are recognised in the formal ecosystem body.

The participation in the national payment system needs to be revised and this could be achieved through the new payments industry body in SA. The new body will need to take immediate cognisance of seven challenges vis a vis digital payments, namely, the South African dual economy, replicating the immediacy and low costs of cash, the low acceptance of digital payments, low digital literacy levels, the lack of access to internet connectivity, the lack of interoperability of solutions, and the perceptions of the lack of privacy.

Figure 8 below reflects the composition of the new payments industry body as proposed by the researcher.

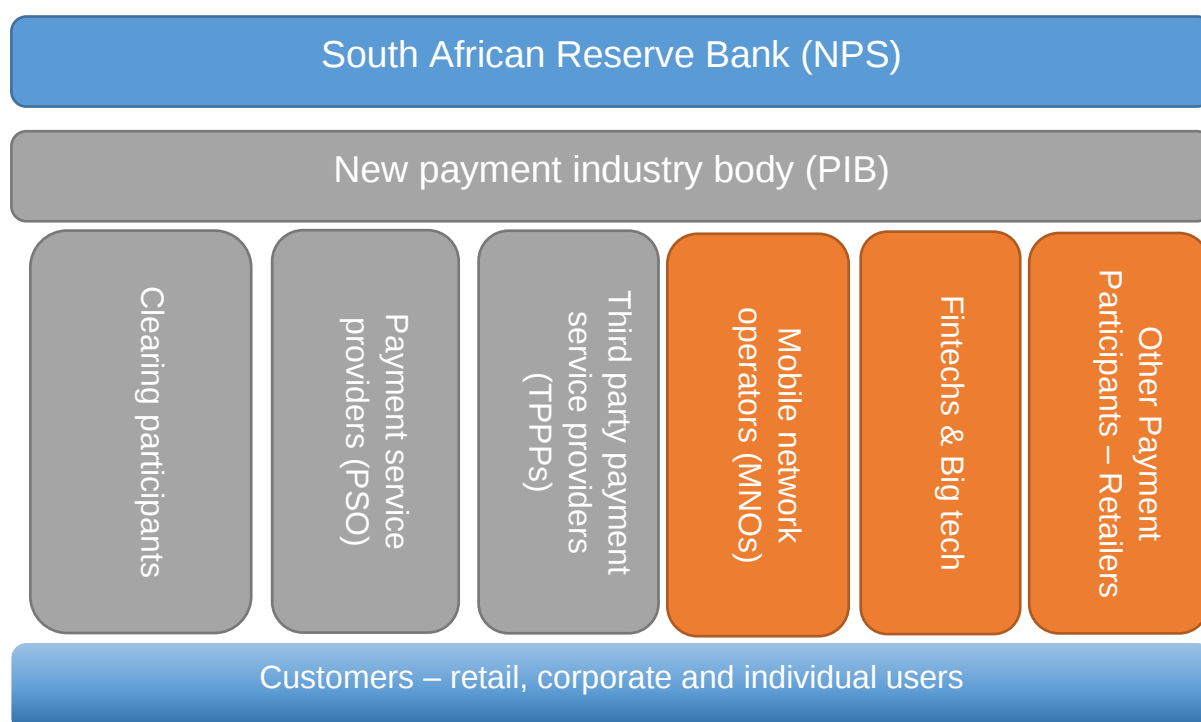


Figure 8 – Composition of new payment industry body to drive digital payments adoption in SA

The above body should be accountable for, amongst other things, infrastructure oversight, and liaison with relevant government departments to solve the deficiencies in infrastructure provision, thereby enabling the adoption of digital payments.

6.6. Suggestion for further research

An important factor that emerged in the study is the need for people to be digitally literate should they wish to participate in the digital payment ecosystem. Thus how digital literacy can be improved is an area for further research. Answering this question will go some way toward ensuring that one of the imperatives in enabling financial inclusion through digital payments is realised.

6.7. Concluding remarks

The study established that the digital payment ecosystem has evolved over time and now includes fintech companies and MNOs as actors both of which play a prominent role in the ecosystem. Fintechs and MNOs should be full participants in the national payment as they play an important role in the solution of the challenges identified in the ecosystem. The new payment industry body should be as inclusive as possible. In assessing the experiences and perceptions of stakeholders in the digital payment ecosystem regarding the adoption of digital payments in SA, the study established that while different actors may have different interests (ranging from public good to commercial), these interests converge and can be achieved in the ecosystem to enable financial inclusion in the country. In applying the ANT and its translation moments, the interests of the different actors in the digital payments network can be aligned. The point of convergence or the OPP revolves around actors' commercial interests and the regulator's public good policy aspirations.

The inclusion of key actors currently excluded from the NPS will accelerate financial inclusion goal achievement. This study shows that the digital payments ecosystem has shifted from banks being core actors to banks participating in the ecosystem with other players playing key roles in the network. The MNOs and fintechs have become critical actors and cannot be ignored. Stakeholders in the digital payments ecosystem believe digital payments can enhance financial inclusion in SA. Therefore, fostering

financial inclusion through digital payments requires concerted efforts with the SARB playing a critical role in getting the various actors in the digital payment ecosystem interested in fostering digital inclusion.

A new payments industry body led by the SARB and incorporating fintech companies and MNOs in the national payments system should be established with a mandate to solve the challenges of access to formal financial services in the country. It will present a framework where all key actors are mobilised to solve the challenges concerning financial inclusion in SA. The perspectives of all stakeholders in the digital payment ecosystem will be represented and the steps needed to achieve financial inclusion through digital payments, specified.

