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Fintech Application for Unbanked Minimum Wage Earners in South Africa

Applied Research Project (ARP) –
Business Venture Proposal

by

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Wits Business School
[February 2024]

DECLARATION

I, Wynand Petrus Hendrik Nicolaas Swart declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Signed Lydenburg, Mpumalanga 1120

On the 31th March 2024

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SUPPLEMENTARY INFORMATION

Supervisor:	Dr Keratiloe Mogotsi
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Supplementary files:	Participant Information Sheet
	Data Collection Instrument
	Ethics Clearance Certificate
	Qualitative Analysis

† Including abstract references, etc.

ABSTRACT

With the high unemployment rate in South Africa, the greatest proportion of the salary earning population earns minimum wages. This is especially true within the farming and agriculture community, as the agriculture sector constitutes one of the largest contributors to the South African GDP as one of the main employers in the country. The farming sector is required to adhere to the minimum wage regulation determined by the South African government, where farm workers struggle to survive on the income that they receive, which many in this precarious financial circumstance opt to receive in cash. This business venture proposal sought to identify a solution in the form of a mobile fintech application specifically designed for minimum wage earners to use instead of a traditional banking account. The objective of venture is to help minimum wage earners to opt for a cashless method to receive their wages, enabling them to manage their finances without incurring banking fees that diminish the already limited amount on which they survive. The cost of the application is designed to be borne by their employers, the workers themselves, among others, making the product affordable and attractive, and ensuring a heterogenous revenue stream for the owner of the platform. A qualitative research methodology was used to explore the venture to identify areas of interest, as well as factors affecting the viability of such a business venture. Twenty-five interviews and questionnaires were completed through in-depth interviews with farm workers and owners. The findings have shown that there is a definite need for cheaper banking systems in this economic climate. The findings also suggested that what the product was initially intended to do would need to change to suite customer needs better, however, the pivot point created as part of a lean start-up strategy followed by the business team allowed for moving in different directions to create a successful venture. This business venture proposal can benefit from some further research in the areas of technological adoption and implementation.

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1. Introduction and Scope of the Business Venture Proposal

1.1. Introduction

In South-Africa there are roughly 32000 commercial farmers, where between 5000 and 7000 of these farmers produces roughly 80% of all agriculture output. (South Africa - Agricultural Sector, 2018) In the 4th quarter of 2021, there was a small recovery from the previous year back to 891 000 jobs in the agriculture sector, but the net loss of jobs in the sector was still roughly 40000 due to the Covid-19 pandemic (BFAP, 2022).

Farming is naturally performed in the countryside or in rural areas, far away from the cities, due to the large tracts of land required to farm and produce agricultural products. Farm workers are then mostly domiciled in rural areas for proximity, and as a result, the majority of farm workers remain uneducated and work for minimum wage (Visser & Ferrer, 2015)The skilled and educated farm workers, such as supervisors, mechanics, managers and so forth, earn more than the minimum wage as their responsibilities grow. In a census conducted in 2011, 5.2% of the country's population, of whom 592 298 households with a combined population of 2 078 723 people were living on the farms on which they worked (Visser & Ferrer, 2015). With such a vast market of farm workers living on rural and communal lands, innovation is required in order to manage finances and payroll in an efficient and effective manner. This is even more important in modern times, with technological developments that this sector is able to leverage.

With the rise of technology use in everyday life, it has become increasingly simple for people to use basic technological applications on a daily basis, and the aim for a potential technology-based business model is to identify a way that technology can be incorporated into the daily use of a consumer and being able to charge a fee for such use.

This business venture proposal acknowledged the opportunity that exists in this market and provides a solution for the farming community to easily exchange and manage financial transactions utilising technology.

1.2. Research Problem

According to the Oxfordbusinessgroup.com, it is estimated that about 23.5% of citizens in South Africa do not have a bank account, and that roughly R12 billion is held in cash outside of the banking system in South Africa (South African Banks Making Efforts to Reach and Integrate the Unbanked Population - South Africa 2018 - Oxford Business Group, 2018). This is an extremely high number of people, roughly around 14 million, and it is believed that these individuals are minimum wage earners or lives in poverty (South African Banks Making Efforts to Reach and Integrate the Unbanked Population - South Africa 2018 - Oxford Business Group, 2018).

The consequence of the unbanked population dealing in cash, is the result of R23 billion, 0.52% of GDP of SA, being lost annually, and is a cost to the consumer of South Africa according to a study by Mastercard (Roberts, 2022). Although the number of banked adults are increasing on a continuous basis, cash transactions are still accounted for as being above the 50% mark for all transactions, to drive consumers away from cash is by the adoption of financial products and continuous use, according to Mastercard SA president, Mark Elliott (Roberts, 2022).

A solution to this problem is getting unbanked minimum wage-earning citizens onto a banking platform to decrease the volume of cash evading the banking system for the benefit of the larger economy, but also to assist the low-income demographic with a suitable and sustainable system that will grant them the opportunity to become financially stable. The opportunity to capitalise on the R12 billion outside the banking system will be an added benefit.

1.3. Purpose of this Venture

The purpose of this business venture proposal is to determine whether a market exists whereby a commercial farmer can utilise modern technology through a fintech application to pay workers in a cashless environment, where farm workers can utilise the same fintech application to use the money they earn on a mobile platform that also conveniently houses a worker's monthly financial documents, such as UIF statements, payslips, and bank statements.

This study also considers:

1. ways to practically implement a fintech solution for both farmers and workers;

2. how the farming sector could adopt simple technology for everyone that is both easy and secure;
3. some ways to use the fintech service on a mobile platform;
4. the possibility of doing away with physical money changing hands; and
5. a viability test of the technology conducted in the agriculture sector, which is dominated by uneducated and unskilled workers.

1.3. Scope of the Venture

This proposed business venture determines the various opportunities that exist within the framework of fintech application technology, which is a high-tech form of financial services, and how it can be applied in the developing world's agriculture sector, especially in Sub-Saharan Africa.

Cash has always been an easy way to pay farm workers, where often no accounting practices help them to keep track of what they earn, particularly in the case of a 'payslip' that is proof of income for day labourers (Stergios & Laskaridou, 2010).

Mobile money constitutes one of the biggest areas within the fintech industry, and mobile money solutions have always been used for the purpose of sending money from person to person, but the potential for wider accessibility is prominent, with mobile money being some of the most rapidly adopted technology innovations in the world (Hinson et al., 2019). The reason for this rapid adoption globally is the rapid increase in the use of mobile phones, as well as how easy and cheap it has become to adopt mobile money practices on a mobile device (Hinson et al., 2019).

With the above in mind, this research considers the viability of creating a mobile fintech application specifically targeted at the minimum wage-earning population of the South African agriculture sector.

1.4. Main objective

This proposed business venture seeks to identify opportunity within the agricultural sector for financial services for farmers and farm workers alike. The use of easy fintech services guided by a well-developed product and service can increase the frequency by which farmers engage with their workers on a financial basis, and can provide financial education to low-income farm workers, which in turn will increase their financial health and create a sustainable business model for the proposed venture.

This venture aims to create a user-friendly and secure interface that will eliminate some burdens that farmers face when having to pay a large-scale workforce.

The company resources for this venture consists of the following workforce:

- A founder/general manager;
- Three to four software engineers and programmers to create digital platform and sustain the IT system remotely;
- two field engineers to assist in the setup and development of the model in the field at farms; and
- one or two sales representatives that can both market the product and assist the field engineers in their capacity to garner more users.

The main focus areas will be those with ease of reach in Northwest, Limpopo, Mpumalanga, KwaZulu-Natal and the Free State, as these provinces are all largely agricultural and all border Gauteng.

2. Literature Review

2.1 Introduction

New financial technologies, otherwise known as ‘fintech’ refers to start-up business that are currently competing with traditional financial services that incorporates a service focused on the customer, and which can offer more speed and flexibility to their users (Nicoletti, 2017). Similarly, fintech, as defined by Thakora (2019), involves the use of technological innovations to offer new and enhanced financial services. Thakora (2019) further explains that the growth of fintech has been spurred in part by the fact that information technology has made products and services cheaper and more functional. These new financial technologies are radical, and they change the way in which new customers think and use financial services across the globe, where immediate access and convenience become a focus through smartphones and apps, and the internet of things (Nicoletti, 2017).

The much-anticipated development of fintech has been powered by excessive growth of investment and has advanced the technological breakthroughs in the multiple areas in which it is present, such as mobile networks, trust management, mobile embedded systems, cloud services and extensive data analytic measures (Gai et al., 2018). The reason why fintech has received focus is due to the numerous driving forces of the tech in areas such as technical development, new business innovations, cost-cutting measures, and the high demands of customers and it is reported that major competitive investment firms are driving investments in the industry (Wigglesworth, 2016). Automated systems and biometric technology are all advancements with the potential to revolutionise the way in which users engage with and use financial services (Coetzee, 2018).

Fintech services are key in the provision of ease of access, better interest rates, and usually low or no fees and overall, where the online experience and functionality are better than traditional ways of banking. Hence, fintech ideas are focused on a select number of offerings the business model is streamlined and provides a better service to customers (Buckley & Webster, 2016). Subsequently, incumbents within the financial services industry have diversified their product lines in recent years, with some developing digitally integrated banking products to compete on affordability and improve the user experience (Camarate and Brinckmann, 2017). These user-friendly online channels are allowing customers to satisfy most if not all of their current financial needs and wants, for example, when taking out a loan, the fintech services can offer alternatives to those customers unable due to geography to visit

traditional brick and mortar banks (Buckley & Webster, 2016). In Africa, geographical isolation from critical infrastructure widely prevalent. Consequently, the use of fintech in Sub-Saharan Africa, and more specifically focused on South Africa, is relevant to a rural and hard to reach population that is failed by more traditional technologies. The literature review identifies the ways in which these hurdles can be overcome, or how these technologies can be implemented in other ways in order to provide the best possible marketable service for clients.

2.1 Defining fintech and the ease of use of its services

Schueffel (2016) states that there was no common definition of fintech, where it was the 8th most searched topic on Google in 2016.

Definitions have been suggested as early as 1972, when Bettinger, (1972) stated that it is an acronym and it can be understood as the use of any financial technology that relies on computers and scientific techniques to combine the technology with banking expertise (Bettinger, A. 1972, as cited in (Schueffel, 2016).

As the income gap between middle-class and working-class families continues to widen at an alarming rate, the need for the fintech industry is increasing (Schueffel, 2016). According to the arguments presented by Coetzee (2018), South African financial institutions are coming to terms with the fact that they must evolve with current trends or be left behind.

Technology such as automation, digitisation, mobile devices, and virtual interaction, services and client engagement will become increasingly interconnected (Coetzee, 2018). Paper-based transactions have been displaced by electronic payments and online access methods generate additional cost savings. Rather than focusing on developing long-term connections with clients, banks may be enticed by economies of scale to engage in scalable financial services (Jakšič & Marinč, 2015). Therefore, the time is right for a new fintech innovation, as the technology is now at its zenith, and readily accessible.

2.2 Fintech being used to help the poor in developing countries

Access, use, and quality of existing financial services constitute three elementary perspectives that ought to be considered when considering financial inclusion (Dlamini, 2020; Kostov et al., 2013). An article endorsed by the World Bank Group has explored the way in which fintech services have been implemented in developing countries in Africa and Asia by traditional banks and technology companies; and how their innovative services provide value to

unbanked individuals. There exists a business opportunity in emerging markets for financial services as noted in this paper, where since the time of publication, there were roughly two billion people living in these emerging markets, who were unbanked with traditional banking systems. These financial service companies can create lucrative markets in these areas when they capitalise on the unbanked population (Alexander A, 2017).

Affordability presents a significant obstacle for the disadvantaged and marginalised, and findings by (Dlamini, 2020) indicate that this is also one of the reasons why these communities have insufficient access to formal banking services. Lack of infrastructure in place is cited as a barrier to accessing financial services in the majority of studies that examine this issue. It has also been shown that, when services are delivered to the poor in developing countries, this has a positive impact on the private sector productivity in those markets, because people now gain access to services previously unavailable to them as unbanked citizens (Oteng, 2019). If a population is excluded due to the aforementioned barriers, En et al. (2012) argue that this constitutes a form of exclusion, and warrants policy action. Incomplete or incorrect data, lack of competition, weak contracts, and inadequate physical infrastructure, are all examples of potential causes of market failures.

Financial inclusion (FI) was coined by the World Development Bank to describe the process of providing access to financial services for the economically disadvantaged (Chibba, 2009 as cited in Tshitenge, 2011). Extending services for basic or low-fee accounts, waiving complicated documentation requirements, facilitating correspondent financial services, and using banking services to make government payments are all effective policies aimed at promoting financial inclusion, especially for rural communities and the economically disadvantaged (En et al., 2012). This proposal is prompted by the wide demographic of unbanked and financial excluded communities across the globe, where there is also an existing market in South Africa of which I was aware due to my experience in the agri-sector, where I identified the need for an unconventional banking system for the low-income earning workers.

In Sub-Saharan Africa it has been shown by services like M-Pesa that there are successful applications of fintech services on a mobile platform, but this is also changing with successful integration of fintech mobile services with traditional banking systems, such as the success of M-Shwari (Alexander A, 2017).

The vast majority of South Africa's low-income population relies on informal financial mechanisms, where as much as 68% have no access to conventional bank services (Mills,

2011). The improvement of technology and telecommunications may have the ability to make financial transactions more accessible and affordable for unbanked and underserved farmers in rural areas (Minto-Coy & McNaughton, 2016). In this context, mobile money is viewed as a poverty alleviation and community development mechanism designed to provide financial services and credit to rural farming communities. Mobile money influences welfare in a number of aspects. These include healthcare, nutrition, and education expenditures, as well as assets (Oteng, 2019).

According to Senwes, the process of commercialising smallholder agricultural operations is lengthy (Kloppers and Fourie, 2014). However, Kirui et al. (2013, cited in Oteng, 2019), used an organic method to study M-Pesa use in Kenya discovering that mobile payment boosts commercialisation by 37%, compared to farmers who do not use it at all. Farmers aren't the only ones who could stand to gain from the convenience of mobile money. Cooperatives, agri-dealerships, and other non-agricultural sectors all stand to gain from the simplicity with which customers can make purchases, bill payments, insurance premium payments, and other financial transactions (Dlamini, 2020).

2.3 Successes of fintech in Sub-Saharan Africa

The poor and working-class citizens' needs will have to be the key focus if we hope to improve financial inclusion in the market when using fintech innovations, because these citizens day-to-day banking are often improvised, volatile and complex (McCcaffrey & Schiff, 2017).

According to Gjino and Ilollari (2012) and Mariotto and Ver Dier (2015), from the client's perspective there are a number of advantages to fintech solutions such as virtual banks. Unlike a bank's customer service counter, these channels are accessible around the clock. Now that a bank can be reached using nothing more than a single click, standing in line has become a thing of the past. Customers may manage their accounts and funds instantaneously regardless of where they are, albeit in another city, or even a different nation. Online banking transactions are processed faster than those conducted at a teller's desk. However, this may pose as a challenge when dealing with the rural demographic.

Fintech products must be designed to be low cost and simple to use on the internet on any mobile device. These products also need a reliable electrical grid that can permit a large number of users to connect to any internet-based service. Most developing countries have objectives to reduce poverty, and the goal of financial services on a mobile platform must always contribute to that reduction. It is imperative that these systems are properly designed

and implemented in order to achieve that, because poorly designed and difficult to use systems can exacerbate financial inequality if left unresolved (McCcaffrey & Schiff, 2017).

Because of the unique nature of the technology and the impact it has on its users, there must be regulation for fintech in place, and Didenko (2018) lists four motivations for this:

1. market incumbents are heavily threatened by new technology;
2. unsophisticated customers with access to new financial services;
3. the rise of new platforms is growing at a rapid pace; and
4. The anonymous use of services disrupting market oversight (Yermack, 2018).

It is noted in this same paper that the use of fintech services on the African content is extremely popular because traditional banks have found it difficult to do business in many of these markets, and have thus found it unprofitable to either continue or to enter, where it likewise also noted that there are not any fintech disaster stories out there that can curb the population's enthusiasm for these types of products, which constitutes very good news for new market entrants (Yermack, 2018).

Financially inclusive services that have been developed in various parts of Africa are discussed below.

TymeBank

TymeDigital, a South African financial institution owned by the Commonwealth Bank of Australia, enables its clients to use their cell phones to access their bank accounts. In 2017, the South African Reserve Bank authorised TymeDigital to form a banking partnership with the recently publicised investment firm African Rainbow Capital (Camarate and Brinckmann, 2017). The two companies state their aim as innovating in the South African banking system by increasing access to credit for the country's majority-African population and for firms that have been shut out of the market in the past (Camarate and Brinckmann, 2017).

TymeBank, an entirely digital South African FSP that focuses on serving low-income clients in rural areas, has developed a set of core products, including a low-cost transactional account and a savings account with a high interest rate, to meet the fundamental financial requirements of its target demographic. The popularity of these items and the positive feedback they have received from consumers suggest that they provide an attractive value proposition (Jenik, 2022)

M-Pesa

The Kenyan SMS-based money transmission system known as M-Pesa, in which M stands for Mobile and Pesa, meaning money, is borrowed from Kiswahili, is an example of mobile money adoption in Africa. This system was introduced by the telecommunications company Safaricom in March 2007 (Bengelstorff, 2015 as cited in Chigada & Hirschfelder, 2017). M-Pesa enables individuals to deposit, save, transmit, and withdraw funds via their mobile phones by using their cell phones as a virtual bank account number. M-Pesa supports the movement of funds without the need to be present at the bank. Given that the majority of Kenya's population consists of farmers who reside in rural areas and are forced to travel lengthy distances to the closest bank, the possibilities for moving currency are uncertain and risky (Chigada & Hirschfelder, 2017).

EcoCash

EcoCash, offered by Econet, is a simple, swift, and safe way to send money from one mobile phone to another through a network of over a thousand agents in Zimbabwe (Kabanda et al., 2013). Munyoro et al. (2017) extensively explains EcoCash not being a bank in the traditional sense (it does not pay interest on deposits or issue loans); however, it does provide similar products. Customers can deposit funds at any EcoCash location, so long as they have an Econet SIM card registered on their cell phone. A valid Econet application and government-issued identification is required in order to set up the service. Due to the USSD-based nature of the EcoCash mobile money service, customers are not required to change their SIM cards (Kabanda et al., 2013).

Econet issues a commodity referred to as ‘efloat’. What this ‘efloat’ entails is a product that is held in a particular customer’s or user’s name and profile, but it is expressed on the system in a form that shows the equivalent value in a monetary value, and in doing so, a person that uses ‘efloat’ can pay for various items, including but not limited to products, services, utilities, transportation, debts, and wages and these are all transferred withing Zimbabwe (Munyoro et al., 2017).

MTN Mobile Money

MTN Mobile Money (MM) has a massive client base and the most extensive network of mobile money agents, making it the leading supplier of mobile money services. There are around six million regular users and over 75,000 agents. Subscribers may do more than just receive and transfer money; they can also pay bills, premiums, wages, and even buy MTN stock. MTN introduced the first mobile money deposit accounts that generated interest in 2017. Users of MTN may use their MM wallets to save money and receive interest on those funds (Oteng, 2019).

2.4 Cybersecurity and KYC regulations in fintech

Cybersecurity, as defined by Huawei, is the practice of safeguarding information systems, networks, programmes, and data against illicit access or manipulation. The scope and complexity of cybersecurity concerns several industries. In an ideal world, the mobile money industry's standard knowledge would revolve around protecting the networks, devices, and information they store (Matanda, 2020). According to Mogaji and Nguyen (2022), spam, phishing, denial-of-service attacks, security breaches, digital intellectual property violations, and click fraud all form part of the technological underworld of the internet. Theft of digital assets, including personal information, money, and identification, constitutes a major problem in today's connected world.

Ali et al. (2020) explain that phishing is an attempt to trick mobile money users and agents into divulging sensitive information, such as mobile money PINs, via electronic means. An attacker initiates a phishing attack by monitoring communications between a mobile money customer or agent, where the server hosts the application for such user's usage. The individual who sent the message is made to appear to be the mobile money service provider. Alternatively, attackers can launch a denial of service (DoS) against a mobile money server by flooding it with bogus traffic, preventing real users from using the service. A distributed denial of service (DDoS) attack, on the other hand, refers to an assault in which attackers flood the mobile money server with traffic from several directions, making it difficult to halt the assaults.

Preventative actions in cybersecurity includes that only registered users ought to be able to make mobile fintech payments, where the same stands for any data that was traded as a condition for the payment. Fingerprint and iris detection, two examples of biometric authentication, are increasingly employed to verify the identities of users (Kang, 2018). Ali et

al. (2020) suggests the use of multi-factor authentication (MFA), described as an approach by which an access the sender asks an authenticating party to verify their identity using a combination of factors, including knowledge, possession, and biometrics, in order to gain access. Due to the fact that biometric verification is not fool proof, it is recommended to supplement biometric verification with a one-time password (OTP) (He et al., 2015). Additionally, payment information must be transmitted in an encrypted manner that is separated by its intended use and level of sensitivity, where beneficiaries of payments must be unable to deduce any information about the transaction beyond the minimum required (Kang, 2018).

Client identification, documentation, detection and disclosure of fraudulent activities, and education are the four globally recognised aspects of client due diligence (Chitimira & Munedzi, 2023). Financial service providers and other authorised companies are required by law to do "know-your-customer" (KYC) due diligence in order to verify the identity of their customers and collect data that is necessary to transact monetary transactions with them (Rajput, 2013). Financial services providers typically use client due diligence techniques to prevent losses from activities like fraud, money laundering, pyramid schemes, and terrorist financing. (Chitimira & Munedzi, 2023). A significant part of KYC controls goes beyond simple name identification to include comparing a client's activity on their account(s) with their user profile information, and the activity of those around them (Rajput, 2013). The legislation known as the Financial Intelligence Centre Act (FICA) implemented client due diligence requirements into South Africa's anti-money-laundering (AML) laws and regulations (Chitimira & Munedzi, 2023).

2.5 Solutions for infrastructure inaccessibility to fintech services

Over 3.5 billion people have access to the internet through mobile devices, although over 10% of the world's population does not have access to mobile broadband. Up to 40% of the world's population does not have access to 3G connection; this proportion, also known as the coverage gap, is especially pronounced in rural and isolated locations in Sub-Saharan Africa and South Asia (Galán-Jiménez et al., 2021). What the developing countries are struggling with is the sustainable access to suitable infrastructure, for example the national power grid, one cannot use a smartphone and its services without access to a reliable network that is constantly connected to said power grid (Yermack, 2018).

Some examples of these solutions are discussed below:

USSD (Unstructured Supplementary Service Data)

Taking advantage of the existing USSD system and similar services, it is feasible to do business between disconnected communities regardless of their exposure to the internet. USSD is a protocol for exchanging communications between a mobile phone and network-based programmes. In Global Systems for Mobile Communication (GSM) networks, it serves a purpose identical to that of a short message service (SMS), in the sense that information is transmitted over the communication channel ((Kabanda et al., 2013). The most distinguishing feature of USSD is that it does not rely on voice channels to connect the service and the subscriber terminal. A standard USSD message begins with an asterisk (*), followed by a series of numbers (often between 0-9) that represents either a command or data and a number symbol (#) denotes the end of the message (Kabanda et al., 2013).

Unmanned aerial vehicles and renewable energy alternatives

An innovative model for mobile networks, unmanned aerial vehicles (UAVs) that can carry a base station to offer mobile service over terrain, have been recently suggested by researchers. Given that coverage may be tailored to specific places and times, UAV-based mobile networks offer greater geographical and temporal flexibility than fixed-based infrastructure (Galán-Jiménez et al., 2021). Aerial base stations (ABs or AirBSs), as UAV BSs are commonly referred as, are more cost-effective than their terrestrial counterparts to maintain. AirBSs operate using batteries, however their performance varies depending on the UAV's elevation and the type of UAV being used (Rolly et al., 2022). Thus, viable UAV-based cellular networks capable of delivering connectivity to rural and low-income regions may be recommended by making use of the ideal placement of a set of solar panels at specific sites (Galán-Jiménez et al., 2021). Huang et al. (2020) assert that unmanned aerial vehicles (UAVs) are seen as a potentially game-changing tool for the evolution of internet connectivity in the future.

Considering outages and interruptions in service are not responded to in the cellular mobile industry, the economic, environmental, and social sustainability of electrical supply is an especially significant barrier. Technological developments in renewable energy can meet the needs of base stations for electricity in terms of affordability, effectiveness, ecological sustainability, and dependability (Alsharif et al., 2017). In remote locations without access to a reliable electric grid and in developed countries plagued by frequent blackouts, cellular base

stations (BSs) powered by renewable energy present a viable long-term option for the telecoms industry (Alsharif et al., 2017; Huang et al., 2020).

2.6 Conclusion

As established, the use of FinTech is growing on a global scale, and these services benefit those that do not have sufficient access to the traditional means of banking. These are usually the individuals that live in hard-to-reach geographical areas, are low-income, and have less education than those living in urban areas. Fortunately, fintech products, like mobile money applications, have revolutionised the financial landscape by providing innovative solutions to traditional banking services. Mobile Money allows users to perform financial transactions through their mobile devices, enabling access to banking services without the need for a traditional bank account. These advancements are particularly advantageous for agricultural and rural communities as they offer accessible, secure, and convenient financial services, empowering individuals in these communities to have a sense of control over their finances.

Robust cybersecurity measures, customer due diligence, and infrastructure development build further trust in the mobile money ecosystem. In turn, this will reduce barriers to financial inclusion for said communities. We can pave the way for financial inclusion and economic progress, ensuring agricultural and rural communities thrive and flourish in the digital age. This paper establishes that there is a market for the use of the proposed platform, where the remainder of the paper will explore methods for scaling my product in an efficient and profitable manner.

3. Research Design and Data Collection Methodology

3.1 Introduction

This chapter explains the methodology used during the business venture proposal research project. This chapter followed a thorough description and motivation of what the research design is for the pending research, it will identify the population of the project as well as what is going to be uses as the sample. The section then outlines the data analysis methods, processes, and limitations.

3.2 Procedures and Survey Method Used

A qualitative research method was chosen for this research as it is more focused on the samples that were interviewed, and how these people experience different factors in their lives (Hignett, 2011, Robson, 2011). The key points of defining this methodology are:

- non-numerical: there is usually very little use of numbers and figures to derive data from qualitative research (Hignett, 2011, Robson, 2011),
- scale: more individual focused with an idiographic mode of interviewing (Hignett, 2011, Robson, 2011),
- sampling: slowly develops during the study (Hignett, 2011, Robson, 2011),
- Iterative data collection and analysis: the details are not fixed, and the focus of the study can change during the study (Hignett, 2011, Robson, 2011),
- context: the participants are allowed to describe their situations (Hignett, 2011, Robson, 2011); and
- influence of the researcher: the interviewer is not objective in the process and reflects on interactions during the process (Hignett, 2011, Robson, 2011).

Due to the nature of the product, i.e., being designed to improve the financial situation of minimum wage earners and to create a product that is easy to use with little to no education, it proves to be what customers or potential users, being human centric in its aim to meet the need in their lives to indeed improve their financial situation. As the title of the research suggests, the participants interviewed will guide the evolution of this process and business venture and the qualitative research method allows for such evolution to take place during the process which is the advantage of using the qualitative design approach.

3.3 Data Collection Methodology

The research approach in this business venture proposal will attempt to verify the feasibility of this project, noting how it can be scaled from a start-up business into a viable business that can be profitable and sustainable for the future.

The data collection was done by conducting twenty-five face-to-face interviews with candidates from two categories namely:

1. farm owners,
2. farm workers.

This demographic essentially makes up the entire research of the business venture, as this constitutes the entire customer base of the product. The interviews were all semi-structured and the questions were left open-ended so that the interviewee had the opportunity to elaborate on the questions if it was deemed necessary by them, where enough structure was held firm in order to ease the collection of data of the potential users. The interviews were conducted face-to-face, and due to this synchronous communication, the interviewer can take advantage of the social cues from the participants, such as tone of voice, body language, etc., where extra information can be obtained from such verbal answers (Opdenakker, 2006).

All farm workers however were happy to provide consent to be recorded as this research has a potential to put them in a better financial position in the future and their contributions may ease this process in the future.

3.4 Sampling Method

Sampling methods can usually be divided into two groups, namely:

- random or probability sampling,
- non-random or non-probability sampling (Taherdoost, 2016).

However, before choosing either of these two sampling techniques, there are also a broad range of sampling techniques within the two groups that needs to be considered before one can choose either one, as seen below in the Figure (Taherdoost, 2016).

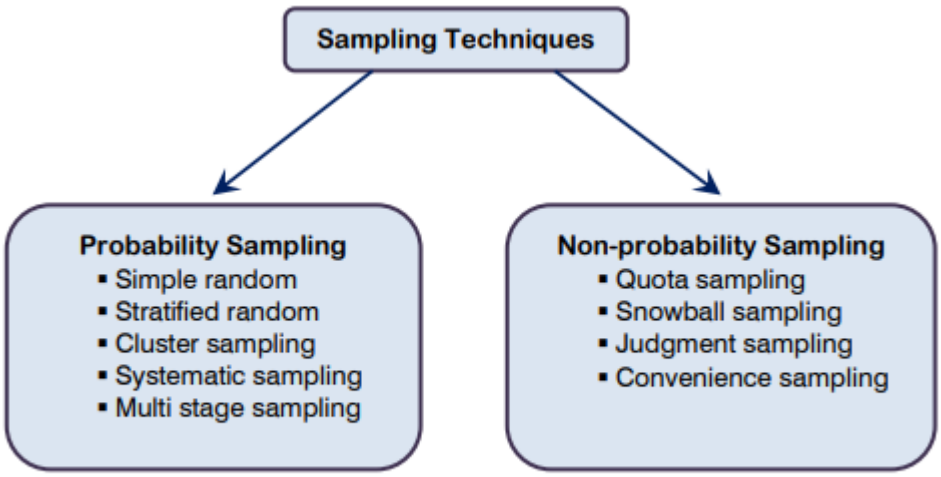


FIGURE I2: SAMPLING TECHNIQUES

Figure 1: (Taherdoost, 2016, p. 4).

For this research, quota sampling was the preferred method, due to the fact the this is a non-random sampling technique, because the participants were chosen on a predetermined characteristic. In this case these were minimum wage-earning farm workers, and this total sample will have a very similar distribution of characteristics and results as a wider population would have (Taherdoost, 2016).

Due to the fact that quota sampling was a preferred method of sampling, where the study took on a non-probability sampling approach for this project. As this sampling technique is usually associated with qualitative research, such studies focus on a small group sample and the research is done towards real life problems or issues, and not for the statistical data inferred on a larger population (Taherdoost, 2016).

It was important to note that all the sampling techniques are not equal, and all sampling techniques have strengths and weaknesses, as illustrated below:

TABLE 1: STRENGTHS AND WEAKNESSES OF SAMPLING TECHNIQUES

SOURCE: (MALHOTRA AND BIRKS, 2006)

Technique	Strengths	Weaknesses
Convenience sampling	Least expensive, least time-consuming, most convenient	Selection bias, sample not representative, not recommended by descriptive or casual research
Judgment sampling	Low-cost, convenient, not time-consuming, ideal for exploratory research design	Does not allow generalization, subjective
Quota sampling	Sample can be controlled for certain characteristics	Selection bias, no assurance
Snowball sampling	Can estimate rare characteristics	Time-consuming
Simple random sampling	Easily understood, results projectable	Difficult to construct sampling frame, expensive, lower precision, no assurance of representativeness
Systematic sampling	Can increase representativeness, easier to implement than simple random sampling, sampling frame not always necessary	Can decrease representativeness
Stratified sampling	Includes all important sub-population, precision	Difficult to select relevant stratification variables, not feasible to stratify on many variables, expensive
Cluster sampling	Easy to implement, cost-effective	Imprecise, difficult to compute an interpret results

Table 1: (Taherdoost, 2016, page p. 5).

When taking the table above into consideration, it is apparent that the strength of the research sampling method chosen is that the sample can be controlled for certain characteristics, where in the case of this study, the sample population were all in the same demographic group of minimum wage-earning farm workers (Taherdoost, 2016).

The weakness of the sampling method was the lack of assurance and selection bias (Taherdoost, 2016). To mitigate against this, further research was conducted, and the issue discussed further later in this document.

For this research paper, there were two samples:

- farm workers earning minimum wage; and
- farm owners.

The techniques, methods and data collection were attempted in the following sections after the method and the sampling population were identified and brought together to do the data collection.

3.4.1 Interview technique

The interview technique used in the research was a pre-determined set of questions with varying degrees of answerability, populated into an Excel spreadsheet, which was conducted by doing face-to-face interviews. The data collected on the Excel spreadsheet as well as notes taken during the interview process, was then transcribed into a Word document. After the process was completed, the data was then captured on Atlas TI software for analysis.

By doing face-to-face in-person interviews, there is not a significant time delay in the answers being given after a question was asked, and this allows the interviewer and the participant to directly act on what was asked and answered (Opdenakker, 2006). This presented a good way to identify the true reactions of the participants.

3.4.2 Advantages of the interview technique

Interviews and questionnaires are most often used when collecting qualitative data, and interviews are often more powerful than questionnaires as this elicits narrative data, which the researcher or interviewer can use with a lot more depth when interpreting the people that was interviewed, and their answers (Alshenqeeti, 2014) Cohen *et al* (2007: 29) note in this regard that an interview is “a valuable method for exploring the construction and negotiation of meanings in a natural setting” (Alshenqeeti, 2014).

The advantage of this synchronous way of communication with the participant is that the answers given are more spontaneous, and usually occurs without an extended reflection from the participant (Opdenakker, 2006). A downside to this synchronous way of communication. Is that the interviewer has to concentrate a lot on the questions asked and then meticulously note the answers in order to provide a true reflection of what is happening in front of him (Opdenakker, 2006). To mitigate this, the interviewer can undertake a recording of the interview whilst also taking notes from the dialogue taking place, where in this way, the interviewer can go back on the recording and ensure that the correct information is taken down (Opdenakker, 2006).

Table 1. Advantages and disadvantages of interviewing

Advantages	Disadvantages
high return rate	time-consuming
ewer incomplete answers	small scale study
can involve reality	never 100% anonymous
controlled answering order	potential for subconscious bias
relatively flexible	potential inconsistencies

Table 2: (Alshenqeeti, 2014, p. 43).

As seen above, Robson (2002: 94) have criticised that interviews take a lot of time because they have to be transcribed, then coded, and may also require a translation, but as Robson has stated, even though interviews provide powerful insight into perceptions by the interviewees, this method can also be used in conjunction with other techniques (Alshenqeeti, 2014).

The face-to-face interview technique does have disadvantages, the synchronous way of communication can be difficult due to time and place constraints such as the participants being far away from the interviewer, so the interviewer must drive and take time to conduct interviews, and this can take the whole day (Opdenakker, 2006). Another issue can be that on the day of doing the travelling and interviewing, some of the candidates are sick and not at work, and so you will have to reschedule the interviews to take place at a different date (Opdenakker, 2006).

In an attempt to do thorough research of the viability of this model, the above was taken into account to ensure that the interview process went as smooth as possible. The farm owners were notified in advance of the interviews and requested that all participants be made available for the process, this helped in booking the day trip and doing the interviews, travelling and using the day productively to get what was needed out of the participants. Notes were taken down as well as a recording to ensure that any information that may have been missed on the notes could be double checked when analysing the data form the interviews.

Enough quality data was retrieved from the participants interviewed for this particular venture, and data analysis completed using Atlas.Ti software.

3.4.3 Validity and reliability

In 1981, Guba and Lincoln argued that there must be “neutrality”, “consistency”, “applicability”, and “truth value” present in all research, so that it may be considered worthwhile, where the nature of the knowledge within quantitative research differs from that of qualitative research (Morse et al., 2002). Guba and Lincoln (1985) confirmed that the criteria for qualitative research is to ensure its trustworthiness is “credibility”, “transferability”, “dependability”, and “confirmability”, and that the interviewer needs to be adaptable to changing circumstances, be sensitive and have the ability to clarify his/her summations (Morse et al., 2002).

Keeping the above in mind, after identifying that a qualitative research approach will be used to interview participants, the interviewer must ensure to take the nature of qualitative research into account when conducting the interviews.

Verification in qualitative research is highly important, and this refers to the mechanisms that is used during the process of doing research to continuously contribute to ensuring that reliability and validity of the study, and that forms part of the ‘rigour’ of the study, and these mechanisms are carefully built in to every step of the research process to create a solid product (Morse et al., 2002).(The most important factor in ensuring your product is solid and valid is by identifying the errors within the study, and then correcting them before they are built in to the model that is being developed through the research (Morse et al., 2002).

To ensure that verification is adequately documented, and the validity and reliability of the research is enforced, the following strategies can be applied:

- methodological coherence – ensure consistency between the research question and the contents of the research method;
- the sample must be appropriate – it must consist of candidates that represent actual knowledge of the research question;
- and collecting and analysing data simultaneously – which forms an agreed action between what is known and what needs to be known by the interviewer; and
- theoretical thinking – different ideas that rises out of the data can be re-configured into new data, which creates new ideas that in turn can be verified and collected (Morse et al., 2002).

It is often the case that qualitative research is criticised on the following aspects:

- lacking the scientific rigour with justifications that is poor in the methods often adopted;

- there is often a lack of transparency in the analytical procedures; and
- findings that are usually merely the formulation of personal opinions are often subjected to bias from the researcher (Noble & Smith, 2015).

Table 1: Terminology and criteria used to evaluate the credibility of research findings

Quantitative research terminology & application to qualitative research[4]	Alternative terminology associated with credibility of qualitative research[5]
Validity The precision in which the findings accurately reflect the data.	*Truth value* Recognises that multiple realities exist; the researchers' outline personal experiences and viewpoints that may have resulted in methodological bias; clearly and accurately presents participants' perspectives.
Reliability The consistency of the analytical procedures, including accounting for personal and research method biases that may have influenced the findings.	*Consistency* Relates to the 'trustworthiness' by which the methods have been undertaken and is dependent on the researcher maintaining a 'decision-trail'; i.e. the researcher's decisions are clear and transparent. Ultimately an independent researcher should be able arrive at similar or comparable findings. *Neutrality (or confirmability)* Achieved when truth value, consistency and applicability have been addressed. Centres on acknowledging the complexity of prolonged engagement with participants and that the methods undertaken and findings are intrinsically linked to the researchers' philosophical position, experiences and perspectives. These should be accounted for and differentiated from participants' accounts.
Generalisability The transferability of the findings to other settings and applicability in other contexts.	*Applicability* Consideration is given to whether findings can be applied to other contexts, settings or groups.

Table 3: (Noble & Smith, 2015, p. 2).

Table 3 above outlines the terminology that is used to clearly define and justify the validity of research when using the qualitative model, with “truth value”, “consistency”, “neutrality”, and “applicability” being the key factors (Original Citation Noble & Smith, 2015).

Table 4 have shown the specific examples of how the above-mentioned strategies provided by Morse et. al (2002) can be utilised in order to ensure that the study being conducted has enough rigour to be deemed reliable.

Table 2: Strategies for enhancing the credibility of qualitative research

Truth value	• Reflexivity and reflection on own perspectives: - Reflective journal maintained and decisions documented - Peer debriefing to assist the researcher to uncover taken for granted biases, or assumptions, for example the initial qualitative interviews with patients were medically focused and subsequent interviews took a more holistic approach. • Representativeness of the findings in relation to the phenomena: - The sample of 19 carers of patients managed in a renal supportive care service and a willingness to share their experiences in depth and over time enabled clarification of findings as an ongoing process; - Semi-structured audio-recorded interviews allow for repeated revisiting of the data to check emerging themes and remain true to participants' accounts of caring for patients with renal disease managed without dialysis; - Use of rich and thick verbatim extracts from carers of patients managed without dialysis assists the reader to make judgements about whether the final themes are true to participants' accounts; - Participants invited to comment on the research findings and themes
Consistency/ *Neutrality*	• Achieving auditability: - Transparent and clear description of the research process from initial outline, through the development of the methods and reporting of findings. In addition maintaining a research diary documenting challenges and issues assisted in maintaining cohesion between the study's aim, design and methods; - Emerging themes discussed with research team members who had palliative and qualitative research expertise in an open process where assumptions could be challenged and consensus reached.
Applicability	• Application of findings to others contexts: - Rich detail of context, the renal setting, including the patients managed within the service, facilitates the evaluation of study conclusions and transferability to other renal units.

Table 4: (Noble & Smith, 2015, p. 3).

What Table 4 has summarised is the fact that it is extremely important that qualitative researchers incorporate these various strategies into their models to ensure and to enhance the credibility of the study during design and implementation phases (Noble & Smith, 2015).

It is evident that it was really important for this study to conduct qualitative research correctly and ensure that the strategies have been efficiently implemented by the interviewer. It is important that no bias occurs whilst interviewing, and that the interviewers have decent knowledge of the body of work, as well as the instrument used so that the necessary changes and pivoting can be adequately managed if and when it occurs.

3.5 Population Sample

The population sample for the venture consists of two groups in South Africa:

- Farm Owners - In South Africa, the agricultural sector is highly developed, diverse, productive and modern, with some of the best farmers in the world, with around 32 000 commercial farmers in South Africa and within that group around 12 000 farmers produce roughly 80% of the countries agriculture output with the sector's output earnings amounted to $12 billion in 2022 (South Africa's agricultural statistics 2022 - Frenchside, 2022).

- Farm workers – in Q4 of 2023 it was estimated that the South African agriculture sector employed 929 000 people across the industry, with majority being farm workers, according to Statista.com (Cowling, 2024).

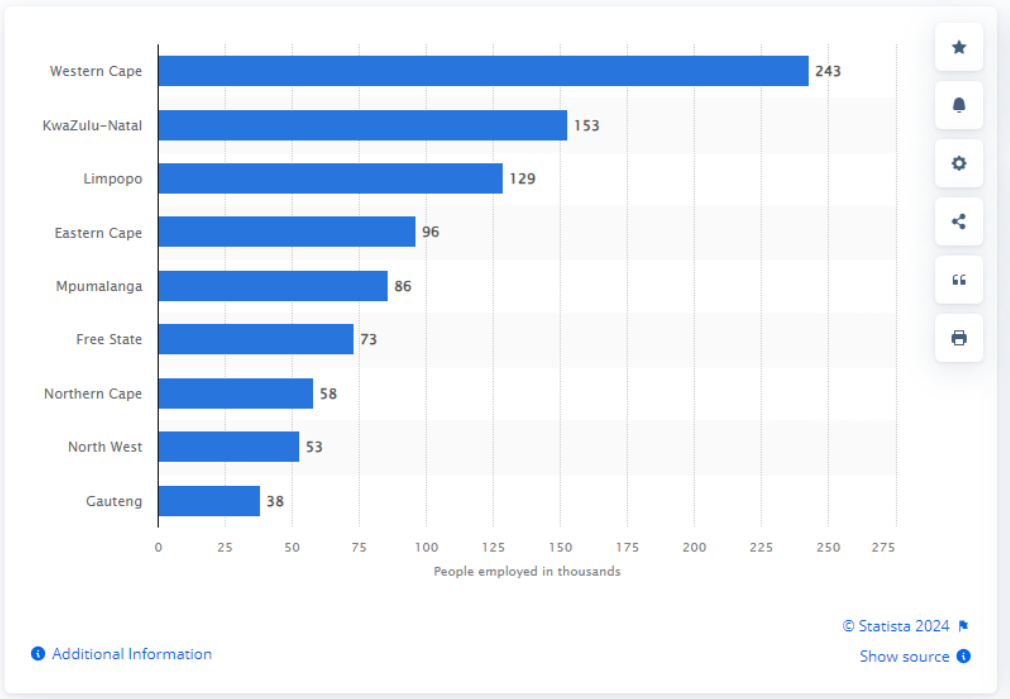


Figure 2: Workers employed by region, Q4 of 2023 (Cowling, 2024, p. 1).

The sample for this research, which is the candidates that were interviewed consisted of:

- 20 farm workers, and
- 5 farm owners.

This sample is very small compared to the population sample available in the entire country, but using a well-constructed qualitative research analysis, where the candidates interviewed delivered sufficient results to continue the research of a viable business model.

The farm owners were five owners of commercial farms on the border of Limpopo and Mpumalanga, between the towns of Burgersfort and Lydenburg. The farmers owned farms of various sizes and employed large and small groups of workers. The farmers interviewed produced mostly citrus fruits, maize crops, soya beans and various livestock.

The farm workers were all workers of various ages working on the five farms respectively, each having different work and working with different produce over the five farms. What all of them had in common were the fact that they are all minimum wage earners, and they were interviewed accordingly.

3.6 Research Ethics

In this particular research case, the issue around a person's income and earnings and where they associate themselves on the social scale is a sensitive topic, where people tend to be private about their income, The basis of this study is to find ways around assisting people earning minimum wage. It was therefore essential that the candidates' identities remained confidential at all times to ensure that they have the freedom to speak freely about their incomes and social situations.

The researcher in this case is a business owner and is educated in the basis of ethics and ethical behaviour, as well as having knowledge of how to behave in an ethical manner when conducting research where 3rd parties are involved as a source of information. Ethical principles were put to use during this study.

In this study, all the ethical principles and obligations were taken into account and used by the researcher throughout, in this particular case, the researcher explained all the risks, procedures and steps involved in being part of this study, before having them sign the research consent forms (Creswell, 2017).

All participants in this study were free to choose not to participate in the study and to not be interviewed or questioned. The purpose of the study and the use of the answers obtained was explained in detail in order for them to make an informed decision regarding whether or not to participate.

The researcher of this study ensured the privacy of the participants by numbering them from Respondent 1 to Respondent 20 and Respondent 1 to Respondent 5 for the farm workers and farm owners respectively, which was done to ensure anonymity and the data that was collected in the study was only shared with the research supervisor on this research study in order to ensure confidentiality throughout (Creswell, 2017).

Ethical clearance and acceptance of the interview questionnaire for both farm workers and farm owners were obtained from the relevant respective authorities, namely Wits University.

4. Research results and interpretation

This chapter presents the findings of the interviews held with minimum wage-earning farm workers as well as the farm owners where the various workers are currently employed. The data from the twenty farm workers and the five farm owners were analysed separately in the two categories, but each category was analysed as one, respectively. The organisation of this chapter is as follows: the demographics of the interviewees, findings on the interviewees' answers, the different themes expressed through the interview process, followed by the data being presented.

4.1 Interview biographic information

Twenty-five interviews were conducted in total with face-to-face questions being asked to the participants. All interviews were conducted on five farms on the border of Mpumalanga and Limpopo outside the towns of Burgersfort and Lydenburg, respectively. Interviews were conducted on site at their workplace and sufficient time was provided in order to conduct the interviews as sufficiently as possible. The data was coded and analysed in Atlas.ti and the codebook are presented in appendices B and C.

The study found that the South-African minimum wage farm worker demographic is dominated mostly by males, due to various reasons such as the physical demand on the human body of agricultural work in South Africa, where manual labour tends to be undertaken more by men than women. On the day that the interviews were scheduled, no females were present in my

designated area to interview. This is not a major hurdle in the findings, rather a true reflection of the situation, and some of the questions are based on the breadwinner of the family sending money across provincial borders to their loved ones.

All interviewees were found to own a smartphone or have access to a smartphone and all participants were acutely aware of the fact that mobile data is being used when working on a smartphone with application abilities, this was a positive finding, as the basis of the business model is to use a smartphone and having access to mobile data. It was also found in this study that most of the participants reasoned more or less in the same manner, irrespective of the age difference, which in this study was found to be significant with as much as 30 years difference in age between the youngest and oldest participant.

4.2 Presentation of the interview findings

The data presented in this section was gathered through the twenty-five interviews and the aim of the presentation of the data is to answer the five research questions driving this study, namely:

1. a way to practically implement a fintech solution for both farmer and worker;
2. a use of simple technology for everyone that is both easy and secure;
3. a way to use the fintech service on a mobile platform;
4. the possibility of doing away with physical money changing hands; and
5. perform a viability test of the technology in the agriculture sector which is dominated by uneducated and unskilled works.

4.3 Themes across findings

In this section, the themes that were identified through the interview process are investigated and analysed in order to find cohesion through the study as to what the potential customer base need in their daily lives. Identifying the potential customer need is the basis of feasibility for this business venture and critically analysing the themes, the research questions were answered, and a potential business model built around these findings. Participants are cited verbatim.

Theme 1: Saving money
Theme 2: Cost consciousness
Theme 3: Providing for loved ones
Theme 4: Free mobile data

Theme 5: Going mobile

Theme 1: Saving Money

Throughout the interviews, saving money was a key factor for all participants, finding the most practical way to implement a fintech Solution will simultaneously create a cheaper or more cost effective system and that saving can be pushed over to the user. On the interview question relating to an application that uses no or little data some of the participants responded:

"Yes, that will be great because we will be able to save enough money".
– **2FW41M.**

"Yes, that will help many people to save".
– **7FW49M.**

"Yes, that will help us to save money because there will be no need to buy additional data".
- **14FW46M.**

"Yes, that will help me to save, and I will be able to send enough cash to my loved ones".
- **2FW41M.**

"Depending on what is the cheaper option".
– **1FO33MW.**

"Yes, if it is reasonable".
– **2FO66MW.**

Saving money was thus of paramount importance to the respondents.

Theme 2: Cost consciousness

All participants were cost conscious and were aware of all areas where they are spending money and how they will choose any option as long as they can save money. All participants are also aware that by saving money they have more money available to send to their loved ones. A practical fintech solution will be one that is costing them less than traditional banking.

"Yes, only if it is cheaper to use".

– **16FW33M.**

"Yes, only if it is going to be cheaper".

– **17FW31M.**

"Yes, I will be able to save money every month".

– **6FW30M.**

"Yes, I won't stress about data anymore".

– **18FW24M.**

"R30.00, if this app charges me R30.00 per month that means I will be saving R220.00, which I can use as an investment".

– **20FW45M.**

"Yes, because data is too expensive, I can't afford to pay for data every month".

– **1FW29M.**

"Yes, if it is market related".

– **3FO54MW.**

"Yes, within means".

– **4FO45MW.**

Theme 3: Providing for family

All participants have family that are not staying with them or close to them, and this means that all workers are working away from their home, or they are supporting more than one family. Being able to easily send money across provincial or country borders is important to all participants, and they want to be able to do that without going into a branch of a traditional bank.

"Yes, that money that I use to buy data will be save for my kid's future".

– **19FW33M.**

"Yes, I am the only one working in my family and I have to provide for their needs".

– **8FW41M.**

"Yes, that will help me to save, and I will be ablet to send enough cash to my loved ones".

– **2FW41M.**

"Yes, I work so hard so that I can provide for my family".

– **10FW36M.**

Theme 4: Free Mobile Data

Building a fintech product that uses little to zero mobile data will be extremely valuable for the participants of this study. Being minimum wage earners in a country with high mobile data costs such as South Africa, they cannot afford the luxury of data as that money usually goes to some other necessity. With this business model, it will be imperative that buying mobile data is not an issue nor required to use the application.

"Yes, no one can say no to free data".

– **16FW33M.**

"Yes, I won't stress about data anymore".

– **18FW24M.**

"Yes, that will help us save money because there will be no need to buy data".

– **14FW46M.**

"Yes, that will help us to save in data while using the app".

– **20FW45M.**

Theme 5: Going mobile

To successfully execute the business model, getting the participants to go mobile is the most important factor in having a viable business. As noted from the interviews, this will be achieved by doing two things, namely providing the application and being able to use it without using mobile data, and providing the opportunity for everyone to go cashless. This theme explores the participants who advocate for the cashless option.

"Yes, that will decrease the levels of theft".

– **8FW41M.**

"Yes, this will help to avoid standing in a long queue".

– **9FW38M.**

"Yes, that will help us to avoid going into the banks to get cash".

– **15FW45M.**

"Yes, the level of crime will decrease because we won't be walking around with money".

– **12FW36M.**

"Yes, I will stop carrying around cards".

– **16FW33M.**

"Yes, that will help a lot".

– **5FO38MW.**

Yes, of course".

– **4FO45MW.**

"Yes, it would be attractive".

– **1FO33MW.**

The data compiled by interviewing the relevant parties to the study gave valuable feedback on the key factors that would make the business model viable. All the compiled data were used in compiling Section 5 of the study to investigate the viability of the business in its current model, and all additions and recommendations were followed regarding the use of data compiled by the interviews.

4.4 Graphs of the interview results

In this section, the research and data analysis are shown in graph form to illustrate the dominating factors that apply to the individuals that were interviewed. These statistics were put to use in formulating the viability section of the business venture model.

Interview graph of farm workers

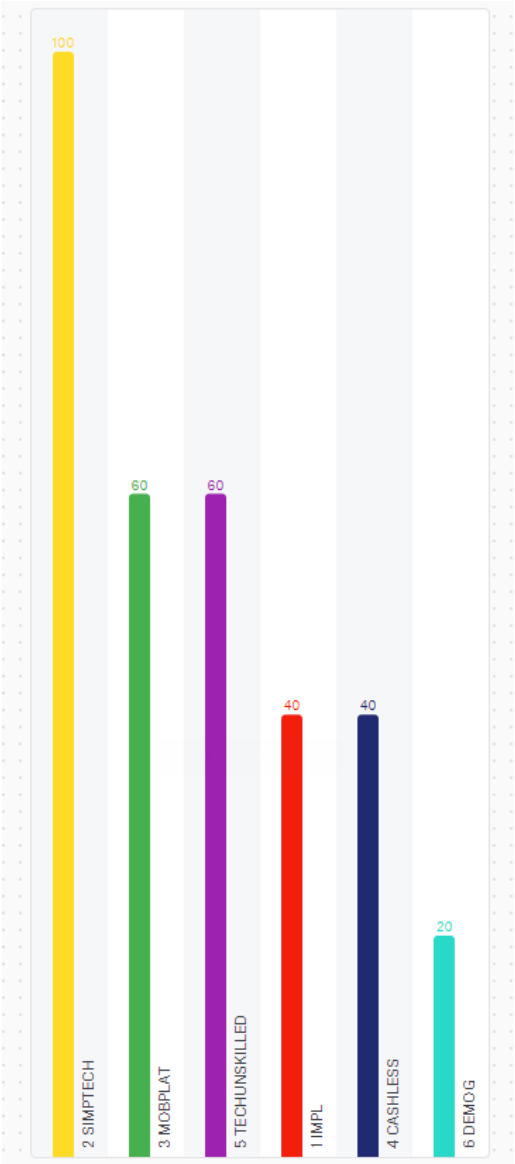


Figure 3: Atlas.ti Farm worker questionnaire data.

In this graph the three main areas for the business model viability can be identified, namely:

1. Simplified technology – users want to benefit from technology that is available to them but that is also simple to use even if the user is uneducated;

2. Mobile platform – users want to have a platform that is more mobile, which they can use whenever it is convenient and that removes the need for an individual to go into a physical brick and mortar building;
3. Technology unskilled – Again, the users confirmed that if the business is to be viable, it needs to be user friendly so that uneducated people can also use the application with the same convenience.

Interview graph of farm owners

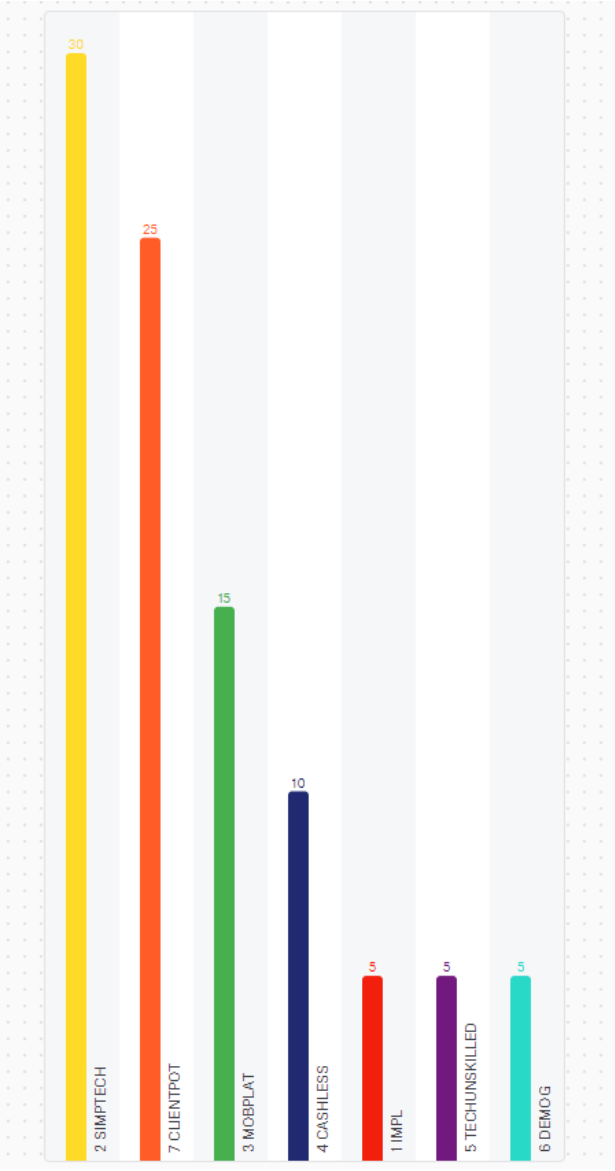


Figure 4: Atlas.ti Farm owner questionnaire data.

In this graph the three main areas for the business model viability can be identified, namely:

1. Simplified technology – it was evident from the interview findings that all participants are in need of technology that is simplified in one way or the other, be it easy to use

technology or the fact that all functionality of the application can be done on a mobile device,

2. Client potential – When interviewing the farm owners, it became evident that the strategy was to make them the first potential clients, and have identified the areas where the model can be of assistance to Farm Owners such as banking fees based on the workforce size and capitalising on that factor,
   Mobile platform – Similar to the farm workers, the farm owners want to have a mobile platform which is easy to use and easy to reach as there is not always time to visit a brick-and-mortar banking branch, and if the infrastructure allows it, to do everything on a mobile device was identified as a major selling point.

4.5 Chapter summary

The information gathered in this chapter informs an evaluation of a potential business model. The interview process used to gather the above information provides necessary insight the honest responses from the candidates gave the interviewer the opportunity to connect with each one-off them and use this soft evaluation skills to determine whether the potential business model will be of value to them. Key components critical to the business were identified and evaluated such as the importance of being mobile data free, being a cashless operation at a fraction of the cost they are currently paying.

There was a positive consensus regarding the business idea proposed. The ease of use of the system was seen to benefit both farm owners and farm workers. All farm workers confirmed that they would use this application technology if it were cheap to use and benefits their families, where this proved to be a major area where all confirmed the same answers. On the other hand, the farm owners were in a consensus that they would not use this application if it allowed their workers to apply for loans from the respective employers, and this was due to the fact that it will create more administrative work on the company administrators. This means that in order for this application to be successful with farm owners, it must ensure that admin is minimised, and ease of use maximised.

The following chapter will take the above information into account, and will be used to attempt and answer the five research questions:

1. a way to practically implement a fintech solution for both farmer and worker;
2. a use of simple technology for everyone that is both easy and secure;
3. a way to use the Fintech service on a mobile platform;

4. the possibility of doing away with physical money changing hands; and
5. perform a viability test of the technology in the agriculture sector which is dominated by uneducated and unskilled works.

Using business venture methodology and study the answer to research questions will be explored together with the interview answer to try and identify the feasibility of the business model.

5. Venture Feasibility

5.1 Executive Summary

The proposed business venture aims to create a mobile fintech application that will be used by minimum wage workers in the agricultural sector in South-Africa to replace traditional banking. The aim to replace traditional banking is due to the fact that in very rural areas, the traditional brick and mortar branches are located far away, and it takes a lot of time and effort to visit a branch. The proposed digital fintech application will allow all traditional banking services to take place on a mobile device and will save time and money where it saves on the need for in-person visits. Additionally, the application will also aim to provide this service at a fraction of the cost and be very use friendly so that uneducated minimum wage earners will find a benefit by using this service.

5.2 Business start-up method

In this section, the study attempts to identify which method will be sufficient in starting up the technological fintech venture. Identifying a suitable method will assist in the future success of the business model, as it is evident that different methods have different hurdles, and what will assist the viability of this venture is choosing the method with the least number of hurdles in order to scale the product rapidly.

5.2.1 Lean start-up method

The lean start-up method is different to traditional methods, as it does not create and use a business plan but rather the plan is to begin with the search for a business model that is repeatable and scalable (Blank, 2013).

Launching a new company, irrespective of the industry, is a risky venture with a rate of 75% of all start-ups failing, according to Shikhar Ghosh from Harvard Business School (Blank, 2013). Recently however, a less risky process for this start-up debacle has emerged, viz. the more experimental and provisional “lean start-up”. Business schools all around the world have started adapting this method in curriculums to teach the concept, which involves the agility to be able to change tactics or design, rather than favouring a rigid business plan (Blank, 2013).

Many entrepreneurs, serial innovators, and start-ups have recently been attracted to the lean start-up method (LSM), which was innovated by tech start-ups; however, due to the attractiveness of the model, it has been used in companies of various sizes and industries, in particular when implementing and managing new innovative projects (Yordanova, 2018).

The purpose of the LSM is to construct and maintain a “continuous feedback loop” with the company’s many clients during the product development cycles (Maurya, 2012). The lean manufacturing approach of Toyota has largely inspired the creation of the core principles within the LSM, and focuses on continuous improvement by conducting experiments with the company business model, and repeating the same methods in order to learn from the responses and mitigate accordingly (Blank & Dorf, 2012).

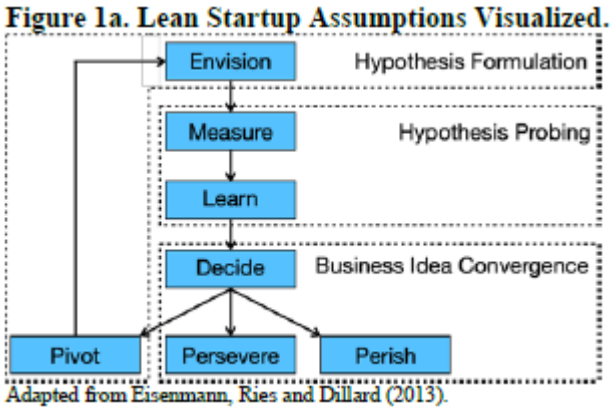


Figure 5: (Leatherbee & Katila, 2020, p. 49).

A very popular and probably one of the main tools that is used in a lean start-up strategy is the business model canvas, which was introduced by Osterwalder and Pigneur in 2010, providing a structure for different departments in an organisation to articulate their ideas of the particular business in nine specified areas (Au et al., 2011).

This highly visual tool used to summarise the business model is used to easily identify the key areas of business within the pre-specified nine areas, and using the model on one page helps

teams to identify key markers of interest, where further research allows for teams to go out and probe the different key factors by interviewing potential customers and users (Leatherbee & Katila, 2020).

The method of going out and probing the business model is hypothesis based, testing the hypothesis in real time, where this method of lean start-up greatly assists in reducing uncertainty about the viability of different ideas brought about in the business model canvas (Leatherbee & Katila, 2020). What was found to be of particular use in the business model of the fintech application, is the fact that using the lean start-up method and a business model canvas to test the business model and the ideas therein, where teams are encouraged to "pivot", that is, to find a different idea or method when the original idea seems to be lacking or is not confirmed by the interviewees, as visualised in Figure 1 above (Leatherbee & Katila, 2020).

Conclusion

From the research conducted it is evident that the lean start-up method proves to be a good approach for the start-up of a technology venture, and combined with the business model canvas, was applied this to the fintech venture. One of the greatest advantages discovered was the fact that using visual tools to elaborate the business model and having access to knowledge of the nine key factors, influencing the business model, the teams are able to pivot and change the model as it develops, getting rid of lacking factors and adding more effective measures.

Being able to pivot means a new start-up has an advantage over an existing business, which already boasts a defined strategy and business model, which is usually difficult to change and creates a speed advantage when a new venture can hit the market more quickly and which and can adapt at a faster pace than can an existing business.

5.2.2 Disruptive Innovation

Disruptive innovation poses one of two types of innovation between sustaining and disruptive innovation. This happens when a smaller company that does not have a lot of resources moves into the market and challenges an existing business or business in a given industry(Cote, 2022). Disruptive innovation comes in two forms:

- low-end disruption, where a company takes a low-cost business model and enters the existing market at the bottom and then claims a segment of that market; and

- new-market disruption, this is where a company creates a new segment in an existing market and claims this segment by providing to the underserved members in the market's needs (Cote, 2022).

Both of the above-mentioned types of disruptive innovations cause the existing companies, which usually operate from a sustaining innovation standpoint, to retreat and move upmarket, rather than attempting to battle new market entrant disruptors (Cote, 2022). This is usually the case when the new market entrant is competing in an area with very low profit margins, which is fine for the entrant, but is a market in which the existing company cannot compete as they chase higher profit margins. This results in exiting the low profit segment in search of higher profits, leaving the segment open for the new market entrant to gain all the profits even though the margins are lower (Cote, 2022).

Once the new market entrant has been at it for a while and their product improves, they slowly move into the higher profit margin sectors. With their product being heavily improved, they claim the entire sector, as their products are better than the existing company's products, pushing the existing company out of market (Cote, 2022).

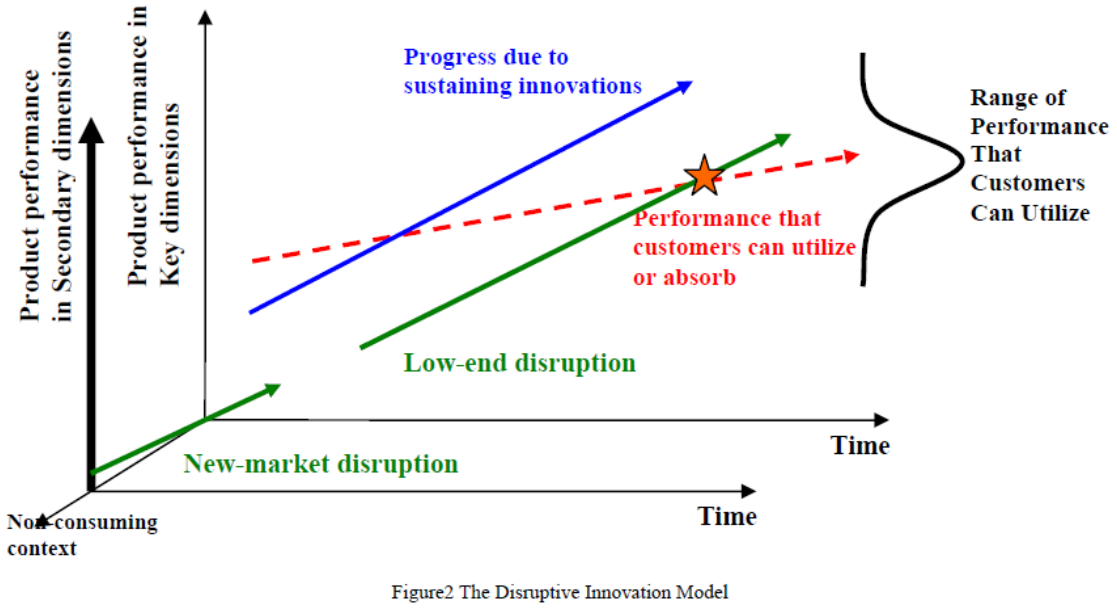


Figure 6: (Dan & Chieh, 2008, p. 403).

Disruptive innovations involve new product or a new service that is introduced into an industry that is already established, and which outperforms or is more cost conscious than offerings

that exist in the market, possessing the possibility to transform the industry and disrupt market leaders (Awati & Pratt, 2023).

The idea of a disruptive innovation lies in its name, where a sophisticated or complicated product or service is innovated as to become more accessible and/or affordable to a certain target market, but due to the disruption this brings to the market, it is usually hard to guarantee a positive outcome (Awati & Pratt, 2023).

Companies that are incumbents in the market, or larger businesses that tend not to pay attention to smaller competitors can be quickly devastated by market disruptors (Awati & Pratt, 2023).

Timeline of Disruptive Innovation

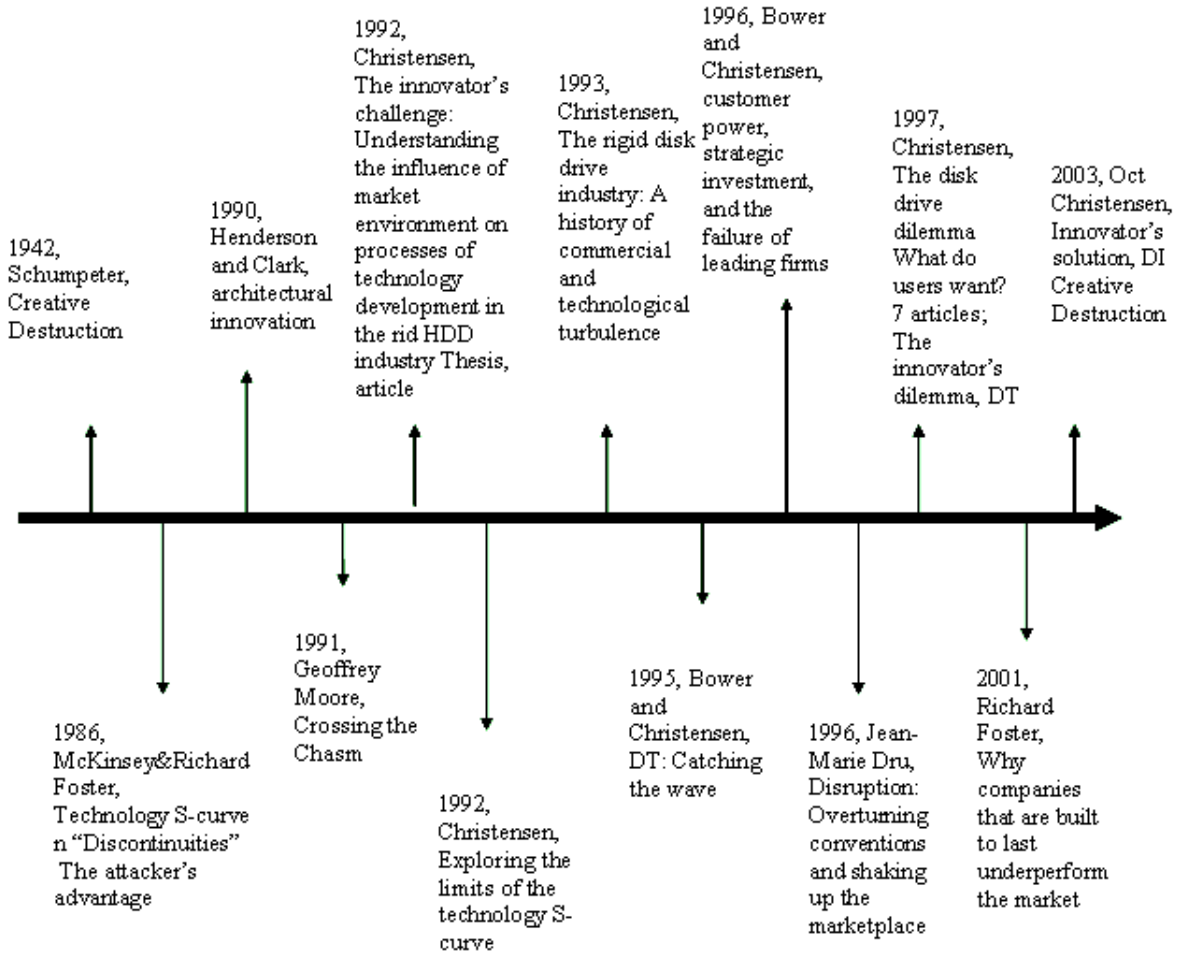


Figure 6: Timeline of Evolution of Disruptive Theory (Dan & Chieh, 2008, p. 402).

Disruptive innovation theory is not a new concept but is has been changed and adapted over time. It was made popular by Christensen, where it has been shown that disruptive innovation

proves to be a powerful tool when used to develop any new market and providing a new form of functionality (Dan & Chieh, 2008).

TABLE 1 LEADING FEATURES OF DISRUPTIVE INNOVATION

Perspectives	*Characteristics*	*Literature Sources*
Technology and market	Performance overshoot on attributes existing customers valued	Christensen and Raynor, 2003
	New technology underperforms on the attributes existing customers historically valued	Govindarajan and Kopalle, 2006; Tellis,2006
	New features offered based on the new technology are not valued and can not be used by existing customers initially	Govindarajan and Kopalle, 2006; Tellis,2006
	Further developments improve the performance on attributes to the extent that mainstream customers can accept	Govindarajan and Kopalle, 2006; Tellis, 2006
	When introduced, only appears to low-end and price sensitive customers or new customers	Christensen and Raynor, 2003; Govindarajan and Kopalle, 2006; Tellis, 2006
Market	Disruptive technology is first commercialized in emerging or insignificant markets	Tellis, 2006
	Products based on disruptive technologies are typically simpler, cheaper, more reliable and convenient than established technologies from customers' viewpoint[2].	Christensen, 2000; Tellis, 2006

Table 5: (Dan & Chieh, 2008, p. 404).

Table 5 categorises the leading feature of disruptive innovation into two categories of technology and market, with the following leading characteristics:

- customers valued over-performance;
- initial product offerings are underperforming;
- further developments improve initial product offerings;
- customers accept the improvements;
- when the product is introduced is only appears in the low-end and price sensitive markets; and
- these products are typically simpler and cheaper from a client's point of view (Dan & Chieh, 2008).(Dan & Chieh, 2008).(Dan & Chieh, 2008).(Dan & Chieh, 2008).(Dan & Chieh, 2008).(Dan & Chieh, 2008).(Dan & Chieh, 2008).

Fintech application for unbanked minimum-wage earners in South-Africa as a disruptive innovation

New Market Entrant

Even though there are numerous fintech applications in the market such as Yoco, Ozow, PayFlex, to name a few, the distinguishing factor for this fintech app is the target market at time of market entry.

The target here is to appear only to the low-end and price sensitive market at time of entry, where the minimum wage earners in South Africa, and more specifically the minimum wage-earning farm workers of South Africa. This will be achieved by identifying the types of farm owners that will be willing to implement the system on their farm, which in turn will make it easier for all their workers to switch to and use the platform. This offers a low-cost and user-friendly product making adoption easier to uneducated users.

Low-cost model

Such a model introduces features that the potential users utilise on a daily basis. According to the data collected from the participants, their banking habits consists mostly of withdrawing cash from ATMs or inside the branch, checking balances and debit orders, and sending money to loved ones that live far away.

The key to the low-cost model is to focus on these three areas when entering the market segment and provide the option to either withdraw cash or use the application as a cashless way of transacting, assisting with basic money management, such as checks and balances, and then most importantly providing a simple and cost-effective way to help send money to their families.

Focusing on very low margins but banking on the quantity of users and transactions that will occur on a monthly basis provides the revenue model for this product. Once revenue has been generated, the profits can be utilised to improve the product, and increase ways of driving costs down to encourage a larger user base. Once the product adoption increases on a monthly basis, the product can be rolled out into other sectors of industry where minimum wage workers are present, increasing the number of users and in turn increasing the revenue and profits.

Product enhancement

When the business model has successfully gained control over a segment of the low-cost market, pushing the incumbents into higher markets, profits can be utilised to improve product offering and expand into a model that provides different tiers of service based on user affordability. If a user can afford higher fees, this allows for access to more capabilities and features.

Ultimately, as the goal of the product is to enhance the socio-economic situation of low-income earners, a ‘pay it forward’ button will be available to higher income earners, where they will be able to ‘subsidise’ the costs of use for another person falling in the low-income bracket. This will create a system where the people that need to use the system but at the lowest costs possible, will be able to do so, potentially free of charge.

Low-income users will still be paying transaction fees as these costs will make up the bulk of the profit model of the business. They will however be more inclined to use this product due to the fact that banking will be ‘free’ and this forms part of the marketing strategy as well.

Conclusion

Disruptive innovation combined with a lean-start-up strategy seems to be the correct fit to take the product to market. As this is a tech business, it will need to be cheap and enter the low-end segment of the market, which is the target market, in order to keep costs down and create a sustainable product. Combined with this strategy, the lean-start-up method will allow the product to be lean and be stripped of unnecessary complications, and when entering the market and disrupting the segment, the model will allow the product to easily pivot into other directions when faced with roadblocks. This will ensure profitability and an easy-to-use product that will be attractive to the target market.

5.3 Strategy planning and review

5.3.1 The vision, mission, and objectives of this study

Vision

To create a platform that will uplift the minimum wage earner in South Africa and help to stabilise their financial situation.

Mission

To ensure the financial wellbeing of minimum wage earners in South Africa by using a user-friendly application that will assist individuals in saving money and create a better financial future for themselves.

Objectives

The main objectives of the business venture are the following:

1. Creating a mobile fintech application for use on any smartphone device, that will assist a user to replace his/her traditional banking account and that is providing a saving to the user.
2. Use the mobile fintech application to provide cost saving financial services to the user, which will in turn uplift their economic situation and enhance their relationship with their employers.
3. Use the mobile application data to identify where minimum wage earners experience difficulty with their daily finances. This data can be formulated to create personalised financial profiles on all users and be provided with up-to-date information on how to improve credit ratings etc.
4. The data gathered by the mobile application can be used by bigger financial institutions when the users have built up a profile, in order for them to apply for home loans etc., which will in turn further assist the upliftment of these individuals.

5.3.2 Business Model Canvas

The business model canvas is a method that uses visual modelling to capture the essentials of the business model of a company or proposed company .(Fritscher & Pigneur, 2014) It consists of nine building blocks, each with a separate heading, and data is added to each

building block containing the essential elements of each heading into the business model (Fritscher & Pigneur, 2014).

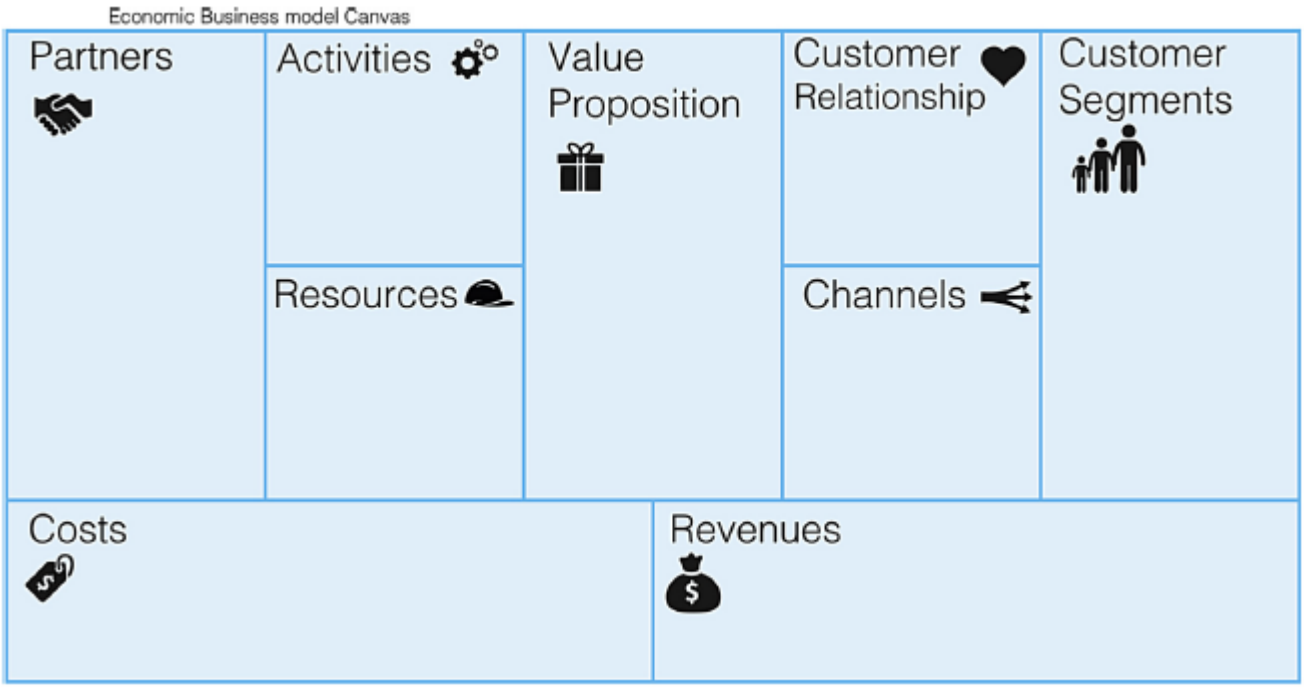
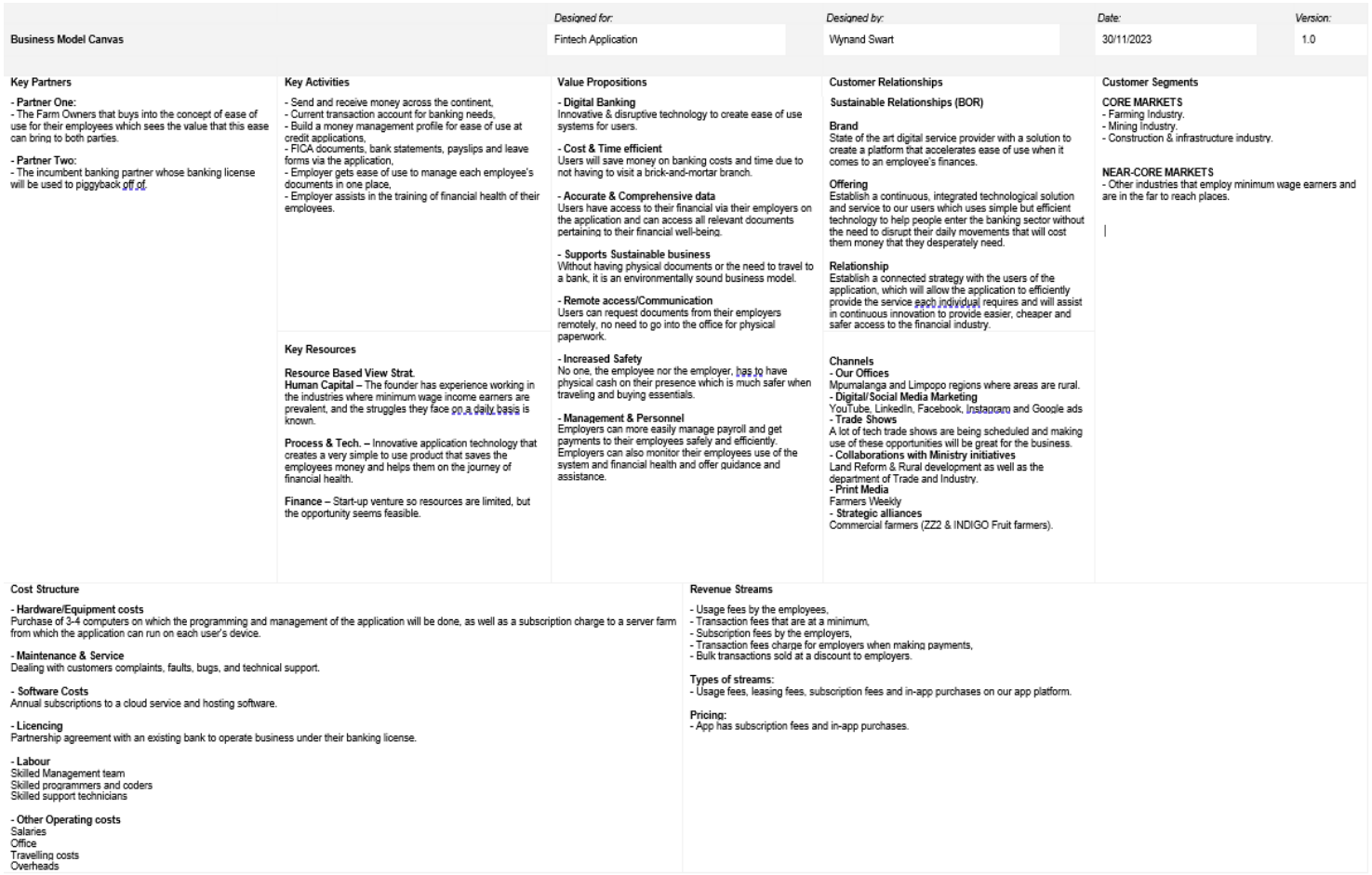


Table 6: (Joyce & Paquin, 2016, p. 3).



Business Model Canvas

Designed for: Fintech Application | *Designed by:* Wynand Swart | *Date:* 30/11/2023 | *Version:* 1.0

Key Partners

- **Partner One:**
- The Farm Owners that buys into the concept of ease of use for their employees which sees the value that this ease can bring to both parties.

- **Partner Two:**
- The incumbent banking partner whose banking license will be used to piggyback off of.

Key Activities

- Send and receive money across the continent,
- Current transaction account for banking needs,
- Build a money management profile for ease of use at credit applications,
- FICA documents, bank statements, payslips and leave forms via the application,
- Employer gets ease of use to manage each employee's documents in one place,
- Employer assists in the training of financial health of their employees.

Key Resources

Resource Based View Strat.
Human Capital – The founder has experience working in the industries where minimum wage income earners are prevalent, and the struggles they face on a daily basis is known.

Process & Tech. – Innovative application technology that creates a very simple to use product that saves the employees money and helps them on the journey of financial health.

Finance – Start-up venture so resources are limited, but the opportunity seems feasible.

Value Propositions

- **Digital Banking**
Innovative & disruptive technology to create ease of use systems for users.

- **Cost & Time efficient**
Users will save money on banking costs and time due to not having to visit a brick-and-mortar branch.

- **Accurate & Comprehensive data**
Users have access to their financial via their employers on the application and can access all relevant documents pertaining to their financial well-being.

- **Supports Sustainable business**
Without having physical documents or the need to travel to a bank, it is an environmentally sound business model.

- **Remote access/Communication**
Users can request documents from their employers remotely, no need to go into the office for physical paperwork.

- **Increased Safety**
No one, the employee nor the employer, has to have physical cash on their presence which is much safer when traveling and buying essentials.

- **Management & Personnel**
Employers can more easily manage payroll and get payments to their employees safely and efficiently. Employers can also monitor their employees use of the system and financial health and offer guidance and assistance.

Customer Relationships

Sustainable Relationships (BOR)

Brand
State of the art digital service provider with a solution to create a platform that accelerates ease of use when it comes to an employee's finances.

Offering
Establish a continuous, integrated technological solution and service to our users which uses simple but efficient technology to help people enter the banking sector without the need to disrupt their daily movements that will cost them money that they desperately need.

Relationship
Establish a connected strategy with the users of the application, which will allow the application to efficiently provide the service each individual requires and will assist in continuous innovation to provide easier, cheaper and safer access to the financial industry.

Channels
- **Our Offices**
Mpumalanga and Limpopo regions where areas are rural.
- **Digital/ Social Media Marketing**
YouTube, LinkedIn, Facebook, Instagram and Google ads
- **Trade Shows**
A lot of tech trade shows are being scheduled and making use of these opportunities will be great for the business.
- **Collaborations with Ministry initiatives**
Land Reform & Rural development as well as the department of Trade and Industry.
- **Print Media**
Farmers Weekly
- **Strategic alliances**
Commercial farmers (ZZ2 & INDIGO Fruit farmers).

Customer Segments

CORE MARKETS
- Farming Industry.
- Mining Industry.
- Construction & infrastructure industry.

NEAR-CORE MARKETS
- Other industries that employ minimum wage earners and are in the far to reach places.

Cost Structure

- **Hardware/Equipment costs**
Purchase of 3-4 computers on which the programming and management of the application will be done, as well as a subscription charge to a server farm from which the application can run on each user's device.

- **Maintenance & Service**
Dealing with customers complaints, faults, bugs, and technical support.

- **Software Costs**
Annual subscriptions to a cloud service and hosting software.

- **Licencing**
Partnership agreement with an existing bank to operate business under their banking license.

- **Labour**
Skilled Management team
Skilled programmers and coders
Skilled support technicians

- **Other Operating costs**
Salaries
Office
Travelling costs
Overheads

Revenue Streams

- Usage fees by the employees,
- Transaction fees that are at a minimum,
- Subscription fees by the employers,
- Transaction fees charge for employers when making payments,
- Bulk transactions sold at a discount to employers.

Types of streams:
- Usage fees, leasing fees, subscription fees and in-app purchases on our app platform.

Pricing:
- App has subscription fees and in-app purchases.

Figure 7: Business Model Canvas – Fintech Application for Unbanked minimum wage earners.

- Key partners – the farm owners that buys into the concept of ease of use for their employees and sees value for both parties. The banking partner the application will need to use in order to move money around and across borders.

- Key activities – send and receive money, create a transactional banking account on the application, create money management profiles on each user, have capabilities of uploading and downloading paperwork to the platform to create ease of use for both worker and employer.

- Value propositions – digital banking, time and cost efficiencies, accurate and comprehensive data, supporting sustainable business, remote access and communication, increased safety and the ease of use in management of the product.

- Customer relationships – creating sustainable relationships through brand, offering and relationships.

- Customer segments – identifying the core markets which is the farming, mining and construction industry, which employs minimum wage workers. Near-core markets targeted in future which also employs minimum wage workers.

- Key resources – resource-based view strategy focusing on human capital, process and technology and finance. These are the key focus areas to gain the required resources to successfully launch the product.

- Channels – Various channels of marketing, distribution and programming, such as the business offices, digital and social marketing, trade shows, collaborations with Ministry initiatives, print media, and strategic alliances.

- Cost structure –in hierarchical order the costs will be distributed amongst hardware and equipment costs, maintenance and service of the application, software costs, licensing, labour and operating costs.

- Revenue streams – multiple revenue streams is the aim in the form of usage fees by users, transaction fees, subscription fees by employers, and in-app purchases.

5.3.3 PEST analysis

A PEST or political, economic, social and technological analysis of the entire business environment on an external level was conducted, usually conducted by a business to analyse its activities more strategically (Kim-keung, 2014).

A PEST analysis examines the four categories that affects the business on an external level in the following ways:

- political factors deal with the different forms of governmental regulations an any other political activities in the economy;
- economic factors deal with the macro-economic situation in the external environment of the country;

- social factors deal with all the demographic, social and cultural situations in the country that effects the economy; and
- technological factors deal with all the technology related factors in the country including development, infrastructure, incentive schemes and changes that effect the external economic environment of a country (Kim-keung, 2014).

In this section, the PEST analysis on the target market of the business model will be analysed and in using a PEST analysis, the business model will benefit from greater insight into the external factors in the economy that is directly affecting the business model.

Political

P

POLITICAL	
Employment and Wage disputes	Daily occurrence in South Africa, especially amongst minimum wage earners
Government Regulations	Minimum wage increases every year
Labour Unions	Lobbying for workers rates and rights
Legal requirements	Employers must conform to rates set by Government

Economic

E

ECONOMIC	
Employment Rates	Can cause a strain on farmers resulting in job cuts
Instability of Financial Markets	Exchange rates directly affects farming output daily
Bank Charges	High charges in developing country such as South Africa
Single income households	1 breadwinner supporting more than 1 family
Long distance employment	Breadwinners travel across provinces in search of work

Social

S

SOCIAL	
Demographics	Majority of farm workers are males
Farm Worker education	All interviewed candidates did not have a higher education
Trends in their lifestyle	Minimum wage earners live on or below the bread line
Farming Culture	South Africa has a very large farming community

Technological

T

TECHNOLOGICAL	
Fintech Applications	Fintech applications have taken the world by storm
Technological advancements	Technology is advancing daily with new developments taking place
Cheap Smartphones	Smartphones have become cheap in South Africa (R400.00)
Communication and Info Trends	Electronic communication has taken front stage
Cost of Mobile Data	Mobile Data costs in South Africa is very high

Political – that which the PEST analysis identified is important to take into consideration for the viability assessment of the business model. The key component in this segment is the minimum wage that is regulated by government, where it is therefore incorporated in law that an employer is forced to pay minimum wage, and minimum wage earners are the target market. The labour unions and legal requirements set up by Government enforce the minimum wage expenditure by employers.

Economic – The PEST analysis identified a few key areas of concern for the viability of the business model, namely the volatility of the financial markets, the single income households due to low employment rates, and the fact that breadwinners are working far away from home in order to have a job and provide for their families.

Social – The PEST analysis identified key social impact that will have to be taken into consideration, such as the dominated demographic of the participants, which were all male. The education level of minimum wage earners is important to note because the technical difficulty of the mobile platform needs to be at a level that is user friendly for anyone, and then the fact that minimum wage earners are living on the breadline is important, because it will be

necessary to determine how they spend their money and how they will choose to use the application and pay for it whilst they have other needs to fulfil.

Technological – As the whole business model is based on technology, this was probably the most important factor for which the PEST analysis provided sufficient information. There is no shortage of fintech applications in the current market, with each having a similar idea, but differentiating factors. It will be important for the business model to establish a differentiating factor. Also identified was the fact that smartphones have become very cheap in South Africa and are easy to both buy and use, making the proposed idea easy to implement on a large scale. The major impediment in South Africa however is the high costs associated with mobile data, if users can't afford mobile data, then they will not be able to afford paying for the use of the app, where instead it will be imperative for the survival of the business model to either provide free mobile data to users or have a mobile data free application or both.

5.3.4 SWOT Analysis

Most companies use a SWOT analysis when they are at a planning stage and want to identify and/or examine any existing resources externally and internally within the business and is then used to investigate their trends and patterns and can help assess whether their implications are positive or negative (Namugenyi et al., 2019)(Namugenyi et al., 2019)(Namugenyi et al., 2019)(Namugenyi et al., 2019)(Namugenyi et al., 2019)(Namugenyi et al., 2019)(Namugenyi et al., 2019).

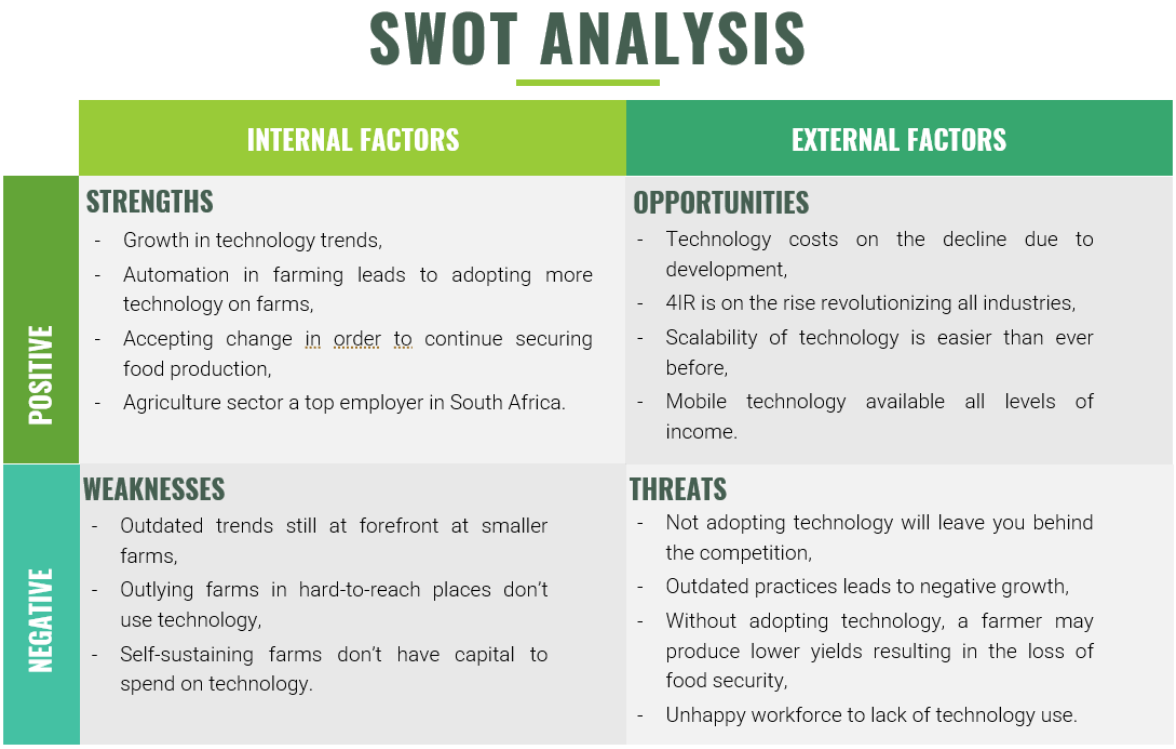
SWOT is an abbreviation for strengths, weaknesses, opportunities and threats, and is used the analyse the factors mentioned above (Namugenyi et al., 2019).

The abbreviations can be explained as follows:

- **Strengths** refer to the internal capabilities of the business and are the positive things that comes from current business model and is required for the business to function and serve its clients;
- **Weakness** are also internal factors, but they affect the business negatively or impede the company's current performance to its clients;
- **Opportunities** are positive for the business and can favour their performance towards their clients and have links to outside organisations; and
- **Threats** are negative factors from the outside of the business that can affect it negatively and can severely limit the business growth, and is an external factor
- (Namugenyi et al., 2019).

-

Strengths and weaknesses are discovered internally within the business and opportunities and threats are recognised outside of the business, externally. Following the description of the SWOT analysis, a SWOT analysis will be performed on the current business model.



The SWOT analysis provided valuable insight into the four categories recognised for the Fintech business model. Further discussion follows.

Strengths – As technology trends grow at a rapid rate, the chance of a late adapter being left behind is a reality. All farmers will have to realise that agriculture is not the ancient practice anymore, and that it has evolved and keeping up with the evolution is essential for survival. Automation is not a zero-sum game. With agriculture being a top employer in South Africa as far as the number of workers employed in the sector is concerned, there is a real opportunity to scale a product focused on their labour force.

What the strengths enumerated has shown is that the business model proves viable, as more farmers are adopting and implementing tech trends, where, due to the number of agricultural employees, the product will be easily scalable once a good product is released.

Weaknesses – smaller farms are slower to adapt or implement technological advancements due to the fact that they struggle to compete with large farms and do not have excess capital to spend. Similarly, hard-to-reach and outlying areas present the impediment if insufficient access to mobile infrastructure.

What the weakness heading has identified is that for the product to be viable in all areas around the country, especially heavy rural areas in which the target market is situated, this will have to use simplified technology that does not heavily rely on a sufficient technological infrastructure and should also not be data heavy.

Opportunities – there are a lot of opportunities identified in the technology space, with costs to produce technology on the continuous decline as daily advancements are discovered. The rise of 4iR is driving this cost reduction and creating a proliferation of opportunities that formerly did not exist. Due to the fact that smartphones in South Africa have become cheap and accessible, all levels of income and education are potentially facilitated.

The above-mentioned opportunities show great promise for the potential product, with the key functions for the mobile platform's existence being made from cheap and easy to use technology, which will allow even an uneducated person to be able to use the platform at a fraction of the price.

Threats –refusing to adopt technology will leave a farm behind, where outdate practices makes survival difficult and will lead to diminished yields, resulting in food insecurity. Farmers not adopting technology and implementing technology to assist their workers and provide an opportunity to learn and grow, will lead to an unhappy workforce, which will in turn negatively affect the business.

The key to a viable business product will be to make the application as user friendly as possible, with more benefits involved, such that it will be fairly easy for a farmer and farm worker to decide to use this technology to assist them in their future journey. This application must be there to assist farm workers on their financial journey, as well as to provide basic education while using technology.

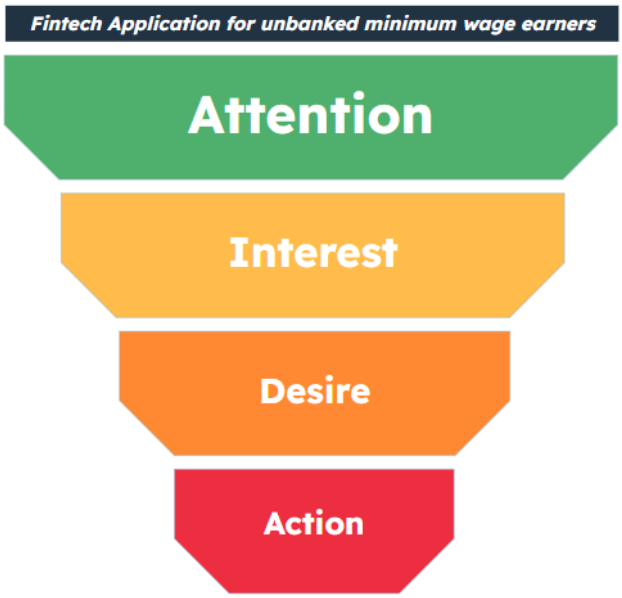
5.4 Marketing plan

The AIDA model was developed by E. St. Elmo Lewis in 1898 and shows the basic movements of how marketing and advertisements effectively influence the perception of potential customers (Li & Yu, 2013). AIDA is an abbreviation and stands for the following:

- A = attention or awareness, where the goal is to attract the customer;
- I = interest, where the goal is to demonstrate a product's benefits and advantages to the customer;
- D = desire, where the goal is to create a desire within the customer that they want and need the product; and
- A = action and the goal is to guide and lead the potential customer into acquiring the product or service being sold (Li & Yu, 2013).

To understand consumer behaviours, scholars and marketers have worked on combining traditional economics with basic human psychology, which is sometimes referred to as 'behavioural economics', to advance their understanding and discover new ways of marketing products to fit in with consumer behaviour (Montazeribarforoushi et al., 2017). The AIDA model assists marketers in getting a holistic view of the best way to communicate with their customers and the target market in an effective manner, by going through one step on to the other, where this method collectively betters the chance of success in the model (Montazeribarforoushi et al., 2017).

Using the AIDA model to get people to download the app, to determine the basic functionality, and create interest.



Goal/KPIs	Customer Actions	Business Actions
- Send a marketer around to farms. - Brand awareness. - **Example:** *"Local newspapers".*	- Seeking ways to save money. - Engaging with employers to help them save money. - **Example:** *"Engage employer about saving scheme for employees".*	- Establish a connection with farm workers and owners. - Create high-level awareness ads in local newspapers. - **Example:** *"Elaborate on the system's cost saving benefits"*
- Roadshow to farms. - Advertise to labour unions. - **Example**: *"Site visits."*	- They discover our solution to their problems. - They can make their calculations and compare service. - **Example:** *"Sees the cost savings and is interested".*	- Let people sign attendance sheets with their details. - Create flyers to distribute with FREE download instructions. - **Example:** *"Download app for free and start saving".*
- Free Downloads. - Complementary Data. - **Example:** *"Download app for 500mb free data".*	- Reads the flyer sent around at Roadshow. - Goes to app store and downloads the free app. - **Example:** *"Downloads app for '500mb free data.'"*	- Create simple to read instructions on flyers to get people to download app and use basics. - **Example:** *"Publish workable app that needs to be connected to employee account for banking".*
- Demo app for free version. - Deals. - **Example**: *"Create an account to link money deposits".*	- Decides to connect app to his employers cash deposit account. - **Example**: *"Changes banking details to the details of the app and starts receiving monthly deposits".*	- Give full app capability to people receiving deposits in the app account. - **Example:** *"Allow the app to give full access to all functions to paid customers".*

The AIDA model was identified as being the model to drive the marketing of the product due to the stages that marketers of the product ought to endure, which can be effectively tracked in order to drive a successful campaign. As illustrated above, one can clearly see the requisite goals, customer actions, and business interventions required in order to capitalise on the marketing campaign.

Doing a roadshow and going around to the various farms that were targeted as the first users of the model, was identified as the best way to create awareness and pique interest in the potential clients. The roadshow aimed to create awareness of the relevant app. Once the potential clients were aware of the product, the next steps would be to create a need and desire for the product, where the main focus of the study is to save users money and create a system that will assist them in enhancing their own financial wellbeing.

The farm owners will play a significant role in the users taking action and using the application, as the model also revolves around farm owners using the system to create an ease-of-use platform for monthly payments. Potential clients will adopt the product much more readily if their employers are involved as well.

Taking the above into account, using the AIDA model is the most effective marketing tool for this product.

5.5 Operational plan

5.5.1 Geographical location

Due to the start-up being a tech business, in particular a fintech business, the geographical location is not an important factor because the platform will be web-based and can be driven from anywhere in the world. However, being a fintech application, identifying a hub from which to launch the product, it wis likely to be beneficial to be around other technology businesses as well as financial and investment institutions, which can both be approached for financial and technological assistance.

It was decided that the best place to launch the platform from would be in Johannesburg, Gauteng, South Africa. This decision was made due to the majority of financial institutions calling Johannesburg home, as well as a developed technological infrastructure which can be used to easily scale the product. Johannesburg is also geographically central to North-West, Limpopo, Mpumalanga, KwaZulu-Natal, and the Free State provinces where the majority of South African Farms are based, and where a large part of the target market for the application is easily reachable.

5.5.2 Equipment needed to commence venture

The fintech business model is a tech start up, and the following needs were identified:

- office to set up all required network and programming hardware;
- computers for software development;
- access to high-speed internet for development and first-phase testing;
- all office supplies such as tables, chairs, stationery and basic electrical equipment to create a suitable working environment; and
- two to three vehicles for use when doing the roadshow, seeing potential clients, and servicing existing clients when on-site work is required.

5.5.3 Personnel requirements for the venture

Management – The founder will be the first person to lead and develop the business, he will act as the general manager, sales manager and CEO of the business. It is not a new trend to

see founding members of tech start-ups to manage the whole business and do all the work until a venture capitalist gets involved.

Development – This department is the biggest part of the business, as with any tech start-up, the technology needs to be developed, tested, de-bugged, further developed, tested again, debugged again, and released for the first phase of customer testing. This will be a major task and the business needs a lead programmer, and at least three additional programmers and developers in order to get the product to market in record time. First-phase testing will be a chosen client, and all testing done by the first twenty candidates interviewed for the business model.

Sales – This department will be the second biggest part of the success of the venture because without sales happening, there is no product to be used, tested, or paid for. Two to three salesmen can be appointed to start marketing on site to different farmers and to gain clients and push sales. When a viable product is released, they will be taking it to market on site.

5.6 Working BETA-model of the Fin-Tech Application

For the purpose of the Research, a BETA model of the basic application was created on a computer in a PC format, meaning that it is only workable from a computer and not a mobile device. The intention of this was to create a physical piece of technology that can be show to potential investors or venture capitalists, and the basic functionalities of what the product could be was created in order to showcase it if the request arise.

Unfortunately, due to the fact that it is BETA mode, only the creator has access to the platform and the platform is not in a full active state which can be used by any person other than the developer. It was the intention of the research that if a potential investor have shown a lot of interest in the venture, then the application can be made available for BETA testing on a wider audience. This was done for the sole reason of not incurring actual cost during the research phase as it would be very expensive to employ a developer to keep the application in an active BETA state for testing purposes of the research paper.

To ensure that there is sufficient capacity to create and maintain a working BETA platform, the researcher will have to employ 1 lead programmer and 3 additional software developers. Developers and software engineers can be found on the open market and easily be employed to work on this project to create an easily scalable platform after the various testing stages. This will ensure that the platform can be sufficiently tested by the target market and all bugs

picked up during BETA phase be resolved, de-bugged and sent for testing in the various testing rounds, as outlined in the operational plan above. This means that the product will be thoroughly tested before a working platform is created and distributed.

6. Conclusion

This study was necessary to explore as a business venture, the need for low-income earners in South Africa to have access to better financial services than what was previously afforded to them, and any product that can be of assistance to lift communities out of poverty or at least provide a foundation for financial education, is of utmost importance to the development of this product first and foremost. The by-product of this idea is capitalising on the different revenue streams available to the product in order to create a viable and profitable business whilst doing socio-economic good.

The study revealed the following results:

- low-income earners or minimum wage earners are very cost conscious, and they have to be as a means of survival;
- sending money over a distance via electronic means are significant to minimum wage earners, as all of the participants in the interview worked away from their loved ones;
- having access to a digital form of banking is important to minimum wage earners for two reasons, one being that they cannot afford to travel to a brick-and-mortar banking branch and secondly, it is much safer for them to not carry cash on their person;
- even though all participants are minimum wage earners, every single candidate had a smartphone and has basic knowledge on how to operate it;
- minimum wage earners do need assistance from their employers in the form of education and financial assistance in various forms;
- farm owners are very cost conscious, and they have to be as their main sources of income are seasonal and that income needs to be stretched over a 12-month period, where their costs need to be managed correctly; and
- farm owners are willing to assist their employees wherever they can and when possible.

Based on the facts that the study revealed, it is evident that a business model does exist in this area, and the fintech application for unbanked minimum wage earners in South Africa can be a viable business. However, what was identified was the following:

- the target market for this product is much bigger than previously expected;
- seasonal workers were not included in the interview process due to interviews taking place outside harvesting season;
- farm owners need to be investigated at a deeper level with more interviews to identify all the areas that they are willing to help bring the product to market;
- this model is not necessarily a replacement for a traditional banking account, but could be a supplementary product to broaden a commercial bank's client base while outsourcing the central effort to the start-up itself;
- a bigger interview sample across more than two provinces must be done in order to see the correlation between different farms, seasons and workers.

Taking the above mentioned into account, it is highly recommended that the business model undergoes further investigation and research, broadening the scope of interviewees in different types of farming sectors. This must be done so as to ensure that the need for this business model is realised throughout different sectors and farms to formulate the final conclusion that this venture will be sustainable and viable, as it has been identified that is not sustainable in its current form.

The research has shown that there is a market for the application, but in the current form it is not sustainable, therefore it is strongly recommended that the research be expanded into a wider geographical location and include minimum wage earners from various sectors in the economy. Other sectors that also employ minimum wage earners are in the construction, mining, and logistics industries. The survey completed by the focus group of this study, can be expanded to include more questions that will assist in providing a better detailed analysis of what is required from this type of product to be feasible. By doing so, the broader impact of the product on the economy will be explored.

This additional research will provide much needed information on how to improve the product, but more importantly it will explore the benefits of the application to the South African economy. The benefits of the application to the economy of South Africa will be in the form of assisting citizens to gain financial education, allow individuals to have more disposable income, which will in turn lead to expenditure in other forms that will have a macro impact on the economy of South Africa.

Bibliography

Alexander, A. J. S. L. , S. B. (2017). How Fintech is Reaching the Poor in Africa and Asia: A Start-Up Perspective. *EMCompass*, *March*(34).

Alshenqeeti, H. (2014). Interviewing as a Data Collection Method: A Critical Review. *English Linguistics Research*, *3*(1). https://doi.org/10.5430/elr.v3n1p39

Au, M., Oliveira, Y., José, J., & Ferreira, P. (2011). Business Model Generation: A handbook for visionaries, game changers and challengers. *African Journal of Business Management*, *5*(7). http://www.academicjournals.org/AJBM

Awati, R., & Pratt, M. K. (2023). *What is disruptive innovation? | Definition from TechTarget*. TechTarget.Com. https://www.techtarget.com/searchcio/definition/disruptive-innovation

BFAP. (2022). https://www.bfap.co.za/employment-brief-2021-q4/

Blank, S. (2013, May). *Why the Lean Start-Up Changes Everything*. Harvard Business Review.

Blank, S., & Dorf, B. (2012). *The startup owner's manual: The step-by-step guide for building a great company* (J. & S. Wiley, Ed.).

Buckley, R. P., & Webster, S. (2016). Customer Relationship Management Capabilities: Measurement, antecedents and consequences', 2012 (50)1 Management Decision 115. In *Journal of Financial Transformation*. https://www.bcgperspectives.com/content/articles/financial-institutions-

Cote, C. (2022, February 3). *Sustaining vs. Disruptive Innovation: What's the difference?* Harvard Business School Online.

Cowling, N. (2024). *South Africa: regional employees in agriculture 2023 | Statista*. Statista.Com. https://www.statista.com/statistics/1129828/number-of-people-employed-in-agriculture-in-south-africa-by-region/

Dan, Y., & Chieh, H. C. (2008). *A Reflective Review of Disruptive Innovation Theory*.

Fritscher, B., & Pigneur, Y. (2014). Visualizing business model evolution with the Business Model Canvas: Concept and tool. *Proceedings - 16th IEEE Conference on Business Informatics, CBI 2014*, *1*, 151–158. https://doi.org/10.1109/CBI.2014.9

Gai, K., Qiu, M., & Sun, X. (2018). A survey on FinTech. *Journal of Network and Computer Applications*, *103*, 262–273. https://doi.org/10.1016/j.jnca.2017.10.011

Hinson, R., Lensink, R., & Mueller, A. (2019). Transforming agribusiness in developing countries: SDGs and the role of FinTech. In *Current Opinion in Environmental Sustainability* (Vol. 41, pp. 1–9). Elsevier B.V. https://doi.org/10.1016/j.cosust.2019.07.002

IFC. (2017). *How Fintech is reaching the poor in Africa*.

Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, *135*, 1474–1486. https://doi.org/10.1016/j.jclepro.2016.06.067

Kim-keung, J. H. (2014). Formulation of a Systemic PEST Analysis for Strategic Analysis. *European Academic Research*, *2*(5), 6478–6492. www.euacademic.org

Leatherbee, M., & Katila, R. (2020). The lean startup method: Early-stage teams and hypothesis-based probing of business ideas. *Strategic Entrepreneurship Journal*, *14*(4), 570–593. https://doi.org/10.1002/sej.1373

Li, J., & Yu, H. (2013). An Innovative Marketing Model Based on AIDA: - A Case from E-bank Campus-marketing by China Construction Bank. *IBusiness*, *05*(03), 47–51. https://doi.org/10.4236/ib.2013.53b010

Maurya, A. (2012). *Running Lean: Iterate from Plan A to a Plan That Works* (M. O'Reily, Ed.; 2nd ed.).

Mccaffrey, M., & Schiff, A. (2017). *FINCLUSION TO FINTECH Fintech product development for low-income markets Finclusion Fintech Fintech Product Development for Low-Income Markets*.

Montazeribarforoushi, S., Keshavarzsaleh, A., & Ramsøy, T. Z. (2017). On the hierarchy of choice: An applied neuroscience perspective on the AIDA model. *Cogent Psychology*, *4*(1). https://doi.org/10.1080/23311908.2017.1363343

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. In *International Journal of Qualitative Methods* (Vol. 1, Issue 2).

Namugenyi, C., Nimmagadda, S. L., & Reiners, T. (2019). Design of a SWOT analysis model and its evaluation in diverse digital business ecosystem contexts. *Procedia Computer Science*, *159*, 1145–1154. https://doi.org/10.1016/j.procs.2019.09.283

Nicoletti, B. (2017). *Palgrave Studies in Financial Services Technology Integrating Finance and Technology in Financial Services The Future of FinTech*. http://www.springer.com/series/14627

Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing*, *18*(2). http://eprints.hud.ac.uk/id/eprint/23995/

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. In *Forum Qualitative Sozialforschung = Forum : Qualitative Social Research* (Vol. 7, Issue 4). www.tue.nl/taverne

Roberts, J. (2022). *Cash costs SA consumers R23 billion a year - study - B2B Central*. B2bcentral.Co.Za. https://www.b2bcentral.co.za/cash-costs-sa-consumers-r23-billion-a-year-study/

Schueffel, P. (2016). Taming the Beast: A Scientific Definition of Fintech. *Journal of Innovation Management Schueffel JIM*, *4*, 32–54.

South Africa - Agricultural Sector. (n.d.). Retrieved April 18, 2022, from https://www.trade.gov/country-commercial-guides/south-africa-agricultural-sector

South African banks making efforts to reach and integrate the unbanked population - South Africa 2016 - Oxford Business Group. (n.d.). Retrieved March 24, 2024, from https://oxfordbusinessgroup.com/reports/south-africa/2016-report/economy/the-final-20-reaching-the-unbanked-population-is-a-complex-task

SOUTH AFRICA'S AGRICULTURAL STATISTICS 2022 - Frenchside. (2022). https://frenchside.co.za/south-africas-agricultural-statistics-2022/

Stergios, A., & Laskaridou, E. (2010). *The Importance of Information through Accounting Practice in Agricultural Sector-European Data Network Im working on deferred taxation and their effect on financial statements during financial crisis View project Corporate Governance Analysis and Social Networks: A Case Study in Greek Firms View project*. https://www.researchgate.net/publication/49619860

Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Tech-nique for Research. In *International Journal of Academic Research in Management (IJARM)*. https://hal.science/hal-02546796

Visser, M., & Ferrer, S. (2015). *Farm Workers' Living and Working Conditions in South Africa: key trends, emergent issues, and underlying and structural problems THE PRETORIA OFFICE OF THE INTERNATIONAL LABOUR ORGANIZATION*.

Wigglesworth, R. (2016). *Fintech: Search for a super-algo | Financial Times*. Financial Times. https://www.ft.com/content/5eb91614-bee5-11e5-846f-79b0e3d20eaf

Yermack, D. (2018). *Fintech in Sub Saharan Africa What has worked well, and what hasn't*.

Yordanova, Z. B. (2018). Lean Start up Method Hampers Breakthrough Innovations and Company's Innovativeness. *International Journal of Innovation and Technology Management*, *15*(2).

Appendix A – Working Digital Platform of Beta Fintech Model

Attached in Appendix A is the screenshots and brief explanations of a Beta model of a working digital platform.

Appendix B – Code Book for ATLAS – Farm Workers

Attached in Appendix B is the table of worked answers from interviews held, and then inserted into Atlas.ti work coding analysis.

Appendix C – Code Book for ATLAS – Farm Owners

Attached in Appendix C is the table of worked answers from interviews held, and then inserted into Atlas.ti work coding analysis.