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Abstract

Digital financial services (DFSs), being financial services accessed and delivered through digital channels, have grown rapidly in South Africa as well as globally. The adoption of the technology for DFSs has led to an increase in financial inclusion, enabling more individuals and businesses to have access to useful and affordable financial products and services, where payments, savings, credit, investment and insurance are included. Through the *Financial Sector Regulation Act* 9 of 2017 financial inclusion was statutorily enacted for the first time. The regulators are now empowered to insist that financial institutions take proactive steps to expand financial inclusion and can take the necessary steps to enforce these powers. One of the factors that have an influence on whether consumers will adopt DFSs is consumers' perspectives of DFSs. Lack of information and knowledge combined with the cost of data negatively influences the adoption of DFSs. The transfer of information to unbanked people in South Africa with regards to DFSs should be enhanced by the state as it strives to improve financial literacy. DFSs are susceptible to financial crimes like fraud, money laundering, terrorist financing, bribery, corruption and market abuse. The challenges that threaten the interests of customers should be addressed by stricter information verification methods when transacting with clients online. Technological detectors and digital identification should be used more effectively to verify customers and to alert authorities to suspicious transactions. Financial institutions might consider authenticating online transactions by thumb-print or a voice recognition system. This paper emphasises that because of the prospects of greater and deeper financial inclusion in South Africa, the use of DFSs has to be improved and developed and the challenges have to be constructively addressed to unleash the true potential thereof.

Keywords

Digital financial services; financial inclusion; *Financial Sector Regulation Act*; financial crimes.

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1 Introduction

Digital financial services (DFSs) have become a central issue in the new global economy as being one of the most rapidly growing areas of financial services. This growth has on the one hand created an opportunity for the financial inclusion of people not previously included, and on the other has also led to an increase in financial crimes with regard to these services. This paper examines the adoption of DFSs in South Africa and the effects of such adoption on financial inclusion, providing insight into factors that have an influence on crimes relating to DFSs.

In the South African Reserve Bank *National Payment System Framework and Strategy – Vision 2025* (SARB Vision 2025) the goal was set in 2018 to enhance the safety, efficiency and accessibility of the national payment system by supplementing technological developments so that digital payment options will be available to all South Africans.¹ One of the important priorities set out in the SARB Vision 2025, is financial inclusion in South Africa, especially in terms of digital inclusion.² The South African Reserve Bank (SARB) supports increased competition in the payments system value chain, including the emergence of financial technology firms (fintechs).³ Fintechs promote collaboration between themselves and traditional payment services providers.⁴

According to a 2019 report by Genesis Analytics, South Africa has a small, but fast-growing fintech industry.⁵ The report mentioned that fintechs can probably transform financial services by improving efficiency and reducing the operating costs thereof.⁶ This could benefit all South Africans, including

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¹ SARB *Vision 2025* 3.

² SARB *Vision 2025* 3, 4, 7.

³ SARB *Vision 2025* 12.

⁴ SARB *Vision 2025* 16.

⁵ Genesis Analytics *Fintech Scoping* 3. In this paper, the authors will refer to the *Fintech Scoping in South Africa* report by Genesis Analytics, specifically regarding figures on the rate of formal financial inclusion of the adult population as well as smartphone and internet penetration in South Africa. These were the most recent figures available on financial inclusion in South Africa. This is an independent publication for the Intergovernmental Fintech Working Group (consisting of the South African Reserve Bank (SARB), the Financial Intelligence Centre, the Financial Sector Conduct Authority, National Treasury, National Credit Regulator and the South African Revenue Service), the World Bank Group and the Swiss State Secretariat for Economic Affairs and as such is regarded as a credible source by the authors.

⁶ Genesis Analytics *Fintech Scoping* 3.

those that were previously excluded from financial services.⁷ The report confirmed that more than 200 fintechs operate in the South African financial market.⁸

Part 2 of this paper begins by laying out and explaining the key terms and concepts that are used in the literature with regard to DFSs. Part 3 will explore whether technology involved in DFSs and the powers assigned to the regulators by the *Financial Sector Regulation Act (FSR Act)* to implement proactive steps to enhance financial inclusion could lead to an increase in financial inclusion. Consumers' perspectives and use of DFSs as well as factors that could have an influence on the adoption of it will be analysed in part 4. In part 5 a primary concern of DFSs, their being susceptible to financial crimes, will be evaluated. The challenges that threaten DFSs with specific reference to the financial crimes that may impact upon them will be analysed. In conclusion the authors will provide a brief summary of the findings in the paper: the uptake of DFSs will have to be vigorously enhanced since they have the potential to raise the quality of financial inclusion in South Africa; and even though DFSs can conveniently be used by customers, the reality of financial crimes may have an influence on such use. Finally, recommendations will be made.

The changes experienced lately in the development of DFSs because of the fourth industrial revolution and the possibility of wider access to financial services through DFSs add to the significance of this contribution.

2 Explanation of key terms and concepts

Various words and concepts are used in the literature in regard to financial services accessed and delivered through digital channels. The overarching term for a comprehensive range of such financial services is DFSs, which include payments, credit, savings and insurance accessed and delivered through digital channels like the internet, mobile phones, automated teller machines (ATMs) and point of sale (POS) terminals.⁹

Mobile banking refers to a service provided by banks or other financial institutions that allows customers to use a mobile device like a smartphone or other cellular device to access banking services and execute financial transactions.¹⁰ Mobile banking is a subcategory of internet banking and a transportable extension of it, increasing flexibility for customers and improving the services of a bank.¹¹

⁷ Genesis Analytics *Fintech Scoping* 6.

⁸ Genesis Analytics *Fintech Scoping* 6.

⁹ Kambale *Digital Financial Services* 3.

¹⁰ Kambale *Digital Financial Services* 3.

¹¹ Chigada and Hirschfelder 2017 *SAJIM* 1.

Mobile money is a mobile phone-based service facilitating electronic transfers and other services using mobile networks.¹² According to Winn and De Koker "Mobile money refers to the use of a mobile phone handset to deposit, withdraw or transfer funds".¹³ Mobile money ensures that people who do not have bank accounts are able to deposit, withdraw and transfer money and pay bills using value stored on the subscriber identification module (SIM) cards in mobile phones.¹⁴ Mobile money service providers accept cash deposits from customers using SIM cards from the parent mobile network operator.¹⁵

Section 11 of the *Banks Act*¹⁶ provides that no person may conduct the "business of a bank" in South Africa unless such a person is a public company and registered as a bank. The "business of a bank" is defined in section 1 of the *Banks Act* as "the soliciting or advertising for or the acceptance of deposits from the general public as a regular feature of the business in question". The taking of deposits from the general public by a non-bank is a criminal offence, therefore according to the SARB *Position Paper on Electronic Money*, to reduce risk in the national payment system, only South African registered banks may issue electronic money, which is among other things internet banking, mobile banking and mobile payments.¹⁷ In terms of section 52 of the *Banks Act* non-banks may enter into arrangements with banks that may allow them to offer payment-related services in conjunction with the bank. Application for such arrangements would be required to be made by the bank concerned to the Registrar of Banks.¹⁸ It is thus clear that in South Africa all mobile money transactions and mobile money services are limited to those where a registered bank is involved.

Fintechs are defined in the Genesis Analytics report as

advanced technology firms that have the potential to transform the provision of financial services spurring the development of new business models, applications, and whose products and services are directly applicable in the delivery of financial services.¹⁹

Throughout this paper the term DFSs will include mobile financial services where a mobile phone is used to access financial services, for instance mobile money and mobile banking, and also that segment of fintechs that is utilised to gain access to financial services.

¹² Kambale *Digital Financial Services* 3.

¹³ Winn and De Koker 2013 *Wash J L Tech & Arts* 156.

¹⁴ Kambale *Digital Financial Services* 3.

¹⁵ Kambale *Digital Financial Services* 3.

¹⁶ *Banks Act* 94 of 1990.

¹⁷ SARB *Position Paper on Electronic Money* 2, 6, 7.

¹⁸ SARB *Position Paper on Electronic Money* 7.

¹⁹ Genesis Analytics *Fintech Scoping* 3, 6.

3 DFSs and financial inclusion

The first question in this study seeks to determine whether the technology of DFSs can and should be applied to increasing the financial inclusion of all the people in South Africa, specifically unbanked people. To answer this question, the influence of DFSs on financial inclusion will be analysed.

3.1 Financial inclusion

A large and growing body of literature has investigated what financial inclusion entails.²⁰ It has been suggested that the most basic definition of being financially included is whether a person owns an account at a formal financial institution.²¹ Previous studies have reported that financial inclusion depends on whether individuals (particularly low-income consumers) can access financial services that are appropriate to their needs and continually be able to use them.²² Various factors have an effect on whether an individual will be included or excluded from financial services.²³ These factors could be influenced by the demand of individual customers on the one hand and by the supply of the financial services by institutions on the other hand.²⁴ Winn and De Koker point out that in many, or perhaps all, developing countries, financial inclusion is a vital social and economic policy objective.²⁵

Jabir defines financial inclusion as making basic formal financial services available, affordable and readily usable by all members of an economy, especially by low-income individuals.²⁶ He analyses detailed information on financial inclusion and his results suggest that the poor who are financially included derive net wealth benefits and larger welfare benefits than those who are not financially included.²⁷

Nhavira points out that barriers that hinder marginalised people from being financially included involve psychological and cultural barriers, social and

²⁰ Zins and Weill 2016 *Review of Development Finance*; Chigada and Hirschfelder 2017 *SAJIM*; Fanta *et al Role of Mobile Money*; Williams, Adegoke and Dare 2017 *IJRESS*; Lawack 2013 *Wash J L Tech & Arts*; Louis and Chartier 2017 *Journal of Comparative Urban Law and Policy*; Winn and De Koker 2013 *Wash J L Tech & Arts*; World Bank *Achieving Effective Financial Inclusion*; Nhavira 2015 *Journal of Strategic Studies*; Abrahams *Financial Inclusion*; Bester *et al FATF Standards in Developing Countries*; Jabir 2017 *AFJ*.

²¹ Zins and Weill 2016 *Review of Development Finance* 47-49.

²² Bester *et al FATF Standards in Developing Countries* 5.

²³ Bester *et al FATF Standards in Developing Countries* 5.

²⁴ Bester *et al FATF Standards in Developing Countries* 5.

²⁵ Winn and De Koker 2013 *Wash J L Tech & Arts* 156.

²⁶ Jabir 2017 *AFJ* 2.

²⁷ Jabir 2017 *AFJ* 2.

environmental issues, and the accessibility, affordability and eligibility of financial services.²⁸

In this paper we adopt the meaning that Louis and Chartier ascribe to financial inclusion, namely that it entails that individuals and businesses have access to useful and affordable financial products and services that meet their needs, including payments, savings, credit, investment and insurance, all delivered in a responsible and sustainable way.²⁹

3.2 The impact of DFSs on financial inclusion

In recent years there has been an increasing amount of literature on the significance of the impact that DFSs have on financial inclusion.³⁰

Demircug-Kunt *et al* highlighted in 2018 that policy makers can use new technologies such as mobile money to lower or even remove barriers to financial inclusion.³¹ One significant barrier to financial inclusion, namely affordability, can be addressed by implementing mobile banking and thus increasing the affordability of financial services.³² Mobile banking is a cost-effective practical way of extending basic banking services to unbanked people in urban as well as remote rural areas.³³

Writers like Andrianaivo and Kpodar have expressed the opinion that when financially excluded people subscribe to mobile phones, this leads to higher levels of financial inclusion.³⁴ Louis and Chartier find that including mobile banking into the South African financial system regulatory reform would be an important step towards financial inclusion of the poor.³⁵

Alexandre and Eisenhart argue in favour of mobile money, that the dependency on cash is an enemy to financial inclusion, and mobile money will reduce the reliance on it; and further that mobile money accelerates the development of bank accounts, and that leads to financial inclusion.³⁶

Fanta *et al* highlight that the cost involved for financial institutions in building and maintaining a brick and mortar branch is one of the reasons why

²⁸ Nhavira 2015 *Journal of Strategic Studies* 85.

²⁹ Louis and Chartier 2017 *Journal of Comparative Urban Law and Policy* 182.

³⁰ Demircug-Kunt *et al* *Global Findex Database*; Winn and De Koker 2013 *Wash J L Tech & Arts*; Kambale *Digital Financial Services*; Andrianaivo and Kpodar *ICT, Financial Inclusion, and Growth*; Alexandre and Eisenhart 2013 *Wash J L Tech & Arts*; De Koker 2013 *Wash J L Tech & Arts*.

³¹ Demircug-Kunt *et al* *Global Findex Database* 7, 11.

³² Demircug-Kunt *et al* *Global Findex Database* 44.

³³ Winn and De Koker 2013 *Wash J L Tech & Arts* 156.

³⁴ Andrianaivo and Kpodar *ICT, Financial Inclusion, and Growth*.

³⁵ Louis and Chartier 2017 *Journal of Comparative Urban Law and Policy* 195.

³⁶ Alexandre and Eisenhart 2013 *Wash J L Tech & Arts* 287. Alexandre and Eisenhart are both of the Financial Services for the Poor programme at the Bill and Melinda Gates Foundation.

financial services are not successfully brought to the poor at affordable prices.³⁷ Mobile technology is changing the world of access to financial services. It enables people to send and receive money as well as to save and borrow it.³⁸

A study by the Finmark Trust examined the link between mobile money and financial inclusion and what they found reinforced their claim that mobile money is very important in expanding financial inclusion to people without bank accounts.³⁹ In that study it was also found that the popularity of mobile money among the unemployed provides an opportunity to expand financial services to them through mobile phones.⁴⁰ If mobile money were to be extended to rural areas, this would lead to financial inclusion among these people.⁴¹ An important condition, according to Fanta *et al*, is that mobile money should be user-friendly, so that uneducated people will not be kept from using it.⁴²

In as early as 2013 Lawack suggested that the over-regulation of mobile payments in South Africa might lead to missing a golden opportunity to increase financial inclusion in the payment system.⁴³ She proposed that regulation should be adapted to suit a particular service and not be performed along traditional lines.⁴⁴

The World Bank published a report in 2018 wherein the results of an analysis based on the PAFI Report⁴⁵ were presented. It illustrated that the mobile money market in South Africa is still in its early stage, since in 2014 only 24% of adults used mobile banking and 11% internet banking.⁴⁶ Even among those using mobile banking, 44% of users considered it to be too complicated.⁴⁷

There is an increasing concern in South Africa about the quality of financial inclusion. According to the 2019 report by Genesis Analytics, the overall rate of formal financial inclusion of the adult population in South Africa is

³⁷ Fanta *et al* *Role of Mobile Money* 1.

³⁸ Fanta *et al* *Role of Mobile Money* 1.

³⁹ Fanta *et al* *Role of Mobile Money* 23.

⁴⁰ Fanta *et al* *Role of Mobile Money* 23.

⁴¹ Fanta *et al* *Role of Mobile Money* 23.

⁴² Fanta *et al* *Role of Mobile Money* 25-26.

⁴³ Lawack 2013 *Wash J L Tech & Arts* 345.

⁴⁴ Lawack 2013 *Wash J L Tech & Arts* 345.

⁴⁵ World Bank *Payment Aspects of Financial Inclusion*. This report by the World Bank, known as the PAFI report, was used as the basis for the World Bank report on *Achieving Effective Financial Inclusion in South Africa: A Payments Perspective*. In the PAFI report principles were outlined to increase financial inclusion, derived from best practices in various countries.

⁴⁶ World Bank *Achieving Effective Financial Inclusion* 64.

⁴⁷ World Bank *Achieving Effective Financial Inclusion* 65.

77%.⁴⁸ Although the rate is high, the quality of financial inclusion is low, because individuals do not make use of a big basket of financial services.⁴⁹ The survey attributes this to the low uptake of digital payments, and the poor knowledge of financial products, amongst other things.⁵⁰ The report also attributes this to consumers' dependence on using cash for payments.⁵¹ Almost 80% of all transactions in South Africa were found to be cash-based, which for obvious reasons leaves much room for the expansion of digital payments.⁵² In regard to consumer adoption, the investigation found that because of the high mobile adoption rates, the expected growth of the fintech business is strong, as fintechs will continue to take advantage of the many payment options that they can make available to consumers.⁵³ The report holds the view that fintechs will create more and more efficient and affordable payment platforms and it is expected that consumers will use them to a greater extent. In order to be really successful in expanding the use of digital payments, fintechs will have to collaborate more with traditional banks.⁵⁴

The Genesis Analytics Report argues that digital banks investments in digital core banking services add value to customers, especially since the costs of banking are kept low and innovative products are made available.⁵⁵ In South Africa three new digital banks entered the market in 2019. One of them, Tyme Bank, grew from 80 000 customers in March 2019 to 250 000 customers a month later.⁵⁶ The other two are Bank Zero and Discovery Bank.⁵⁷ These banks offer quick application processes and lower fees.⁵⁸ In terms of section 6(5) of the *Banks Act*, digital banks have to have a banking licence in terms of the *Banks Act* and thus customers of digital banks are adequately protected by the financial laws of the country.

One of the major differences between banks and fintechs in South Africa is that although the banks underpin internet banking and mobile and digital payments, fintechs by nature look for ways to use technology to revolutionise the financial system, whereas the banks have to find ways to improve existing processes.⁵⁹ The biggest growth in fintechs has occurred in respect of payments.⁶⁰ The reason for this may be that payments through

⁴⁸ Genesis Analytics *Fintech Scoping* 22.

⁴⁹ Genesis Analytics *Fintech Scoping* 22.

⁵⁰ Genesis Analytics *Fintech Scoping* 35.

⁵¹ Genesis Analytics *Fintech Scoping* 35.

⁵² Genesis Analytics *Fintech Scoping* 39.

⁵³ Genesis Analytics *Fintech Scoping* 39.

⁵⁴ Genesis Analytics *Fintech Scoping* 39.

⁵⁵ Genesis Analytics *Fintech Scoping* 21.

⁵⁶ Genesis Analytics *Fintech Scoping* 21.

⁵⁷ Genesis Analytics *Fintech Scoping* 36.

⁵⁸ Genesis Analytics *Fintech Scoping* 36.

⁵⁹ Genesis Analytics *Fintech Scoping* 21.

⁶⁰ Genesis Analytics *Fintech Scoping* 7.

fintechs are often simpler and faster.⁶¹ Most payments that are handled by fintechs are in their capacity as third-party payment providers or payment service providers.⁶²

A second question that has to be considered is what the impact of the powers assigned to the regulators by the *FSR Act* is in regard to financial inclusion.

3.3 *The FSR Act*⁶³

In February 2011 the National Treasury in South Africa issued a policy paper known as the Red Book.⁶⁴ In this policy paper a number of proposals were set out to reshape and strengthen the financial regulatory system.⁶⁵ The National Treasury identified the Twin Peaks model of financial regulation as an appropriate regulatory approach that South Africa should embrace in future.⁶⁶ This would provide the legal and institutional framework for implementing the various regulatory changes that had to be made.⁶⁷ Key proposals for reform set out in the policy document included improved access to financial services for the poor, the vulnerable and those living in rural areas in South Africa, since that would support sustainable and inclusive economic growth and development.⁶⁸ On 21 August 2017 the *FSR Act* was signed into law, implementing the Twin Peaks model of financial regulation in South Africa. The commencement date of the Act was 1 April 2018.⁶⁹

The *FSR Act* introduced the Twin Peaks system of financial regulation in South Africa. Two regulators namely the Prudential Authority (PA)⁷⁰ and the Financial Sector Conduct Authority (FSCA)⁷¹ were established by the Act. In section 1 of the Act, financial inclusion is set out to mean that all persons have timely and fair access to appropriate, fair and affordable financial products and services. Section 7(1)(f) of the *FSR Act* mentions that one of the specific objects of the Act is financial inclusion.⁷² Furthermore in

⁶¹ Genesis Analytics *Fintech Scoping* 7.

⁶² Genesis Analytics *Fintech Scoping* 7.

⁶³ *Financial Sector Regulation Act* 9 of 2017 (*FSR Act*).

⁶⁴ National Treasury *Safer Financial Sector*.

⁶⁵ National Treasury *Safer Financial Sector* 7.

⁶⁶ National Treasury *Safer Financial Sector* 8.

⁶⁷ National Treasury *Safer Financial Sector* 8.

⁶⁸ National Treasury *Safer Financial Sector* 29.

⁶⁹ Gen N 169 in GG 41549 of 29 March 2018.

⁷⁰ Section 32 of the *FSR Act*.

⁷¹ Section 56 of the *FSR Act*.

⁷² Section 7 of the *FSR Act* provides that the object of the Act is to achieve a stable financial system that works in the interests of financial customers, and supports balanced and sustainable economic growth in the Republic, by establishing, in conjunction with the other financial sector laws, a regulatory and supervisory framework that promotes financial stability; the safety and soundness of financial

sections 34 and 58 of the Act it is stated that the PA and the FSCA have to support and promote financial inclusion respectively. From the wording of the sections it is clear that the FSCA has to take it one step further than the PA, since the latter only has to *support* financial inclusion whereas the former has to *promote* it.⁷³

In view of the study above, one may suppose that financial inclusion will undoubtedly be affected by the adoption of DFSs. It seems as if consumers are becoming more positive towards digital payments and that, together with the high percentage of people who have access to mobile phones and the expected growth of fintechs, this will probably lead to the expansion of DFSs. To achieve this, enough support from the government and the financial services industry would be necessary. Financial inclusion was put statutorily in the forefront by the *FSR Act*, being explicitly legislated for the first time in an Act in South Africa. The authors argue hence that the two regulators established by the *FSR Act*, the PA and the FSCA, are enabled by the Act to insist that financial institutions should take proactive steps to expand DFSs.

4 The adoption of DFSs

It is clear that the adoption of DFSs can enhance financial inclusion. Therefore, it is necessary to analyse the current perspectives and use of DFSs by customers.

4.1 Perspectives and use by consumers of DFSs

From evidence obtained in FinScope surveys in eleven countries in the Southern African Development Community⁷⁴ the FinMark Trust documented mobile money penetration levels in various countries in 2016, and identified factors affecting the adoption of mobile money.⁷⁵ It was found that a lack of information is the most commonly cited barrier to mobile money ownership.⁷⁶ Most adults in the study mentioned a lack of information, a lack of education and an absence of knowledge about mobile

institutions; the fair treatment and protection of financial customers; the efficiency and integrity of the financial system; the prevention of financial crime; financial inclusion; the transformation of the financial sector; and confidence in the financial system.

⁷³ Section 34(1)(e) of the *FSR Act*: in order to achieve its objective, the Prudential Authority (PA) *must support* financial inclusion. S 58(1)(e): in order to achieve its objective, the Financial Sector Conduct Authority (FSCA) *must promote* financial inclusion. Authors' emphasis.

⁷⁴ The Southern African Development Community includes sixteen member states: Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe.

⁷⁵ Fanta *et al Role of Mobile Money* 4.

⁷⁶ Fanta *et al Role of Mobile Money* 23.

money as major barriers to their adopting mobile money.⁷⁷ According to the study this implies that financial education programmes aimed at enhancing people's attitudes towards and understanding of mobile money would be important in promoting increased adoption among the financially excluded segments of the population.⁷⁸

Chigada and Hirschfelder performed a study on the adoption of mobile money in South Africa in 2017.⁷⁹ They highlighted that 89% of South Africans have a mobile phone, of which 34% are smartphones.⁸⁰ Although only 16.4% of South Africans in metropolitan areas, 9.2% in urban areas and 2% in rural areas have internet access at home, 30.8% of households go online using mobile devices.⁸¹ Furthermore, 84% of South African internet users access the World Wide Web via mobile technology.⁸² Internet banking has become a well-used alternative to traditional banking.⁸³ The writers identify the major reasons for mobile banking adoption as "convenience, access to banking services at any time of the day or night and minimisation of effort, time and consultation costs".⁸⁴ They found that mobile banking in South Africa "improves banking skills, simplifies bank account maintenance, and simplifies money transfers".⁸⁵

According to the 2019 report by Genesis Analytics, smartphone and internet penetration in South Africa increased to 90% of adults using mobile phones, of which the use of smartphones increased to 69%.⁸⁶ The report stressed that the relatively high cost of data in South Africa is a factor that influences the adoption of DFSs.⁸⁷

Overall, these studies highlight that consumers' perspectives on and use of DFSs can probably be altered by financial education that disseminates more information on DFSs to South Africans in need thereof.

4.2 The vista of DFSs

Salem contends that the South African financial sector is moving into a technological and/or innovative era of banking that brings convenient remote banking services to its customers.⁸⁸ The use of digital banking is advantageous to customers because the technology provides customers

⁷⁷ Fanta *et al* *Role of Mobile Money* 23.

⁷⁸ Fanta *et al* *Role of Mobile Money* 23.

⁷⁹ Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸⁰ Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸¹ Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸² Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸³ Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸⁴ Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸⁵ Chigada and Hirschfelder 2017 *SAJIM* 3.

⁸⁶ Genesis Analytics *Fintech Scoping* 23.

⁸⁷ Genesis Analytics *Fintech Scoping* 23.

⁸⁸ Salem 2020 *SA Financial Markets Journal* 5.

with simple, faster and more convenient banking services.⁸⁹ This paper shares a similar sentiment by asserting that customers who bank digitally through DFSs are able to access the services remotely at any time wherever they are without physically having to go to the bank and transact. It is the view of the authors that digital banking is the most effective way of accessing daily banking services. This opinion is based on the fact that when transacting online, customers need not wait in long queues, but they may deposit, transfer and even bank without having to visit a branch to access services.

According to Selebalo, innovative banking should be appraised in that it allows people in the lower income bracket to participate in the global economy as it ensures lower costs because of banking online.⁹⁰ The introduction of technological banking has brought about a positive change in people's lives in that it reduces transaction costs and brings the unbanked section of a population into the formal economy using mobile phones and accessing services everywhere.⁹¹ A similar sentiment is shared by Louw and Nieuwenhuizen, who agree that digital banking brings about positive benefits to the population since it not only challenges the traditional way of banking, but it also introduces lower running costs to customers when transacting online because of low banking charges and because services are accessible remotely anywhere in the world.⁹²

According to Van Metzinger, the period of digitalisation in the financial sector has introduced the fastest and simplest way of accessing banking services in that the clients of a bank may through a smart phone or computer make payments, collections, transfers and manage cash flows instantly without having to go to the branch to access the services.⁹³ Radcliffe and Voorhies are of the view that technological banking services present the most convenient way of transacting for banked customers whilst at the same time ensuring that the unbanked are financially included.⁹⁴ Louw and Nieuwenhuizen contends that digital banking services facilitate online transactions which may be performed by customers at any time for as long as they are registered users, and also financially includes the marginalised in that they are enabled to meaningfully and remotely gain access to financial services without having to go to a branch physically and obtain services.⁹⁵ Thusi avers that the introduction of DBSs has enabled banks to

⁸⁹ Dube *Digital Banks* 1.

⁹⁰ Selebalo "Mobile Phone Banking".

⁹¹ Ondiege 2010 *Africa Economic Brief* 4.

⁹² Louw and Nieuwenhuizen 2020 *SAJIM* 3.

⁹³ Ventureburn 2020 <https://ventureburn.com/2020/10/advantages-of-transparent-digital-banking-for-businesses/>.

⁹⁴ Radcliffe and Voorhies 2012 *SSRN Electronic Journal* 3.

⁹⁵ Louw and Nieuwenhuizen 2020 *SAJIM* 5.

eliminate the necessity for branch offices and staff, resulting in reduced costs, access to new segments of the population, improved productivity, improvement of the bank's image, and improved customer service and contentment.⁹⁶ Accordingly, this method of banking enables customers to access banking services without the time and place constraints associated with physical branch banking in which they are expected to wait in long queues, which is time consuming and inconvenient to them.⁹⁷ The authors maintain that mobile financial services must be adopted expeditiously by banking institutions, and customers must also subscribe to these services because they are convenient and make banking easily accessible by all.

According to Makina, DFSs makes the financial sector more inclusive in that they serve the needs of the unbanked and under-banked and also ensure that the majority of the population can have access to services which they never had.⁹⁸

Dagada contends that the use of DFSs is another way of eradicating queue gang crimes in that it protects customers from being robbed of their money while waiting in queues at the banks, and encourages them to move away from the traditional ways of banking.⁹⁹ This paper shares this view and asserts that DFSs assist in ensuring the personal safety of customers because they no longer need to queue at an ATM to transact, and risk being attacked by vicious criminals.

It is the view of the authors that DFSs are the most convenient method of enabling customers to bank remotely and access daily banking services. The authors are of the opinion that there is a clear indication that digitalisation is the only way forward for the financial sector as it provides inclusion to all, and customers enjoy remote banking such as payments, collections and transfers that are made instantly. The paper contends that what makes DFSs even more acceptable is the fact that it lowers the costs of banking as compared to traditional methods of banking, in which the customer will incur more costs for making payments and or transacting.

5 The challenges of financial crimes and DFSs

As Winn and De Koker stated, although mobile money brings many advantages with it, it also brings with it risks that have to be considered, including risks of criminal activities.¹⁰⁰ This paper is of the opinion that criminal activities that are associated with digital financial services deter customers from transacting online. Notwithstanding the fact that DFSs are

⁹⁶ Thusi *Acceptance and Use of Mobile Banking Apps* 2.

⁹⁷ Sreejesh, Anusree and Mitra 2016 *IJBM* 1092.

⁹⁸ Makina 2020 *SA Financial Markets Journal* 2.

⁹⁹ Dagada "Digital Banking Security" 7.

¹⁰⁰ Winn and De Koker 2013 *Wash J L Tech & Arts* 156.

convenient methods of accessing daily banking services by customers, the reality depicts that there are challenges that confront this remote method of banking.

Blessing avers that even though DFSs ensure that customers are conveniently and remotely accessing banking services, pitfalls such as financial crimes confront these methods and customers remain victims of these offences.¹⁰¹ This paper is of the view that most of the marginalised members of society fall victims to these financial crimes because they are not financially and technologically literate. Fraudsters therefore target these customers when they are banking online and victimise them. This suggests that there is a need to look into the types of financial crimes that customers may fall victim to, and explore feasible solutions.

Financial crime is defined as an act or attempted act against institutions, governments or individuals by internal or external agents to illegally appropriate, defraud, manipulate or circumvent legislation.¹⁰² Eisenberg writes that financial crimes occur in instances when either an organised group or an individual handles the proceeds of the crime and/or any offense involving fraud or dishonesty pertaining to information relating to financial markets.¹⁰³ In a nutshell, financial crime takes place when there is financial misbehaviour that includes fraud or dishonesty either by an individual or organised group. This particular type of offence or crime is known to cover the following, namely fraud, money laundering, terrorist financing, bribery and corruption, market abuse and insider dealing, information security etc. These financial crimes are often committed by organised groups or fraudsters who target customers transacting through digital banking in order to fund their operations/businesses.

Manoose argues that currently despite the fact that South Africa has implemented the *Financial Intelligence Centre Act*¹⁰⁴ and the *Financial Intelligence Centre Amendment Act*¹⁰⁵ to combat money laundering and terrorist finance, the reality is that in order to successfully combat these digital financial crimes the banks or institutions must impose stricter information verification methods when transacting with clients online.¹⁰⁶ This paper avers that this is necessitated by the fact that the security questions banks or financial institutions currently ask when transacting online are weak and must be strengthened to reduce potential risks. For example, the financial institutions may ask a client to verify his/her identity

¹⁰¹ Maumbe 2006 *International Review of Business Research Papers* 78.

¹⁰² O'Flaherty and Melnick 2020 <https://www.pwc.co.za/en/services/advisory/anti-money-laundering-services.html>2. Also see Jung and Lee 2017 *JPAG* 90.

¹⁰³ Eisenberg 2017 *JFC* 529.

¹⁰⁴ *Financial Intelligence Centre Act* 38 of 2001.

¹⁰⁵ *Financial Intelligence Centre Amendment Act* 1 of 2017.

¹⁰⁶ Manoose *Banking Confidentiality* 36.

number or card number and this exposes customers to these offences because the anonymous fraudsters then easily obtain access to this information. As a result, the authors are of the view that instead of asking for a card number or identity number of the client, the banks or financial institutions may require more personal information they would have gathered from the client when opening the account. Therefore, it is the submission in this paper that once security or verification questions are improved by the financial institutions when clients transact online, the prevalence of digital financial crimes will surely be minimised, if not totally prevented.

Grimmelmann avers that mobile banking makes financial services readily and easily accessible to the unbanked, but at the same time fraudsters or criminals find an opportunity to abuse weaknesses found in the digital banking system and defraud those economically deprived of an opportunity to bank digitally or discourage them due to their digital victimisation.¹⁰⁷ Criminals target digital networking to defraud customers because they are able to successfully, quietly and systematically survey and map vulnerabilities in banks' financial crime controls and third-party processors' systems.¹⁰⁸ According to Nel, fraudsters take advantage of the fact that there is insufficient technology to trace incidents of financial crimes and customers are victimised as follows:

When funds are electronically transferred via a mobile phone and the phone is destroyed, it may become very complex to reconstruct the transaction. Even with a prepaid phone, the service provider may not be able to identify its client in the absence of credit risk and account monitoring. Criminals can buy prepaid mobile phone handsets with false identification and use the minutes preloaded on the phone without leaving a trace of a calling record.¹⁰⁹

According to Sulieman and Salleh, criminals or fraudsters easily manipulate the system in that they provide false information when registering their mobile phones so that they are not identified when defrauding customers online or remain anonymous, and this exposes the client or customer to financial crimes.¹¹⁰ Naheem avers that the fraudsters commit these offences by using a mobile phone that is linked to an account online and transact through it and consequently victimise customers without being identified.¹¹¹ This paper shares this sentiment and asserts that financial crimes are committed on innovative technological platforms, and when there is no proper induction and or workshop on the part of law enforcement officers,

¹⁰⁷ Grimmelmann *Anarchy, Status Updates, and Utopia* 1.

¹⁰⁸ Grimmelmann *Anarchy, Status Updates, and Utopia* 1.

¹⁰⁹ Nel *Know-Your-Customer Measures* 33.

¹¹⁰ Sulieman and Salleh 2020 *JCR* 568.

¹¹¹ Naheem 2018 *JFC* 563.

the customers will continue to suffer and the perpetrators will go scot-free without any prospect of prosecution.

In addition to the lack of the technological training of police officials or authorities, De Koker argues that customers are challenged by these financial crimes because there is no co-operation between the law enforcement agencies globally and that once there is stronger collaboration of law enforcement agencies in combatting these crimes, the perpetration of these offences will reduce.¹¹² Accordingly, financial crimes may be reduced if not totally prevented if the government equips police officials with a sufficient predicative analytical and learning technological machine that will enable them to trace events leading to the transactions and proceeds thereof.¹¹³

Notwithstanding the fact that digital transaction detectors are available to alert authorities when suspicious transactions take place, the paper is of the view that in order to eliminate suspicious transactions effectively, a thumb-print system will be required to authenticate or verify the identity of an existing customer. A customer will then be required to authenticate an online transaction by using his/her thumb. A voice recognition system might also assist in combatting criminal activity. The voice of the customer would be recorded on card activation. When transacting online the identity of the customer would be verified by the voice recognition system. These measures would surely assist in lowering the prevalence of financial crimes.

According to Kersop and Du Toit, mobile transacting or banking cannot be disassociated from money laundering in that proceeds may be sent from one institution to another, including from a local to an international institution, so as to conceal its origin and to obscure its source.¹¹⁴ A similar sentiment is also expressed by Nel, who is of the view that mobile banking or transactions are risk-associated in that they lack transparency when a transaction is made without contact with a client, because this is more vulnerable to the transfer of illicit proceeds than when a client transfers a payment peer to peer with a teller at an institution.¹¹⁵

Demombynes and Thegeya are of the opinion that DFSs have also introduced difficulties for customers in that criminals may easily defraud the economically deprived of an opportunity to participate in the financial space digitally.¹¹⁶ According to Chigada and Hirschfelder, mobile banking in South Africa is one of the most important platforms available to the lower-income population, enabling them to bank or transact digitally with ease, but it

¹¹² De Koker 2007 *Economic Affairs* 35.

¹¹³ OECD *Money Laundering and Terrorist Financing Awareness* 15.

¹¹⁴ Kersop and Du Toit 2015 *PELJ* 1620.

¹¹⁵ Nel *Know-Your-Customer Measures* 56.