Digital payments can indeed be an enabler of financial inclusion in SA and the challenges identified can be addressed as per the recommendations made in this study. All actors in the digital payments ecosystem have aligned interests that, if properly mobilised, can work together to foster financial inclusion in the country.

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Appendix A - Research instrument

INTERVIEW GUIDE QUESTIONS

RESEARCH TITLE: Financial inclusion through digital payments in South Africa

Date	
Time	
Interviewee	
Interviewer	

Introduction

Thank you for taking the time to participate in this study. We are working on a project about the potential impact digital payments have on financial inclusion in South Africa. To this end, we wish to collect data regarding experiences and knowledge related to digital payments and their potential impact on financial inclusion in South Africa.

Section 1- Digital payments and financial inclusion – Actors in the network

Q1.1 Who are the actors in the digital payments ecosystem in South Africa, both human and non-human?

Notes:

Q1.2 - What are the challenges that make it difficult for digital payments to contribute to financial inclusion in South Africa?

Notes:

Section 2- Digital payments ecosystem players/actors and their interests

Q2.1 – What could make the actors in the digital payments ecosystem interested in fostering financial inclusion?

Notes:

Q2.2 – What factors influence the decisions of the actors in digital payments ecosystems?

Notes:

Section 3 – Digital Payments Actor Network Challenges in SA

Q3.1 – What factors could be used to get actors to introduce solutions that would foster financial inclusion through digital payments?

Notes:

Q3.2 – What solutions could be introduced to foster financial inclusion through digital payments

Notes:

Q3.3 – What mechanism could be devised for all the actors to embrace/join in the solution that would have been introduced?

Notes:

Section 4 – Potential framework for financial inclusion using digital payments in SA

Q4.1 – Who should assume the role of the main actor to mobilise all the digital payments ecosystem actors to adopt the identified solution?

Notes:

Q4.2 – How will the digital payments ecosystem actors be mobilised to adopt the solution to foster financial inclusion?

Notes:

Q4.3 – What else do you believe is required to use digital payments to foster financial inclusion in SA?

Notes:

Appendix B - Alignment between ANT, research questions and interview questions

Actor-Network Theory Translation Moments	Research Questions	Interview Questions
Problematism	a) How do stakeholders perceive the composition of the digital payments ecosystem in South Africa?	- Who are the actors in the digital payments ecosystem in South Africa, both human and non-human? - What are the challenges that make it difficult for digital payments to contribute to financial inclusion in South Africa?
Interessement	b) What are the experiences and perceptions of stakeholders in the digital payment ecosystem regarding the adoption of digital payments in South Africa?	- What could make the actors in the digital payment's ecosystem interested in fostering financial inclusion? - What factors influence the decisions of the actors in digital payments ecosystems?
Enrolment	c) In what ways do stakeholders in the digital payment ecosystem believe digital payments can enhance financial inclusion in South Africa?	- What factors could be used to get actors to introduce solutions that would foster financial inclusion through digital payments? - What solutions could be introduced to foster financial inclusion through digital payments? - What mechanism could be devised for all the actors to embrace/join in the

		solution that would have been introduced?
Mobilisation	d) What are the perspectives of stakeholders in the digital payment ecosystem on the steps to be taken to achieve financial inclusion through digital payments in South Africa?	○ Who should assume the role of the main actor to mobilise all the digital payments ecosystem actors to adopt the identified solution? ○ How will the digital payments ecosystem actors be mobilised to adopt the solution to foster financial inclusion? ○ What else do you believe is required to use digital payments to foster financial inclusion in SA?

Appendix C - Invitation letter

Dear

My name is Aluwani Tshishonga, and I am a Masters student in Digital Business at the University of the Witwatersrand, Johannesburg. As part of my studies, I must undertake a research project, and I am investigating how digital payments can foster financial inclusion in South Africa under the supervision of Dr Patrick Ndayizigamiye.

As part of this project, I would like to invite you to take part in an interview. The interview will be done face-to-face and will take around 30 to 45 minutes. With your permission, I would also like to audio/video record the interview using a digital device. This recording will be stored in a password-protected device and only the researcher will have access to this recording.

There will be no personal costs to you and you will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report.

If you have any questions during or afterwards about this research, feel free to contact me at the details listed below. This study will be written up as a research report which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you. With your permission, the data collected from this research project may be used by other researchers in an anonymised format. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone at +27(0) 11 717 1408, email hreanon-medical@wits.ac.za

Yours sincerely, Aluwani Tshishonga (9611035m@students.wits.ac.za, 082 930 4477)

Appendix D - Consent form

Research Topic: Financial Inclusion through Digital Payments in South Africa

Name of researcher: Aluwani Tshishonga

I,, agree to participate in this research project. The research has been explained to me and I understand what my participation will involve.

I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous.	YES	NO
--	-----	----

I agree that the researcher may use anonymous quotes in his / her research report.	YES	NO
--	-----	----

I agree that the interview may be audio-recorded.	YES	NO
---	-----	----

I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO
--	-----	----

..... (signature)

..... (name of participant)

..... (date)

..... (signature)

..... (name of person seeking consent)

..... (date)

Appendix E - Ethics certificate

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg



Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB9611035M/236

This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	Financial inclusion through digital payments in South Africa
Investigator / Researcher	Mr Aluwani Tshishonga
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentiality.
Issue Date of Certificate	2023-02-27
Expiry date	Date of submission of the project / research report
Chairperson	Dr Pius Oba +27 11 717 3976 +27 82 733 6587 pius.oba@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

28/02/2023

Date: