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Understanding the attributes and characteristics of cryptocurrency ownership: A South African study

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Ethics clearance number: SOA-2022-07-02

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A research project submitted in partial fulfilment of the requirements for the degree of Master of commerce by coursework and research report in the field of accountancy in the faculty of commerce, law, and management, University of the Witwatersrand, Johannesburg, 31 March 2023.

Declaration

I, Hasita Jetha, hereby declare that this is a submission of a research report in partial fulfilment of the requirements for the degree of Master of Commerce at the University of the Witwatersrand, Johannesburg. I further state that this report represents my own original and unaided work and has not been submitted elsewhere for examination purposes or for purposes of being awarded a degree at any other university within South Africa or abroad. The report, which has been assessed via Turnitin for plagiarism, contains a reference list where the necessary citations are made using the APA Harvard referencing style.

Signed: Hasita Jetha

Student number: 1374810

Date: 31/03/2023

Abstract

Background: This study investigates the attributes and characteristics of cryptocurrency investors in South Africa and the attributes of cryptocurrencies that drive investment or non-investment.

Objectives: This study aims to explore the demographics and sociodemographic factors of cryptocurrency investors as well as the emotions and biases that impact investors' decisions to invest in cryptocurrency in order to investigate the individuals who invest in cryptocurrency and the reasons why they invest in cryptocurrency.

Methods: A sample of 298 South African residents aged 18 and above completed an online survey that assessed their cryptocurrency ownership, demographics, motives for investment, attitudes toward cryptocurrency, and other relevant variables. Descriptive statistics and logistic regression analyses were conducted to examine the relationship between these variables.

Results: The results showed that cryptocurrency investors are more likely to be males, under the age of 35, who are currently employed and have higher income levels. The individuals' main motives for investing in cryptocurrency were the opportunity to obtain high returns and the new technology that cryptocurrency encompasses. In addition, the results showed that attitudes toward cryptocurrencies significantly impact their decision to invest in cryptocurrency.

Conclusion: These findings suggest that more information relating to the risks involved in cryptocurrency investment as well as the potential of cryptocurrency to be used as a medium of exchange is required among individuals to protect themselves against losses and simultaneously allow them to take advantage of the lucrative benefits that cryptocurrencies offer. Furthermore, policymakers, the government, and businesses require more information regarding cryptocurrencies in order to have the necessary policies in place and to stay competitive.

Keywords: Behavioural finance, Bitcoin, cryptocurrencies, digital currencies, fintech, financial literacy, herding behaviour, investment, optimism, overconfidence, trust, risk

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Dedication

I dedicate this research report to God, who has blessed me with the intellectual capacity, perseverance, and strength to complete this research project. I am grateful for the guidance and wisdom that He has provided me throughout my academic journey. I also devote this research to my parents, who have always supported and encouraged me to pursue my dreams. Their unwavering love and dedication have been a constant source of strength throughout my academic journey.

Gratitude

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Table of contents

Understanding the attributes and characteristics of cryptocurrency ownership: A South African study 1

Declaration 2

Abstract 3

Acknowledgements 4

Table of figures 9

List of tables 11

Chapter 1 – Introduction 12

1.1 Rationale 12

1.2 Research problem 14

1.3 Research purpose 14

1.4 Significance of the research 14

1.5 Research question 15

Chapter 2 – Literature review 16

2 Introduction 16

2.1 What is cryptocurrency? 16

2.1.1 Bitcoin 17

2.2 Behavioural finance theory 18

2.2.1 Herding 20

2.2.2 Overconfidence bias/ self-attribution 21

2.2.3 Optimism bias 22

2.2.4 Loss aversion 23

2.2.5 Confirmation bias 24

2.2.6 Sentiment 24

2.3 Awareness and knowledge of cryptocurrency 25

2.4 The attributes and characteristics of cryptocurrency investors 26
2.5 Trustworthiness 27
2.6 The attributes of cryptocurrency that drive investment 27
2.7 The attributes of cryptocurrency that drive non-investment 28
2.8 Conclusion 29
Chapter 3 – Method 30
3 Introduction 30
3.1 Research design 30
3.2 Population and study sample 30
3.3 Sampling technique 31
3.4 Data collection 31
3.5 Instruments 31
3.6 Data analysis 32
3.7 Reliability and validity of the study 37
3.8 Ethical consideration 37
Chapter 4 – Results and Discussion 39
4 Introduction 39
4.1 Demographic variables of the sample 39
4.1.1 Ownership and awareness of cryptocurrency of the sample 43
4.1.2 Risk appetite of the sample 44
4.1.3 Financial literacy and Bitcoin knowledge of the sample 45
4.1.4 Attitude toward cryptocurrency 46
4.1.5 The attributes of cryptocurrency that drive the investment in cryptocurrency 47
4.2 The attributes and characteristics of cryptocurrency investors in South Africa 48
4.3 What is the level of awareness of cryptocurrency in South Africa? 53

4.4 The attributes of cryptocurrency that drive individuals to invest in cryptocurrency 54

4.5 The attributes of cryptocurrency that drive the non-investment in cryptocurrency 56

4.6 Trust in the South African rand, the Central Bank, and domestic banks 57

4.7 The impact of an individual's emotions and other biases on their investment decision 59

4.7.1 Overconfidence 60

4.7.2 Herding and Optimism bias 63

4.8 Logistic regression results 64

4.8.1 The attributes and characteristics of cryptocurrency investors in South Africa 64

4.8.2 The level of awareness of cryptocurrency in South Africa 66

4.8.3 The impact of an individual's emotions and other biases on their decision to invest in cryptocurrency 68

4.9 Discussion 69

4.10 Does a person's emotions and other biases impact their decision to invest in cryptocurrency in South Africa? 70

4.10.1 Herding 70

4.10.2 Overconfidence 70

4.10.3 Optimism 72

4.10.4 Attitude toward cryptocurrencies 72

4.11 What is the level of awareness of cryptocurrency in South Africa and do investors understand the risks involved in cryptocurrency investment? 73

4.12 What are the attributes and characteristics of cryptocurrency investors in South Africa? 74

4.12.1 Ownership 74

4.12.2 Trustworthiness 76

4.13 What are the attributes of cryptocurrency that drive the investment of cryptocurrency in South Africa? 77

4.14 What are the attributes of cryptocurrency that drive non-investment of cryptocurrency in South Africa? 79

Chapter 5 – Conclusion 81

5 Introduction 81

5.1 Conclusion on the main findings of this study 81

5.2 Limitations of this study 83

5.3 Areas for further research 83

References 85

Appendix B – Binomial logistic regression 104

Table of figures

Figure 1 The market capitalisation of the top ten cryptocurrencies 18
Figure 2 A bar graph showing the share of cryptocurrency ownership of the sample 44
Figure 3 A donut graph showing the risk appetite of the sample 45
Figure 4 A bar graph showing the financial literacy of the sample 46
Figure 5 A bar graph showing the respondent's basic cryptocurrency knowledge ... 46
Figure 8 A pie graph showing the gender of cryptocurrency investors 48
Figure 9 A bar graph showing the age of cryptocurrency investors 48
Figure 10 A bar graph showing the highest level of education of cryptocurrency investors 49
Figure 11 A bar graph showing the employment status of cryptocurrency investors 49
Figure 12 A bar graph showing the financial wealth status of cryptocurrency investors 50
Figure 15 Funnel graphs showing cryptocurrency investors' main use for cryptocurrency 53
Figure 16 Pie graphs showing the investors' basic Bitcoin knowledge 54
Figure 17 A bar graph showing the attributes of cryptocurrency that drive investment among those who have an interest in cryptocurrency investment 55
Figure 18 A bar graph showing the attributes of cryptocurrency that drive investment among those who have an interest in cryptocurrency investment 56
Figure 19 A bar graph showing the attributes of cryptocurrency that drive non-investment among those who do not have an interest in cryptocurrency investment57
Figure 20 A bar graph showing cryptocurrency investors' trust in the South African rand, the SARB, and domestic banks 58
Figure 21 A bar graph showing non-investors' trust in the South African rand, the SARB, and domestic banks 58
Figure 22 Bar graphs showing the beliefs of cryptocurrency investors regarding cryptocurrency 60
Figure 23 A bar graph showing the financial literacy of cryptocurrency investors 61
Figure 24 A bar graph showing the financial literacy of those who have not invested in cryptocurrency 61

Figure 25 A bar graph showing the Bitcoin knowledge of cryptocurrency investors. 62
Figure 26 A bar graph showing the Bitcoin knowledge of those who have not invested in cryptocurrency..... 62
Figure 27 A bar graph showing the risk appetite of cryptocurrency investors 63
Figure 28 A bar graph showing the risk appetite of those who have not invested in cryptocurrency..... 63
Figure 29 A pie graph showing the percentage of those interested in cryptocurrency investment who are likely to invest due to herding behaviour 64

List of tables

Table 1 Summary of variables included in this study 34
Table 2 Frequency table for the gender of the sample 39
Table 3 Frequency table for the age of the sample 40
Table 4 Frequency table for the highest qualification of the sample 40
Table 5 Frequency table for the employment status of the sample 41
Table 6 Frequency table for the taxable income of the sample 42
Table 7 Frequency table for the financial wealth status of the sample 42
Table 8 Frequency table for the profession of the sample 43
Table 9 Overall statistical significance of the model 65
Table 10 Explained variation 65
Table 11 Observed and predicted classification 66
Table 12 Overall statistical significance of the model 67
Table 13 Explained variation 67
Table 14 Observed and predicted classification 67
Table 15 Overall statistical significance of the model 69
Table 16 Explained variation 69
Table 17 Observed and predicted classification 69
Table 18 Displays the results for regression 1 104
Table 19 Displays the results for regression 2 108
Table 20 Displays the results for regression 3 110

Chapter 1 – Introduction

1.1 Rationale

Cryptocurrency has revolutionised the world of digital finance and has lured much attention from regulators, the media, academics, businesses, and consumers around the world (Ballis and Verousis, 2022; Hidajat, 2019; Ionescu and Radulescu, 2019; Stix, 2021). Cryptocurrency has the potential to be used in a variety of ways namely, as a medium of exchange (either for legal or illegal activities), to transfer funds anonymously, as a store of wealth (similar to gold), or as a speculative investment with the possibility of capital appreciation (Stix, 2021). Bitcoin, the first cryptocurrency, was created in 2009 to allow users to transfer money over the internet. However, it is interesting to note that investors have instead, mainly adopted cryptocurrency for speculative purposes (Al-Mansour, 2020; Baek & Elbeck, 2015; Glaser, Zimmermann, Haferkorn, Weber, & Siering, 2014; Hidajat, 2019; Henry, Huynh, Nicholls, & Nicholson, 2019; Zouhair and Kasraie, 2019; Nakamoto, 2008). Bianchetti, Ricci, and Scaringi (2018) studied the risk of financial bubbles related to two cryptocurrencies, Bitcoin and Ether, and reported that both cryptocurrencies displayed evidence of bubble behaviour. Financial bubbles spawn conditions prone to a significant crash in the price of the cryptocurrencies. This poses the question of why individuals invest in cryptocurrency. Whilst past research has focused on the technical aspects of cryptocurrency, there is limited research relating to the underlying driving force of cryptocurrency becoming what it is today, being the users (Glaser et al., 2014; Lo and Wang, 2014).

Cryptocurrencies may be attractive to users for several reasons as they provide an attractive alternative method of payment for individuals who do not trust the traditional financial system, the anonymity trait that it possesses is a desirable feature, and it may be intriguing to those interested in new technology, or the transparency that it provides and the low costs involved may be attractive to users, and consumers may perceive a reduced risk of fraud or online theft (Glaser et al., 2014; Grinberg, 2012; Stix, 2021; Weber, 2014; Nurbarani and Soepriyanto, 2022; Nakamoto, 2008). However, cryptocurrency has no fundamental value. The value is most presumably determined by the attention gained from the public, which explains the extreme volatility in cryptocurrency prices (Baek and Elbeck, 2015; Bolt and Van Oordt, 2020; Hidajat, 2019; Ionescu and Radulescu, 2019; Venter, 2016). This results in the need for an

understanding of cryptocurrency investment to determine how its usage could impact the conventional financial system. This is because cryptocurrency competes with the government and other businesses for the same customers, resulting in a threat to the government and the conventional financial system. Moreover, cryptocurrency could be a threat to the users themselves as many may not understand the risks they are exposed to when investing in cryptocurrency (Steinmetz, von Meduna, Ante, & Fiedler, 2021).

The efficient market hypothesis, one of Eugene Fama's financial theories developed in 1965, assumes that stocks are always priced at their fair value as stock prices reflect all available information at any point in time. The theory assumes that investors always make rational decisions based on all available information (Fakhry, 2016). In considering the highly volatile nature of cryptocurrency, many researchers have differing standpoints relating to whether the cryptocurrency market is efficient or inefficient (Bui, 2022). Under the assumptions of the efficient market hypothesis, investors cannot realise abnormal returns because the market reflects all available information at all times and price movements are arbitrary (Hidajat, 2019).

On the other hand, in the 1970s Amos Tversky, Daniel Kahneman and Richard Thaler developed the theory of behavioural finance, which assumes that human behaviour is not always flawless and rational due to bounded rationality. In other words, investors' decisions are also bounded by psychological barriers, namely emotional and cognitive biases (Hidajat, 2019).

In the context of the cryptocurrency market, the occurrence of financial bubbles is not possible under the assumptions of the efficient market hypothesis (Hammond, 2015; Hidajat, 2019). Given that cryptocurrency has no fundamental value and the fact that the price of cryptocurrency is driven by the investors themselves (Al-Mansour, 2020; Bianchetti et al., 2018; Ionescu and Radulescu, 2019), this research paper aimed to study the cryptocurrency market from a behavioural finance perspective to determine the factors that impact South Africans who invest in cryptocurrency as well as the motives that influence their decision to invest to determine whether any cognitive or emotional biases contribute to the volatility of cryptocurrency prices.

1.2 Research problem

The growing interest in cryptocurrency could be a threat to our current financial systems, the government, businesses, and the general public (Baek and Elbeck, 2015; Fujiki, 2020; Henry et al., 2019; Stix, 2021; Zouhair and Kasraie, 2019). This is because digital currencies have the potential to be used in similar ways to conventional financial systems which poses a threat to conventional payment systems due to the competition arising between them to attract the same customers (Zouhair and Kasraie, 2019). Moreover, the growing demand for cryptocurrency may hurt domestic banks and other businesses as cryptocurrency offers lucrative benefits that the conventional system cannot such as low transaction costs, anonymity, and privacy (Glaser et al., 2014; Grinberg, 2012; Zouhair and Kasraie, 2019). Cryptocurrency is a relatively new concept that many of its investors do not understand well resulting in them experiencing significant losses, in turn leading to a major social impact (Fujiki, 2020).

These threats are significant and with the little information known by regulators – partially due to the anonymity of digital currencies – regarding the investment of cryptocurrency, the repercussions could be detrimental to a range of different parties (such as the government, domestic banks, or individuals).

1.3 Research purpose

The purpose of this study was to investigate the attributes and characteristics of South African cryptocurrency investors as well as their motives for cryptocurrency investment and the impact of an individuals' emotions or biases on their decision to invest in cryptocurrency. The study focused on the population that were cryptocurrency investors and those who intended to invest in cryptocurrency in the future. The study also aimed to gain an understanding of the attributes of cryptocurrency that were most attractive to cryptocurrency investors as well as the attributes of cryptocurrency that drove away non-investors who had no interest in cryptocurrency investment.

1.4 Significance of the research

The study makes a valuable contribution to South African literature by providing insights into the factors that impacted cryptocurrency investment in South Africa. The results of the study benefits regulators and the financial sector by helping them gain an understanding of the factors that impacted cryptocurrency investment for future policy setting and to avoid the destruction of the conventional system. The

understanding of why people purchased cryptocurrency determined whether people were purchasing cryptocurrency as a store of wealth or whether they were merely purchasing cryptocurrency due to public pressure, which helped to better understand the high price volatility of cryptocurrency.

The study also has the potential to expedite awareness among society which could then cause a transformation in the current financial system used in South Africa. This awareness and a spread of knowledge regarding cryptocurrency benefits the public who could adopt cryptocurrency as an alternative medium of exchange, thereby benefitting from the low transaction costs and other perceived benefits that cryptocurrency offers. A culmination of knowledge and awareness put investors at a lower risk of financial losses.

Similar studies had been carried out in developed countries such as Canada, Japan, America, Austria, and Germany. However, to the best of the researcher's knowledge, this study had not been carried out in South Africa – a developing country.

1.5 Research question

The research question for this study is:

1. What are the attributes and characteristics of cryptocurrency investors in South Africa?

The sub-questions include:

1.1. What is the level of awareness of cryptocurrency in South Africa?
1.2. Do cryptocurrency investors in South Africa understand the risks involved in cryptocurrency investment?
1.3. What are the attributes of cryptocurrency that drive the investment and non-investment of cryptocurrency in South Africa?
1.4. Does a person's emotions and other biases impact their decision to invest in cryptocurrency in South Africa?

Chapter 2 – Literature review

2 Introduction

This literature review provides an overview of the previous research on cryptocurrency. Specifically, previous literature on what cryptocurrency is, behavioural finance theory, awareness and knowledge of cryptocurrency, ownership of cryptocurrency, trustworthiness of cryptocurrency investors, as well as the benefits and disadvantages of cryptocurrency will be examined in this chapter. Furthermore, behavioural finance has been utilised as the theoretical framework to understand the impact of an individual's emotions and other biases on their decision to invest in cryptocurrency.

2.1 What is cryptocurrency?

The conventional financial system is characterised by trust, accountability, or oversight by a third party (for example, a central bank) (Chohan, 2017). It is centralised and far less transparent in comparison to digital currencies (Glaser et al., 2014). Distrust in the conventional financial system has arisen amongst the public due to breaches of trust such as the 2008 financial crisis, fraudulent activity, data breaches and higher than expected inflation (Böhme, Christin, Edelman, & Moore, 2015; Stix, 2021). The involvement of third parties in the conventional financial system provides the required mediation between a buyer and a seller, resulting in increased transaction costs. The increased transaction costs to third parties, make small transactions using the traditional payment system impractical (Nakamoto, 2008).

Cryptocurrencies propose a deviation from the traditional medium of exchange present in the financial structure (Alzahrani and Daim, 2019; Glaser et al., 2014; Weber, 2014). This proposed deviation is attractive considering global economic crises, wherein the public becomes apprehensive about the stability of government-backed currencies (Glaser et al., 2014; Kinney, 2021; Lammer, Hanspal, & Hackethal, 2020; Stix, 2021; Weber, 2014). Cryptocurrency is a digital currency, which has also been termed virtual currency (Nakamoto, 2008; Schuh and Shy, 2016; Venter, 2016). Digital currencies are a relatively new concept that has not yet been widely adopted, resulting in unfamiliarity regarding the actual meaning of the term. To understand what digital currency is, it is important to understand what is meant by the word “currency” in the conventional sense of the word. Currency, in its simplest form, is a medium of

exchange used in exchange for the provision of goods and services. Whereas digital currency is an entirely different form of exchange that is not linked to any physical or digital cash (Schuh and Shy, 2016; Velde, 2013; Venter, 2016;). This means that electronic forms of cash, such as money in an online bank account, are not digital currency. As seen with traditional currency, the value of a digital currency is derived from the supply and demand for it. In contrast to traditional currency, however, it is not backed by any government or authority but solely by the community that are participants of the virtual currency system (Venter, 2016). The first cryptocurrency, Bitcoin, will now be explored in further detail to understand what cryptocurrency is.

2.1.1 Bitcoin

The pseudonymous, Satoshi Nakamoto, revolutionised the world of digital currency with the development of the first cryptocurrency, Bitcoin, in 2009. Since the creation of Bitcoin, thousands of other digital currencies (known as Altcoins) have been created such as Ethereum, Ripple, Dash, Litecoin and Monero (Gurdgiev and O'Loughlin, 2020; Osterrieder, Lorenz, & Strika, 2016; Nurbarani and Soepriyanto, 2022). Bitcoin, however, continues to be the leading digital currency holding the largest market capitalisation among cryptocurrencies, with a market capitalisation of $543,022,924,352 on 30 March 2023 (Bolt and Van Oordt, 2020; Chohan, 2017; CoinMarketCap, 2022). Initially, the price of bitcoin ranged between $0 and $1 when it first entered the market, and it is currently priced at $28,085.59.20 on 30 March 2023 (CoinMarketCap, 2022). Since inception, the price of bitcoin has experienced extreme volatility and has displayed notable financial bubbles over the years (CoinMarketCap, 2022, Yanardağ, 2019). Figure 1 below shows the market capitalisation of the top ten cryptocurrencies.

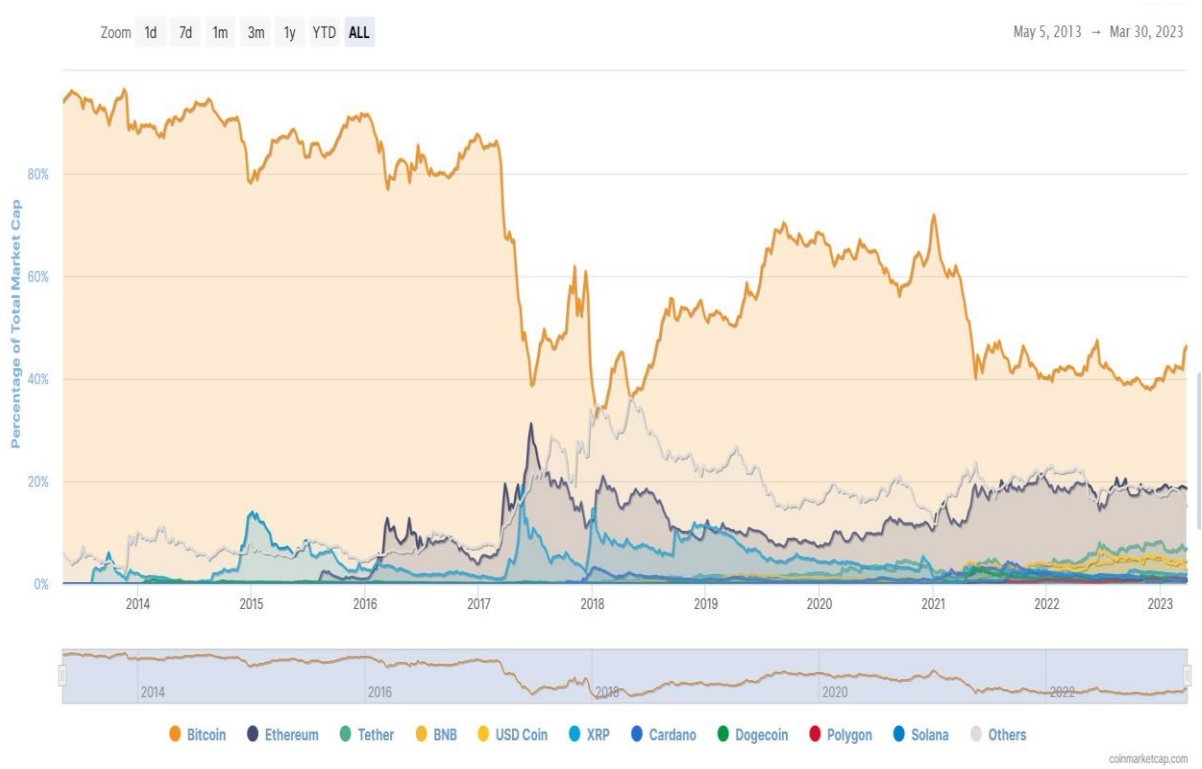


Figure 1 The market capitalisation of the top ten cryptocurrencies

Nakamoto described Bitcoin as a payment instrument that relies on blockchain technology. Blockchain is a peer-to-peer system wherein users validate transactions using cryptographic proof thereby minimising the risk of fraudulent counterfeits (Nakamoto, 2008, Walton and Johnston, 2018). Cryptographic proof, one of Bitcoin's primary benefits, relies on peer-to-peer technology whereby users validate transactions on a public ledger (a record of all transactions). All transactions are then secured using a unique cryptographic hash and stored on a blockchain – which represents all verified transactions on the network (Nakamoto, 2008). New bitcoins are created by mining which will become more difficult over time as the total supply of bitcoin is fixed at 21 million bitcoins (Bui, 2022, Yanardağ, 2019).

2.2 Behavioural finance theory

This section looks at the theories underpinning this study, first, by explaining the flaws of the efficient market hypothesis, and then the behavioural finance theory is explained in more detail. The efficient market hypothesis (EMH) developed by Eugene Fama in 1965, represents the basis upon which more recent financial theories have been developed (Poyser, 2018). The EMH argues that investors are rational and their investment decisions are not affected by any emotional biases but rather based on

maximising their expected utility (Bui, 2022; Safarli, 2022). The EMH states that a stock will always be priced at its fair value as the stock price immediately reflects all available information, thereby implying that the price of a stock on an exchange is never overvalued or undervalued (Fakhry, 2016; Joo and Durri, 2015). Furthermore, it is argued under the assumption of the EMH that stock price movements are completely random and unpredictable leaving no room for investors to outperform the market using technical or fundamental analysis – any profits realised by investors are merely a result of coincidence (Hidajat, 2019; Safarli, 2022). Another fundamental aspect of an efficient market is that stock prices remain relatively stable in the long term (Safarli, 2022).

Research has continuously shown that the EMH has numerous flaws in explaining the irrationality present in certain markets (Ballis and Verousis, 2022; Poyser, 2018). In such instances where irrational behaviour presents itself, behavioural finance – a mix of economics and psychology – has been useful in explaining why investors make decisions. The behavioural finance theory argues that investors do not always act rationally when making investment decisions, but rather that investors make financial decisions based on emotions and other cognitive errors (Fakhry, 2016; Ionescu and Radulescu, 2019; Joo and Durri, 2015; Youssef, 2022). The behavioural finance theory suggests that market prices are impacted by the emotional and cognitive biases present in the financial decisions of investors. This explains the deviation of stock prices away from their fundamental value in a market, known as market inefficiencies (Bassidi, Elkabbouri, Abdeljalil, & Sassi, 2013; Bikas, Jurevičienė, Dubinskas, & Novickytė, 2013).

Whilst the EMH has been the main premise of neoclassical finance for many years, it has ample pitfalls when it comes to interpreting the extreme fluctuations in cryptocurrency prices (Poyser, 2018). It has been argued that cryptocurrencies are merely speculative assets with no underlying fundamental value meaning that the value of cryptocurrencies is ultimately driven by behavioural biases and speculation on their future value (Coskun, Lau, & Kahyaoglu, 2020; Poyser, 2018). As a result, the price of cryptocurrencies undoubtedly displays extreme volatility and bubble-like behaviour as a result of herding and other biases, namely overconfidence, optimism, loss aversion, and confirmation bias as well as investor sentiment (Al-Mansour, 2020;

Hidajat, 2019; Poyser, 2018). Using behavioural finance to understand the impact of an individual's behavioural biases on their decision to invest in cryptocurrency and understand the attributes of cryptocurrency that drive the investment of cryptocurrency, this research paper will help to better understand the high price volatility of cryptocurrency (Baek and Elbeck, 2015; Bolt and Van Oordt, 2020; Venter, 2016). The following sections detail concepts of behavioural finance that have been utilised to assess the impact of an individual's emotions and other biases on their decision to invest in cryptocurrency.

2.2.1 Herding

As defined by Youssef (2022) herding behaviour is a concept used in behavioural finance that takes place "when investors ignore their private information and base their investment decision on their peers' ones". Herd behaviour in a market reduces the interconnection between information and the market due to a large number of investors following the crowd, causing the price of the stock to deviate from its fundamental value (Poyser, 2018). In the cryptocurrency market, there is an influx of noise traders which heightens the possibility of investors distorting the price of cryptocurrencies. Noise traders refer to the group of investors who trade based on heuristics rather than following the advice of rational and sophisticated investors (Poyser, 2018). It has been reported that noise traders present substantial herd behaviour as volatility increases (Bui, 2022). In times of declining economic conditions, cryptocurrency markets experience increased herd behaviour as traders make use of cryptocurrencies as a hedge against conventional financial assets (Bui, 2022).

Youssef (2022) investigated herding behaviour in the cryptocurrency market over a period using cross-sectional absolute deviation under static and time-varying models. Results from the study showed anti-herding behaviour under the static model and herding behaviour under the time-varying version for the duration of the period under study. In a similar study, Bouri, Gupta, and Roubaud (2018) concluded that substantial herding behaviour was present, and fluctuated over the period under investigation. Gurdgiev and O'Loughlin (2020) carried out a study to determine the impact of investor sentiment on the prices of cryptocurrencies, results showed that herding behaviour and anchoring have a direct impact on the price fluctuation of cryptocurrency. Jalal, Sargiacomo, Sahar, and Fayyaz (2020) studied herding behaviour in cryptocurrencies

in bullish and bearish markets using a quantile regression method among leading cryptocurrencies. The study revealed that herding behaviour is present in bullish markets as the results displayed that herding was prominent in the upper quantile. Another study carried out by Haryanto, Subroto, and Ulpah (2020) investigated the disposition effect and herding in Bitcoin. Results showed that herding behaviour was present in a bullish market trend when the price of bitcoin increases and in bearish market trends when bitcoin prices decrease.

Herding factors are important to understand as these may impact an individual's decision to invest in cryptocurrency and in turn cause the rapid price fluctuations in cryptocurrency prices.

2.2.2 Overconfidence bias/ self-attribution

Behavioural finance encompasses over-confidence as another major concept that impacts investors' financial decisions (Fakhry, 2016; Poyser, 2018). Overconfidence bias refers to the ideology of those who assume they have better information, and that their judgement is more reliable than that of others (Hidajat, 2019). Overconfident investors are more likely to participate in risky investment activities, such as cryptocurrency trading (Hidajat, 2019; Kim, Hanna, & Lee, 2022). Barber and Odean (2001) found that men are more inclined to be overconfident and generally trade more frequently and trade in more risky investments than women (Barber and Odean, 2001; Poyser, 2018).

Sudzina, Dobes, and Pavlicek (2021) investigated the impact of overconfidence and self-control on cryptocurrency investment using a binary logistic model. The study concluded that early cryptocurrency investors are more likely to be male, display overconfidence, and have less self-control. Tran (2019) examined the presence of overconfidence in the cryptocurrency market and specifically Bitcoin, Ethereum and Ripple. Using vector autoregression along with Granger causality and Impulse Response Function, the study found evidence of overconfidence bias in the cryptocurrency market as well as in the bitcoin and ripple investments. In an Indonesian study on university students, Syarkani and Tristanto (2022) investigated the impact of overconfidence, financial literacy and attitude on an individual's decision

to invest in cryptocurrency. The authors conclude that overconfidence and financial literacy has a positive impact on attitude and investment decision.

Overconfidence in relation to cryptocurrency investment is an important concept to gain an understanding of as overconfident investors may not have the relevant knowledge required to invest in cryptocurrency, thereby exposing themselves to unnecessary risk. Furthermore, this understanding will provide policymakers with more information regarding the categories of individuals who may need to be protected against these risks.

2.2.3 Optimism bias

Anamika, Chakraborty, and Subramaniam (2021) argue that investors have an optimistic sentiment toward cryptocurrencies. In turn, this optimistic sentiment increases investors' confidence concerning cryptocurrency returns, thereby trading volumes and cryptocurrency prices. Optimism bias refers to an individual's inclination to misperceive the probability of experiencing positive and negative outcomes (Hidajat, 2019). Optimism bias results in investors neglecting the possibility of negative returns and overemphasising the possibility of positive returns. This behavioural bias contributes to the price crashes experienced in the cryptocurrency market as investors tend to overreact to incidents in the market (Al-Mansour, 2020).

Younger investors with lower earnings and education levels tend to have a greater sense of optimism regarding the future of cryptocurrency (Benetton and Compiani, 2021). In a study investigating the behaviour of investors in Bitcoin and Ethereum markets, Aspembetova, Feng, and Chew (2021) found that Ethereum investors exhibit a pessimistic attitude toward the future of Ethereum and that Bitcoin investors display greater optimism concerning considerable systemic events. Using cross-sectional standard and cross-sectional absolute deviation, Caferra (2020) investigated the relationship between sentiment resulting from online news and behaviour in the cryptocurrency market. The author found that increased or decreased optimism impacts the dispersion of cryptocurrency returns. Anamika and Subramaniam (2022) studied the impact of investors' feelings derived from news headlines on cryptocurrency returns using a natural language processing technique. Results show that optimism based on news headlines resulted in cryptocurrency prices increasing following herding behaviour in the market. The study also revealed that new, small,

and more volatile cryptocurrencies are influenced by investor sentiment to a greater extent.

2.2.4 Loss aversion

Loss aversion refers to an individual's preference to avoid making losses rather than realising a profit (Nagel, 2018). This can hamper the investor's potential to realise a gain if the investor closes a trade too early fearing that the upward trend may turn against them (Ionescu and Radulescu, 2019). On the other hand, the investor may hold an unprofitable trade rather than selling, generating a greater loss. Loss aversion can be analysed through the lens of Prospect Theory (Abdellaoui et al., 2007; Hidajat, 2019). Prospect theory disputes the theory of expected utility – a theory which assumes that in conditions of uncertainty a rational investor will make investment decisions by ranking each investment based on the expected utility and selecting the option that provides the highest level of expected utility (Abdellaoui, Bleichrodt, & Paraschiv, 2007). However, the theory of expected utility does not hold due to the individual's tendency to feel losses more heavily than gains (Abdellaoui et al., 2007; Bui, 2022). In the 1970s, Kahneman and Tversky developed the prospect theory which states that individuals are willing to accept risks to avoid enduring a loss and risk-averse concerning gains. It assumes that individuals evaluate choices in terms of gains and losses and make decisions based on the deviation from a reference point, rather than in terms of their net assets (Abdellaoui et al., 2007; Levy, 1992). Al-Mansour (2020) examined the influence of behavioural finance factors on an individual's decision to invest in cryptocurrency using a survey with 112 participants. The results of the study showed that prospect theory, herding and heuristic theory considerably influenced investors' cryptocurrency investment decisions. Thoma (2020) studied the risk and return determinants in the cryptocurrency market under prospect theory using an extensive set of cryptocurrencies during the period 2014 to 2020. The results revealed that with high prospect theory value – an opinion of the investors on the value of a stock based on past return distribution and evaluated using prospect theory – cryptocurrencies tend to realise low returns in comparison to cryptocurrencies with low prospect theory value.

Using a quantitative technique Gupta and Shrivastava (2021) investigated whether loss aversion and herding influence an individual's investment decision in the Indian stock market using data collected through questionnaires from 323 participants

through questionnaires. The authors found that an investor's investment decision is heavily impacted by loss aversion, herding and the fear of missing out. In the cryptocurrency market, among other hypotheses, Nagel (2018) investigated whether loss-averse investors are less willing to take on risk in comparison to non-loss-averse investors. The results confirmed the author's hypothesis thereby proving that loss aversion impacts investors' investment decisions.

2.2.5 Confirmation bias

Confirmation bias impacts the way that individuals collect and interpret information. This bias causes an individual to subjectively follow the information that advocates for their beliefs rather than information that conflicts with their belief (Hidajat, 2019). For example, when an investor with the opinion that cryptocurrency is a good investment, experiences a price decrease, they will look for information that supports the idea that cryptocurrency is a good investment and assume that this is a momentary decline and the price will increase shortly (Tokarchuk and Donkohlova, 2018). Information-processing biases influence the price of cryptocurrencies due to the impact of traders' confidence in short-term price developments (Craggs and Rashid, 2016; Hidajat, 2019).

In a Chinese study, cryptocurrency investors showed evidence of confirmation bias when interpreting news from authorities, such as the government and central bank, as investors tend to increase trading volume in response to such news (Ballis and Verousis, 2022). In the Thai cryptocurrency market, Tangwattanarat (2017) investigated the perception of investors concerning their decision to invest in cryptocurrency and digital currencies. The study revealed that cryptocurrency investors are influenced by confirmation bias, overconfidence, optimism, and herding behaviour.

2.2.6 Sentiment

Investor sentiment in the cryptocurrency market influences investors' investment decisions as well as the returns realised by investors (Ballis and Verousis, 2022). In the context of the stock market, sentiment refers to the beliefs formed by investors regarding the riskiness of investing in stocks and future price developments of the asset (Baker and Wurgler, 2007). Rognone, Hyde, and Zhang (2020) investigated the influence of news related sentiments on the returns, volatility and volume of Bitcoin

and conventional currency. The authors found that Bitcoin responded differently in comparison to the conventional currencies – the return and volume of Bitcoin immediately rise in response to positive news sentiment and experience a delayed increase in response to negative news sentiment, whereas negative news sentiment negatively impacts conventional currency returns more rapidly. Anamika et al., 2021 examined how investor sentiment influences cryptocurrency prices using a questionnaire to collect data regarding investors' feelings regarding Bitcoin. The results revealed that Bitcoin returns increase when investors have an optimistic sentiment towards Bitcoin and that investor sentiment towards Bitcoin also impacts the prices of other cryptocurrencies.

2.3 Awareness and knowledge of cryptocurrency

The heightened media attention on cryptocurrency has resulted in an increased level of awareness among consumers. Stix (2021), who conducted 3 surveys among Austrian residents aged 14 or older, using a sample of 1 400 residents for each survey, found that (at the time of the survey) 64 per cent of the Austrian population were aware of cryptocurrency and of this, 37 per cent of respondents have no interest in cryptocurrency. In another study, a sample representative of German internet users, Steinmetz et al. (2021) who conducted an online survey reported that 83 per cent of respondents had heard of cryptocurrency with a low level of knowledge about cryptocurrencies whereas cryptocurrency owners were found to have a higher level of cryptocurrency knowledge. The Bank of Canada uses the Bitcoin Omnibus Survey (BTCOS) to determine Canadians' level of awareness of cryptocurrency, the 2018 BTCOS reported an increase of around 44 per cent in the awareness of Bitcoin from 2016 to 2018. The level of awareness among Canadians was 89 per cent in 2018 (Henry et al., 2019). Schuh and Shy (2016) performed a survey among U.S. consumers and reported that as of October 2015, about 47 per cent of their survey population were aware of any cryptocurrencies, the majority of whom were only slightly familiar with cryptocurrency. Another internet survey, conducted among 10 857 Japanese citizens, by Fujiki (2020) reported that in March 2018, 80 per cent of respondents were aware of cryptocurrency at the time of the survey.

The level of awareness of cryptocurrencies has increased at an expeditious rate around the globe (Stix, 2021). Gaining more information regarding the individuals who

are aware of cryptocurrencies and whether these individuals are aware of the risks related to cryptocurrency investors is important for policymakers.

2.4 The attributes and characteristics of cryptocurrency investors

With regards to demographic factors, owners are more likely to be young males, have a higher level of education, have higher pre-tax income, and have better financial knowledge than those with only an awareness of cryptocurrency (Fujiki, 2020; Henry et al., 2019; Lammer et al., 2020; Schuh and Shy, 2016; Stix, 2021;). In contrast to the aforementioned high level of financial knowledge of owners, Henry et al. (2019) found that 7.3 per cent of owners have lower financial knowledge while only 4.1 per cent of owners have greater financial knowledge despite a greater number of respondents with higher financial knowledge being aware of cryptocurrency.

In Austria, Stix (2021), reported that only 1.6 per cent of Austrian residents owned cryptocurrencies and a further 1.1 per cent had owned it in the past, but not at the time of the survey. Austrian residents with an intention to invest approximate a further 5 per cent of additional potential cryptocurrency owners (Stix, 2021). Among the German population, 9.2 per cent of German internet users owned cryptocurrency at the time that a survey was carried out, with Bitcoin being the most well-known cryptocurrency. A further 9.1 per cent of the German population owned cryptocurrency in the past but not at the time of the survey. A possible reason why consumers who have owned cryptocurrency in the past but do not currently hold any may be due to their perceived trust in the stability of the cryptocurrency system or the volatility of the price of cryptocurrency (Steinmetz et al., 2021, Henry et al., 2019). In another study, Henry et al. (2019) reported that approximately 5 per cent of the Canadian population owned Bitcoin, which increased from 3 per cent in 2016. Another study carried out by Schuh and Shy (2016) reported that the share of ownership among U.S. consumers in 2015 was less than 2 per cent. A further study carried out on Japanese citizens reported that 2.2 per cent of the population owned cryptocurrency at the time of the survey (Fujiki, 2020). It is interesting to note that among Japanese cryptocurrency owners in 2018, Fujiki (2020) reports that 39 per cent of the owners had little to no understanding of cryptocurrencies and only about half of these owners made a profit from their investment.

2.5 Trustworthiness

In relation to cryptocurrency, trust refers to an individual's trust in blockchain technology as well as the individual's trust in the government and the current financial system. Cryptocurrency is a virtual payment system that is decentralised thereby diminishing the need for users to place their trust in third parties (Grinberg, 2012; Lo and Wang, 2014; Schuh and Shy, 2016). According to a survey carried out by the Bank of Canada, Henry et al. (2019) reported that 19 per cent of Canadian Bitcoin owners' main reason for investment was due to their distrust of conventional currency or banks. Stix (2021) reported similar findings regarding the motives for the decision to invest in cryptocurrency, with about 25 per cent of owners investing in cryptocurrency due to their distrust of banks or the Euro. In contrast to this, only about 10 per cent of consumers in the U.S. are cryptocurrency investors due to their distrust of banks or conventional currency (Schuh and Shy, 2016). Some individuals are rather reluctant to purchase cryptocurrency due to their lack of trust in the relatively new cryptocurrency system as a whole, or because they do not trust the stability of the price of cryptocurrency (Henry et al., 2019; Steinmetz et al., 2021).

Gaining an understanding of the level of trust that individuals have in the new technology, the government and conventional currency will help identify the attributes and characteristics of cryptocurrency investors.

2.6 The attributes of cryptocurrency that drive investment

Cryptocurrencies can be seen as a means to reduce the transaction costs incurred by users (Walton and Johnston, 2018). Ermakova, Fabian, Baumann, Izmailov, and Krasnova (2017) and Stix (2021) found that 12 per cent and 25 per cent of consumers (in their respective studies) chose to invest in cryptocurrency to benefit from the low transaction costs that cryptocurrency provides. Most users reported that the speculative opportunity or the store of value provided by the cryptocurrency was their main motive for owning cryptocurrency (Henry et al., 2019; Steinmetz et al., 2021; Stix, 2021). Another motive for owning cryptocurrencies includes the anonymity and privacy of the blockchain system as users are identified as public keys rather than by name. This allows participants to transact or transfer funds anonymously. In studies carried out by Steinmetz et al. (2021) and Schuh and Shy (2016), the anonymity and privacy feature has been reported as the main motive of approximately 14 to 32 per cent of

German and American cryptocurrency owners. Other incentives that cryptocurrencies offer to consumers is the innovative technology, the ability to administer irreversible transactions (a transfer can be sent back to the payer only once it has been accepted by the payee), the transparency in the way that new coins are created (a process known as ‘mining’), as well as the removal of inflation due to the predetermined total supply of 21 million coins (Alzahrani and Daim, 2019; Walton and Johnston, 2018, Stix, 2021, Nakamoto, 2008; Weber, 2014).

The benefits of cryptocurrencies will provide more information relating to the motives that drive an individual’s cryptocurrency investment. Gaining an understanding of these motives will be useful to the government and domestic banks in order to remain competitive.

2.7 The attributes of cryptocurrency that drive non-investment

A study performed by Arias-Oliva et al. (2019) reported that the risks inherent in cryptocurrency are not found to be a relevant factor for investors regarding their decision to invest in cryptocurrency. In saying this, it does not mean that the risks attached to investing in cryptocurrency do not play a part in consumers’ intention to invest in cryptocurrency (Arias-Oliva et al., 2019; Stix, 2021). Zhao and Zhang (2021) found that investment experience was found have a more significant impact on the decision to purchase cryptocurrency than the financial knowledge of investors. In studies performed by Schuh and Shy (2016), Fujiki (2020) and Steinmetz et al. (2021) it was found that owners of cryptocurrency are more willing to take on a higher level of risk to reap the benefit of higher returns. Furthermore, Fujiki (2020) reported that approximately 81 per cent of cryptocurrency owners hold other risky investments in comparison to approximately 58 per cent of nonowners holding other risky investments.

There is a substantially higher level of risk involved when investing in cryptocurrency due to the volatile prices, with cryptocurrencies having considerably higher annualised volatility than any conventional currency or other financial assets (Osterrieder et al., 2016; Steinmetz et al., 2021). This high level of volatility, however, creates an opportunity for owners of cryptocurrency to earn quick money (Fujiki, 2020). Other risks associated with cryptocurrency noted by past research that impact consumers’

intention to invest in cryptocurrency is the fact that blockchain technology is a fairly new phenomenon resulting in consumers being reluctant to trust the new technology, or that consumers fear that cryptocurrency is susceptible to cyber hacking wherein investors are exposed to the risk of losing their money (Henry et al., 2019; Steinmetz et al., 2021). Many cryptocurrency users have also reported being a victim of fraudulent cryptocurrency exchanges as a result of the deregulated market, resulting in another reason why people are reluctant to invest in cryptocurrency (Weber, 2014). Although the anonymity feature of cryptocurrency presents as a key benefit of the digital currency platform, it has also provided an opportunity for illegal activities such as the sale of illegal goods, money laundering, and tax evasion (Zouhair & Kasraie, 2019).

Gaining an understanding of the motives that drive the non-investment in cryptocurrency sparks the need for governments to impose policies to regulate the world of digital currencies (Fujiki, 2020; Schuh and Shy, 2016).

2.8 Conclusion

The heightened media attention on cryptocurrency caused a considerable number of consumers to invest in cryptocurrency, which could have been driven by consumers feeling that they may be missing out on an investment opportunity. These individuals may not be aware of the risks they are exposed to as cryptocurrency owners (Angerer, Hoffmann, Neitzert, & Kraus, 2021; Chohan, 2017). Gaining a comprehensive understanding of the demographic and behavioural characteristics of individuals who invest in cryptocurrency can guide policymakers in determining which categories of individuals may need protection against the risks associated with these investments (Steinmetz et al., 2021; Zouhair and Kasraie, 2019).

Chapter 3 – Method

3 Introduction

The purpose of this study was to identify the level of awareness of South Africans regarding cryptocurrency, the share of ownership among the South African population, their demographics, and their motives to invest in cryptocurrencies. This chapter consists of the methodology that was structured to meet the purpose of this study. The chapter includes the following: the research design, followed by the population and study sample, instrumentation, data collection and data analysis. Thereafter, followed by a discussion of the reliability and validity of the study and the ethical considerations.

3.1 Research design

This study is within the positivist worldview. This approach supports the belief that objective facts can be quantified to explain an individual's behaviour (Firestone,1987). The study adopted a quantitative research method which set out to interpret what caused a change in social facts using objective measurement and quantitative analysis (Firestone, 1987). This approach allowed the primary researcher to form, confirm, or validate relationships between variables in order to determine the attributes and characteristics of cryptocurrency investors (Leedy, 2021). A non-experimental design was used which was suitable as the variables in the research could not be manipulated (Radhakrishnan, 2013).

3.2 Population and study sample

The target population for this study comprised the adult South African population aged 18 and older who used the internet. The target population was limited to internet users as the use of blockchain technology required the use of the internet.

In accordance with Leedy (2021), a sample size of 400 was required to conduct a meaningful analysis when the target population exceeded 5,000. This study used a sample size of 400 participants with the expectation of a 50% response rate yielding 200 participants. The primary researcher believed that 200 participants would be representative of South African internet users above the age of 18. This is supported by previous research conducted by Ermakova et al. (2017), wherein a sample size of 98 participants was acquired. Another similar study carried out by Walton and Johnston (2018) yielded a sample size of 237 participants. This project acquired a sample size of sample size of 298 responses, from which 5 responses were removed

due to the respondents failing to answer all the questions. As a result, the final sample size was 293 participants, which is well above the desired minimum sample size of 200 responses.

3.3 Sampling technique

The study adopted a non-probability sampling technique as the researcher needed to use judgement in determining the participants in the study. The need for the primary researcher to apply judgement when selecting the sample used in this study arose due to the large population size and the need to focus on South Africans above the age of 18 who used the internet (Etikan et al., 2016). As such, purposive sampling was used for a focus to be placed on a sample of individuals with the characteristics. Purposive sampling limited the likelihood of survey participants who did not conform to the purpose of this study (Etikan et al., 2016). Thereafter, snowball sampling was used whereby participants were able to send the link to the survey to their friends and family.

3.4 Data collection

In this study, primary data was used as the primary researcher administered an online survey, using Google Forms, and sent to South African internet users to collect the data. A link to the survey was shared on the social media platform, LinkedIn, and was also shared with colleagues and friends via email. A link to the survey was also shared with students at the University of the Witwatersrand. The advantage of using an online survey was that it enabled the researcher to reach a geographically spread sample. Surveys were also easy to utilise, time and cost efficient, and convenient for participants (Van Selm and Jankowski, 2006).

3.5 Instruments

An online survey (see Appendix A for the survey) was designed, based on past literature, and incorporated questions taken from the published literature that used a similar approach to this study. Answers to the survey questions were marked on a Likert scale from 1 to 5, with 1 being of least importance/strongly disagree and 5 being of most importance/strongly agree.

Part 1 included questions regarding the awareness of cryptocurrency. To avoid confusion among participants regarding what cryptocurrency refers to, a list of the top 10 cryptocurrencies, according to market capitalisation, was inserted into the online

survey. If a participant was not aware of cryptocurrency, they were diverted to part 9 of the survey. Part 2 included questions regarding the ownership of any cryptocurrency. Part 3 of the survey was conditional upon non-investment in cryptocurrencies and contained questions regarding the participants' interest in purchasing cryptocurrency, such as whether they intended to purchase cryptocurrency or never intended to purchase cryptocurrency. Participants with no intention to invest in cryptocurrency were diverted to part 8 of the survey. Part 4 was conditional upon ownership and comprised questions regarding the respondents' main use of cryptocurrency. Part 5 covered questions relating to the participant's trust in the South African Rand, the South African Reserve Bank, as well as domestic banks within South Africa. Part 6 of the survey contained questions regarding the participants' attitudes towards cryptocurrency, such as whether cryptocurrency offered an advantageous alternative to the conventional payment system. Part 7 comprised questions relating to a participant's motives that drove their decision to invest in cryptocurrency or their intention to invest. Part 8 of the survey was conditional upon non-ownership of cryptocurrency and no intention to invest in cryptocurrency and included questions regarding the participants' reasons for not wanting to invest in cryptocurrency. Part 9 included questions regarding the financial literacy of the participants. The questions in part 9 had been taken from similar past research and had been used by Henry et al. (2019) and Stix (2021). More specifically, questions 9.4 – 9.6 had been adapted from the "Big Three" questions developed by Lusardi and Mitchell (2011), which had been used in many academic papers to study the financial literacy of respondents (Henry et al., 2019). Part 10 comprised questions relating to the respondents' risk appetite as well as their holdings of other financial assets. Finally, part 11 incorporated questions regarding the participants' sociodemographic information. Fessler and Schürz (2018) had found that information regarding an individual's ownership or rental of real estate and ownership of a business indicated the individual's net wealth. As such, the questions in part 11 included questions regarding the ownership of a home to classify individuals into their respective financial wealth categories (Henry et al., 2019; Fessler and Schürz, 2018; Stix, 2021).

3.6 Data analysis

The data was inserted onto an Excel spreadsheet with the required labels and codes and then reviewed for any missing data and summed up. The level of statistical

probability was set at 0.05 when analysing the data (Leedy, 2021). Statistical Package for the Social Sciences (SPSS) version 28.0.1.0 was used to analyse the data and identify relationships among the variables. The research questions of this project were analysed using descriptive and inferential statistics (Steinmetz et al., 2021). Descriptive statistics were calculated for all variables used in this study to identify and relationships and meaningful information. Specifically, descriptive statistics were used to determine the motives for investment and non-investment in cryptocurrency by interpreting the frequencies of the independent variables, such as the investor's investing due to the fear of missing out on an investment opportunity or their lack of trust in the South African Rand. To assess whether investors understand the risks involved in cryptocurrency investment, frequencies were calculated between investors (dependent variable) and Bitcoin knowledge (independent variable). Descriptive statistics were suitable for this study as it required summarising large datasets which helped in demonstrating the patterns and trends found in the datasets (Leedy, 2021).

In accordance with the central limit theorem, a sample size greater than 30 can be regarded as normally distributed (Field, 2013). The sample size acquired for this study was 293 participants and as a result, normally distributed. All the relevant assumptions required for binomial logistic regressions were met. Thus, logistic regression analysis was utilised to identify any meaningful information and address the research questions of this study.

Logistic regressions were performed between investment (dependent variable) and demographics, sociodemographic factors, and trust (refer to table 1 for the various independent variables within these categories). This was to determine the attributes and characteristics of cryptocurrency investors. A second regression was run to determine the relationship between cryptocurrency awareness (dependent variable) and demographic factors, and Bitcoin knowledge (independent variables). A third regression was performed to determine the impact of behavioural factors such as an individual's attitudes and biases toward cryptocurrency on their decision to invest. The dependent variable for this regression was investment and the independent variables utilised for this regression were demographic factors, financial literacy, attitude towards cryptocurrency, and risk appetite (refer to table 1 for the details relating to these variable categories). The equations for the regressions are as follows:

Regression 1:

Investment = β0 + βDemographics + β2Sociodemographics + β3trust + εi

Regression 2:

Awareness = β0 + β1Demographics + β2Bitcoin knowledge + εi

Regression 3:

Investment = β0 + βDemographics + β2Financial literacy + β3Attitude + β4Risk appetite + εi

Where,

ε: Error term

β0: Constant

Table 1 Summary of variables included in this study

Variable	**Description**
Dependent variables	**The two dependent variables are used separately to run different logistic regressions**
Awareness	Awareness of cryptocurrencies was derived by asking whether participants had heard of Bitcoin or other cryptocurrencies. Participants who were aware of cryptocurrency were given a score of 1, and a score of 0 was given to participants who were unaware of cryptocurrencies.
Investment	Cryptocurrency investment was derived by asking participants whether they (i) currently owned bitcoin, (ii) currently owned another cryptocurrency, (iii) owned cryptocurrencies in the past but not anymore, (iv) never owned cryptocurrency but had an interest in purchasing cryptocurrency, (v) merely knew of cryptocurrency, or (vi) knew of cryptocurrency but had no interest in purchasing cryptocurrency. A score of 1 was given for answers (i) and

	(ii), and a score of 0 was given for answers (iii), (iv) and (v).
Independent variables	
Main use for cryptocurrency	Participants were given questions regarding their main use of cryptocurrency (store of wealth, a speculative investment, medium of exchange, to transfer funds anonymously) and were required to select from the options "strongly agree, agree, neutral, disagree, strongly disagree". Responses were scored from 0 to 4 with 4 being strongly agree and 0 being strongly disagree.
Trust	Participants were given questions regarding their trust in the South African rand, the South African Reserve Bank, domestic banks in South Africa, and financial advice provided by their bank. Participants were required to select from the options "strongly agree, agree, neutral, disagree, strongly disagree". Responses were scored from 0 to 4 with 4 being strongly agree and 0 being strongly disagree.
Motives for cryptocurrency investment	Participants were given questions regarding their main motive for investing or intention to invest in cryptocurrency (low transaction costs, anonymity feature, high returns, to make quick money, to avoid missing out on an investment opportunity, lack of trust in South African banks/or the government, transparency, expectation to outperform traditional investments, it is the future of online spending, interest in new technology) and were required to select "yes" or "no". A score of 1 was given to participants who answered yes, and a score of 0 was given to those who answered no.

Motives for non-investment	Participants were given questions regarding their main motive for not wanting to invest in cryptocurrency (do not understand it, it is often not accepted for payment, content with the conventional financial system, excessive risks, not regulated, do not trust the new technology, insufficient funds to invest, high level of fraud or online theft) and were required to select "yes" or "no". A score of 1 was given to participants who answered yes, and a score of 0 was given to those who answered no.
Attitude toward cryptocurrency	Participants were given questions regarding their attitude towards cryptocurrency (it offers advantages, positive returns are very likely, losses are very likely, there is a great risk of fraud and online theft, and high exposure to volatility against the rand) and were required to select from the options "strongly agree, agree, neutral, disagree, strongly disagree". Responses were scored from 0 to 4 with 1 being strongly agree and 5 being strongly disagree.
Financial literacy	Financial literacy was derived by asking participants basic financial questions relating to basic compound interest, inflation, and investment knowledge. A score of 1 was given to participants who answered the questions correctly, and a score of 0 was given to those who answered incorrectly.
Risk appetite and other asset holdings	Participants were asked a question regarding their risk appetite. Those with a high risk appetite, meaning respondents who answered yes to substantially high risk were given a score of 0, those who stated above-average risk were given a score of 1, those who stated average risk appetite were given a score of 2, those who stated below-average were given a score of 3 and those who were not willing to take on any risk were given a score of 4.
Sociodemographic factors	

Level of education	Respondents whose highest level of education was grade 12 and below were scored as a 0, respondents whose highest level of education was a higher certificate were scored as a 1, diplomas were scored as a 2, and respondents whose highest level of education was an undergraduate were scored as a 3, and postgraduate degrees were scored as a 4.
Employment	Respondents were given a score of 0 if they were employed, 1 if they were unemployed, 2 if they were a student and 3 if they are retired.
Financial wealth	Participants were given a score of 0 if they owned their place of residence and their own business, 1 if they own their residence, 2 if they rent their place of residence and own a business, 3 if they rent their residence and no don't own a business, and 4 if they neither rent nor own a business.

3.7 Reliability and validity of the study

The questions used in the survey were based on questions asked in published literature that used a similar approach to this study, which gave this proposed study its reliability. However, there were disadvantages to using a survey, such as threats to internal validity and reliability, as participants who did not understand the questions or may not have completed all the questions could have affected the results (Mathers, Fox, & Hunn, 1998). To prevent this, a pilot study was performed whereby the survey was handed out to 5 respondents in the School of Accounting. This helped the researcher to determine the effectiveness of the proposed survey in capturing the results that were required, and adjustments could have been made if needed. The researcher believed that the participants provided honest information and that the analysis of the data collected would provide validity to the proposed study's results and conclusions.

3.8 Ethical consideration

The researcher applied for ethical clearance due to the survey-based study requiring the participation of human beings. Ethical clearance was required to ensure that the

study did not affect the psychological wellbeing of participants and that the study led to beneficial results. As a result, the researcher applied for ethical clearance from the institution's ethics committee. Once the researcher obtained approval from the institution’s ethics committee, the survey was distributed to the relevant parties. The researcher ensured that participation in the survey was purely voluntary. All participants' anonymity was guaranteed in the resulting research report, and all information collected was kept confidential, only to be used for this study. Consent was obtained from participants to use the data collected in the proposed study, and participants were made aware of the aims of the study. The survey data was then accessed, transferred onto an Excel spreadsheet, and analysed by the researcher in SPSS.

Chapter 4 – Results and Discussion

4 Introduction

The results chapter displays an analysis of the data collected and results from the survey. Descriptive statistics have been used to summarise the characteristics of the data collected from the survey. Thereafter logistic regressions have been used to analyse the relationship between the dependent variables (ownership and awareness and one or more independent variables.

The raw data yielded a sample size of 298 responses, from which 5 responses were removed due to the respondents failing to answer all the questions. As a result, the final sample size was 293 participants.

4.1 Demographic variables of the sample

The demographic variables include gender, age, highest qualification, employment status, financial wealth, and profession of the respondent. As seen in Table 2, the gender distribution in the sample is roughly equal with 150 (51.2%) male, 141 (48.1 %) female, and 2 (0.7%) other gender respondents. The age of the sample population was dominated by younger respondents aged between 18 to 25 years old (50.9%). The second largest age group is 26- to 35-year-olds, with 18.1% of the sample falling within this category. The remaining age groups of the respondents of 36 to 45 years, 46 to 55 years, and above 55 years comprise 8.9%, 11.6%, and 10.6% of the sample population respectively (Table 3).

Table 2 Frequency table for the gender of the sample

Gender		
	Frequency	Percent
Male	150	51.2
Female	141	48.1
Other	2	0.7
Total	**293**	**100.0**

Table 3 Frequency table for the age of the sample

Age		
	Frequency	Percent
18-25	149	50.9
26-35	53	18.1
36-45	26	8.9
46-55	34	11.6
Above 55	31	10.6
Total	**293**	**100.0**

As shown in Table 4 The results show that a significant portion of the respondents have achieved tertiary education, with more than half the sample population holding an undergraduate or postgraduate degree, with 45 (15.4%) participants who attained an undergraduate degree and 116 (39.6%) participants who achieved a postgraduate degree. This was followed by 104 (35.5%) participants whose highest level of education was between grades 9 to 12, however, the majority of these respondents are still in the progress of achieving a higher level of education.

Table 4 Frequency table for the highest qualification of the sample

Highest Qualification		
	Frequency	Percent
Grade 9 and below, Grade 10, Grade 11, Grade 12	104	35.5
Higher certificate	9	3.1
Diploma	19	6.5
Undergraduate degree	45	15.4
Postgraduate degree	116	39.6
Total	**293**	**100.0**

Concerning the frequency distribution relating to the employment status of the sample population, the majority of the participants are employed or self-employed, accounting for 160 (54.6%) of the sample. 106 (36.2%) of the sample are students, 17 (5.8%) participants are unemployed and 3.4% are retired as can be seen in Table 5.

Table 5 Frequency table for the employment status of the sample

Employment status		
	Frequency	Percent
Employed or self-employed	160	54.6
Unemployed	17	5.8
Student	106	36.2
Retired	10	3.4
Total	**293**	**100.0**

The financial wealth status of the sample was determined by asking the respondents a question relating to whether they own or rent their place of residence and whether they owned a business, as well as which tax bracket they fall into. The results showed that a significant portion of the sample neither rent nor own a business, accounting for 102 (34.8%). This may be due to the reason that a large portion of the sample is students, with limited financial resources. This is followed by 70 (23.9%) participants who own their place of residence, 42 (14.3%) participants who own both, their place of residence and a business, and 9 (3.1%) participants who rent their place of residence while owning a business (as shown in table 7). With regards to the taxable income of respondents, the largest portion of participants fall within the taxable income bracket of less than R216 200, accounting for 89 (30%) participants. This was followed by 41 (14%) of participants falling within the taxable income bracket of exceeding R782 200 but equal to or not exceeding R1 656 600. Those who fell within the taxable income brackets of exceeding R216 200 but equal to or not exceeding R337 800 and, exceeding R337 800 but equal to or not exceeding R467 500 accounted for 9% each. Those who fell within the taxable income brackets exceeding R467 500 but equal to or not exceeding R613 600 and, exceeding R613 600 but equal to or not exceeding R782 200 taxable income brackets accounted for 5% and 4% respectively (as shown in table 5).

Table 6 Frequency table for the taxable income of the sample

Taxable Income		
	Frequency	Percent
Not exceeding R216200	89	30
Exceeding R216 200 but equal to or not exceeding R337 800	25	9
Exceeding R337 800 but equal to or not exceeding R467 500	26	9
Exceeding R467 500 but equal to or not exceeding R613 600	15	5
Exceeding R613 600 but equal to or not exceeding R782 200	11	4
Exceeding R782 200 but equal to or not exceeding R1 656 600	41	14
Exceeding R1 656 600	9	3
Total	293	100.0

Table 7 Frequency table for the financial wealth status of the sample

Financial Wealth		
	Frequency	Percent
Own residence and business	42	14.3
Own residence	70	23.9
Rent residence and own business	9	3.1
Rent residence	70	23.9
Neither rent residence nor own business	102	34.8
Total	**293**	**100.0**

The survey asked respondents to indicate their profession from a list of options and the majority of participants (62.1%) categorised themselves as working in business and administration (including finance). Education was the second most common profession amongst the sample, with 28 (9.6%) participants indicating that they fell into this field. Health and information technology and communication, each accounted for 17 (5.8%) participants each. While the legal profession was selected by 5 (1.7%) participants and science and engineering (including actuarial) was selected by 20 (6.8%) participants. The remaining respondents (8.2%) chose “other” (as depicted in table 8).

Table 8 Frequency table for the profession of the sample

Profession		
	Frequency	Percent
Business and admin (incl. finance)	182	62.1
Education	28	9.6
Health	17	5.8
ICT	17	5.8
Legal	5	1.7
Science and engineering (incl. actuarial)	20	6.8
Other	24	8.2
Total	**293**	**100.0**

4.1.1 Ownership and awareness of cryptocurrency of the sample

A significant portion of respondents, 97%, are aware of cryptocurrency. However, as depicted in figure 2, only 69 (24%) participants noted that they currently own cryptocurrencies, and a further 15 (5%) of participants owned cryptocurrencies in the past but not anymore. A notable 56 (19%) participants stated that they do not own cryptocurrency at present but have an interest in purchasing cryptocurrency. However, a large portion of the sample, accounting for 145 (51%) participants, did not show any interest in investing in cryptocurrency.

Respondents who indicated that they have never owned cryptocurrency were then asked a question relating to their intention to purchase cryptocurrency at some time. The results indicated that 58 participants expressed a positive attitude towards purchasing cryptocurrency, with 19 (6.5%) stating that it is very likely that they will purchase cryptocurrency at some time and a further 39 (13.3%) participants stating that it is somewhat likely. A significant portion of the sample stated that it was unlikely or highly unlikely that they would purchase cryptocurrency at some time, accounting for 39 (13.3%) and 27 (9.2%) participants respectively.

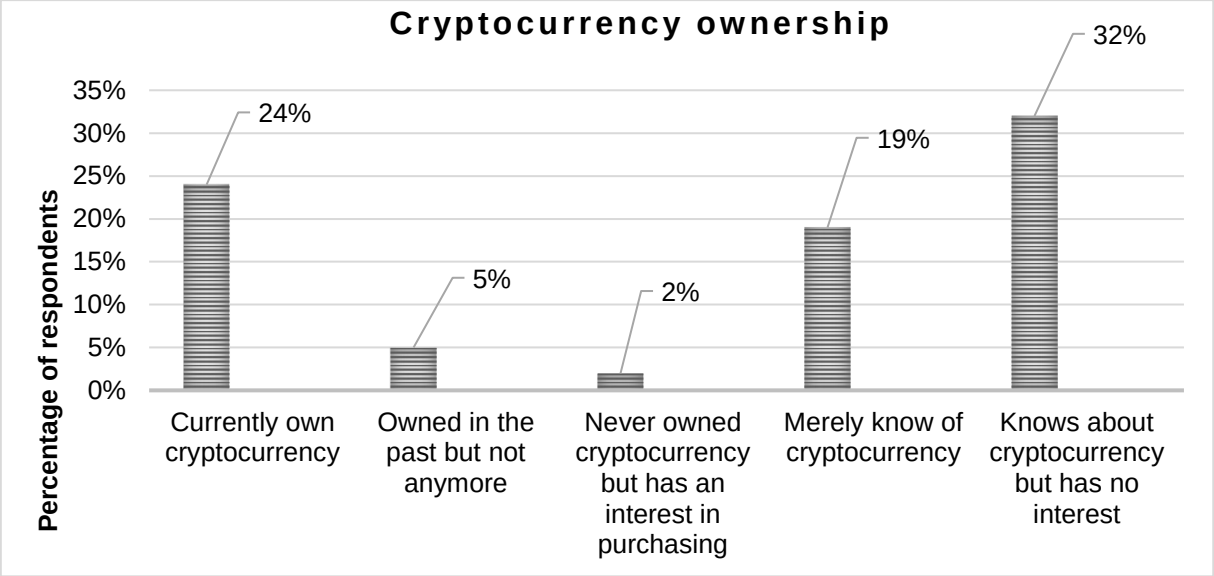


Figure 2 A bar graph showing the share of cryptocurrency ownership of the sample

4.1.2 Risk appetite of the sample

The respondents were asked to state whether they are willing to take on substantial, above-average, average, below-average, or no risk to assess the risk appetite of respondents. The results showed that 171 (58.4%) participants are high-risk takers, 82 (28%) participants are willing to take on average risk, 13 (4.4%) participants are only willing to take low risk, and 27 (9.2%) participants are not willing to take on any risk (as shown in figure 3).