¹¹⁶ Demombynes and Thegeya *Kenya's Mobile Revolution 2*.

exposes them to severe financial crimes when they are victimised by fraudsters and or organised criminals.¹¹⁷ Although there are regulations in place that guard against any form of financial crime, the reality is that the regulations are not stringent enough in that only a few criminals or fraudsters are prosecuted.¹¹⁸ The view expressed in this paper is that only a few fraudsters are detected due to the lack of technological means to trace them. It is submitted that the failure to prosecute the perpetrators of these financial crimes amounts to a perpetuation of the problem and has a devastating effect on South Africa's banking sector. The dearth of prosecutions will also deter investors.¹¹⁹

Chatain *et al* contend that the lack of technological devices to trace the money trail or the illicit transfer of money from one account to another contributes greatly towards the successful victimisation of customers by criminal groups and or fraudsters.¹²⁰ Makoza explains that even though the adoption of mobile banking in South Africa has seen the country introduce a compulsory sim-card registration with a view to identifying and tracking transacting individuals, the country is still burdened with many financial crimes and the authorities are unable to find and prosecute the perpetrators.¹²¹ This contention is reiterated by Haynes, who recommends the introduction of advanced technological devices to assist the authorities in identifying the perpetrators of financial crimes.¹²² The only stumbling block will be when fake credentials are used to open accounts or operate devices and victimise the marginalised and or unbanked sector of the population.¹²³

There is a great need for the state to introduce measures aimed at protecting the interest of customers when they transact through DFSs. Once tougher and stricter measures are put in place, this will instil courage and confidence into the marginalised population and enable them to venture into DFSs and transact digitally without being targeted by organised criminals.

6 Conclusion

In view of the discussion above, this paper finds that the expansion of the technology that involves DFSs has led to and could lead to even higher levels of financial inclusion in South Africa. One might suppose that a more general adoption of DFSs could be a very effective way of increasing

¹¹⁷ Chigada and Hirschfelder 2017 *SAJIM* 2.

¹¹⁸ Botha *Combating Financial Crime* 224-225. Also see Maumbe 2006 *International Review of Business Research Papers* 72-79.

¹¹⁹ Botha *Combating Financial Crime* 225.

¹²⁰ Chatain *et al* *Protecting Mobile Money* 9-10.

¹²¹ Makoza 2017 *IJTD* 34.

¹²² Haynes 2019 *JMLC* 174.

¹²³ Haynes 2019 *JMLC* 175.

financial inclusion in South Africa if the necessary steps were to be taken. It is submitted that it is now more crucial than ever to increase financial inclusion.

Since the need to support financial inclusion has now been enacted in a statute for the first time, the authors argue that the PA and the FSCA should demand that financial institutions take proactive steps to expand the use of DFSs in order to increase and deepen financial inclusion.

Due to the fact that customers are not informed about and knowledgeable in the use of DFSs, the need exists for more information on this topic to be disseminated to South Africans who have not used the technology before. Furthermore, there seems to be some evidence that data in South Africa must be made cheaper in order to promote the adoption of DFSs.

This paper reveals that unbanked customers fall victim to fraudsters when transacting online due to their technological and financial illiteracy. It is evident that in order to ensure that the unbanked overcome their fear of victimisation, the banking or financial institutions must educate them on various methods that may be used to transact online and at the same time inform them of various dangers associated with online transactions and how they may be totally avoided. It is safe to state that financial crimes remain a threat when customers transact online and it is the duty of the customers to ensure that they do not divulge their personal information to any other person in order to avoid being hacked or victimised by fraudsters.

Furthermore, the fears of customers have to be addressed by ensuring that security standards are in place and that customers are protected against online fraud and informed about the risks of using DFSs.¹²⁴ This could lead to an increase in the use of DFSs and accordingly lead to greater financial inclusion.

As seen in this paper, there are many positives that could flow from the greater use of DFSs, but there are challenges that have to be overcome to unlock the advantages and benefits of the use of DFSs in South Africa.

7 Recommendations

Arising from this research, the following recommendations are made:

First recommendation: The PA and the FSCA should take proactive steps to enforce their powers to expand the use of DFSs in order to raise the quality of financial inclusion in South Africa. Institutions in the financial sector should be required by the FSCA to actively boost the uptake of DFSs

¹²⁴ World Bank *Achieving Effective Financial Inclusion* 78.

by informing and educating people who are ignorant or scared of them. The PA should support the actions of the FSCA.

Second recommendation: More should be done by the South African state in regard to the financial literacy of unbanked people, specifically in regard to DFSs. People should be informed about it, especially people in rural areas and uneducated people. Financial education programmes that address people's perspectives on and understanding of DFSs should be undertaken.

Third recommendation: Technological detectors and digital identification to authenticate or verify customers when transacting online exist and are available. If these measures are used effectively, their use could alert authorities to suspicious transactions and assist in combatting financial crimes. There must be more capacity building by the authorities to combat criminal activities. There is a need to consider implementing the authentication of online transactions by a thumb-print or voice recognition system.

Fourth recommendation: To combat financial crimes, a financial institution may have to ask for sophisticated personal information from customers when they transact online, instead of asking only for a card number and/or an identify number, which could easily be accessed by criminals.

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List of Abbreviations

AFJ	African Finance Journal
ATM	automated teller machine
DFSs	Digital financial services
Fintech	financial technology firm
FSCA	Financial Sector Conduct Authority
FSR Act	Financial Sector Regulation Act 9 of 2017
IJBM	International Journal of Bank Marketing
IJRESS	International Journal of Research in Economics and Social Sciences

IJTD	International Journal of Technology Diffusion
JCR	Journal of Critical Reviews
JFC	Journal of Financial Crime
JMLC	Journal of Money Laundering Control
JPAG	Journal of Public Administration and Governance
OECD	Organisation for Economic Co-operation and Development
PA	Prudential Authority
POS	point of sale
SAJIM	South African Journal of Information Management
SARB	South African Reserve Bank
SARB Vision 2025	South African Reserve Bank <i>National Payment System Framework and Strategy – Vision 2025</i>
SIM	subscriber identification module
SSRN Electronic Journal	Social Science Research Network Electronic Journal
Wash J L Tech & Arts	Washington Journal of Law, Technology and Arts