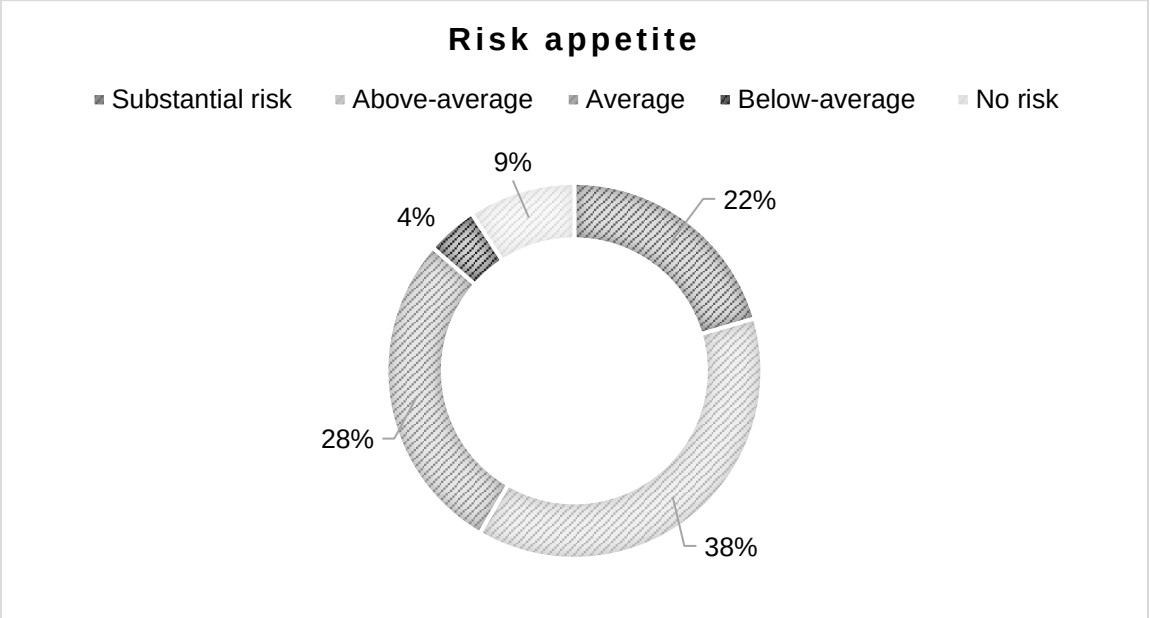


Figure 3 A donut graph showing the risk appetite of the sample

4.1.3 Financial literacy and Bitcoin knowledge of the sample

As shown in figure 4, the results suggested a high level of financial literacy among the respondents, with some participants displaying a better understanding of concepts such as interest and inflation than others. This is evident as 229 (80.4%) participants were able to correctly calculate the interest on a savings account and 218 (76.5%) participants understood the concept of inflation. With regards to simple investment knowledge, such as the risk of investing in a single company's shares versus a portfolio of shares, 242 (84.5%) participants correctly identified that purchasing a single company's shares exposes them to higher risk. However, the results showed that a larger portion of respondents did not have much knowledge about cryptocurrency. When respondents were asked whether the total supply of Bitcoin is fixed, 167 (58.6%) participants answered incorrectly and when asked whether all Bitcoin transactions are recorded on a distributed ledger, 107 (37.5%) participants answered incorrectly (this is shown in figure 5).

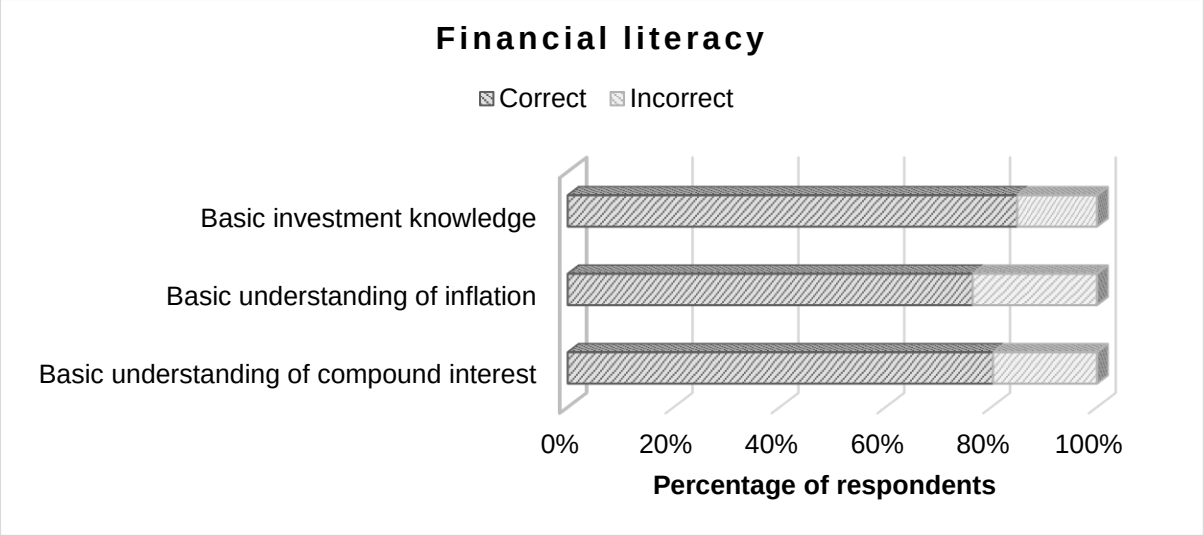


Figure 4 A bar graph showing the financial literacy of the sample

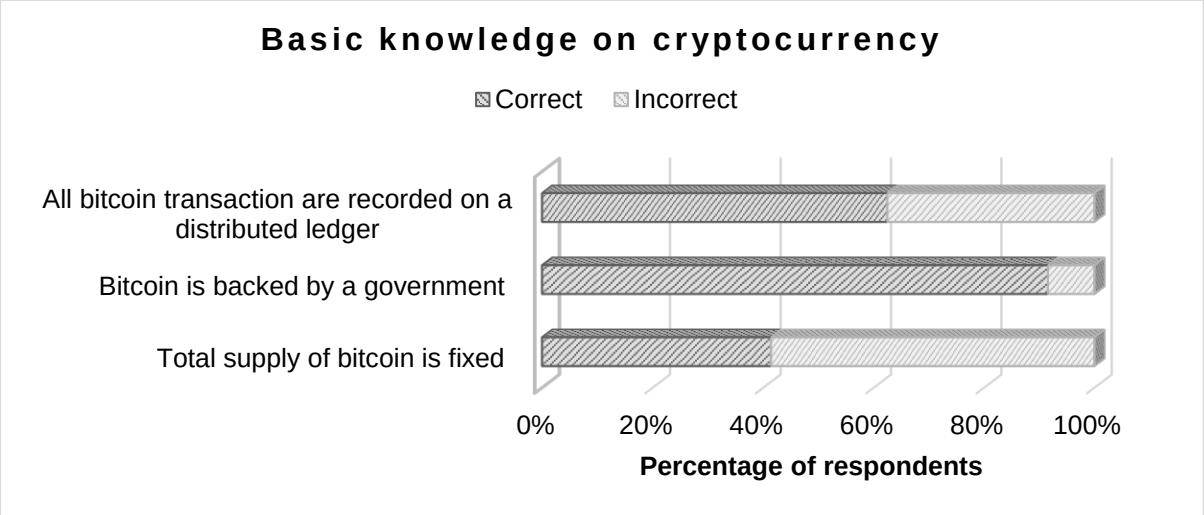


Figure 5 A bar graph showing the respondents basic cryptocurrency knowledge

4.1.4 Attitude toward cryptocurrency

Respondents were then asked about their beliefs regarding cryptocurrency where a significant number of participants responded negatively toward cryptocurrency as 222 (77.9%) participants stated that they believe suffering a loss from cryptocurrency is very likely whereas only 129 (45.3%) participants believed that realising positive returns from cryptocurrency is very likely. However, a notable number of participants believe that cryptocurrencies offer advantages over the conventional payment system (as depicted in figure 6). This shows that although participants believe that cryptocurrency offers advantages over the conventional financial system, there is also a high level of concern regarding potential losses.

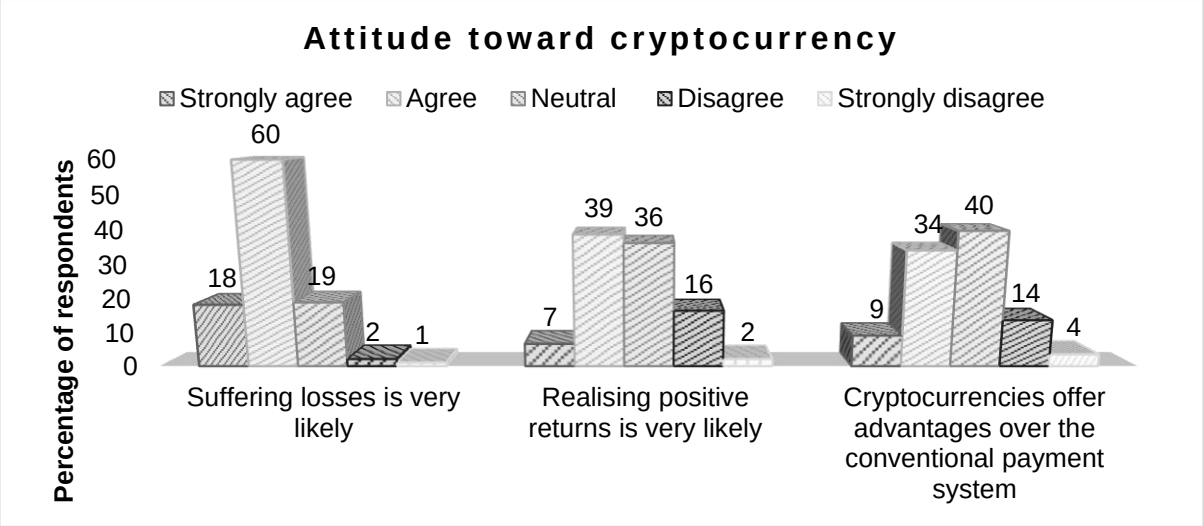


Figure 6 A bar graph showing the sample's attitude toward cryptocurrency

4.1.5 The attributes of cryptocurrency that drive the investment in cryptocurrency

Respondents who showed an interest in cryptocurrency were then asked to state "yes" or "no" to statements relating to their motive to invest in cryptocurrency. The results reflected that a large portion of respondents favoured the investment opportunity due to the possibility of high returns as well as the new blockchain technology, with 93% of participants agreeing with the statements relating to the aforementioned (as shown in figure 7). The respondents' trust in South African banks or the government did not impact their decision to invest in cryptocurrency.

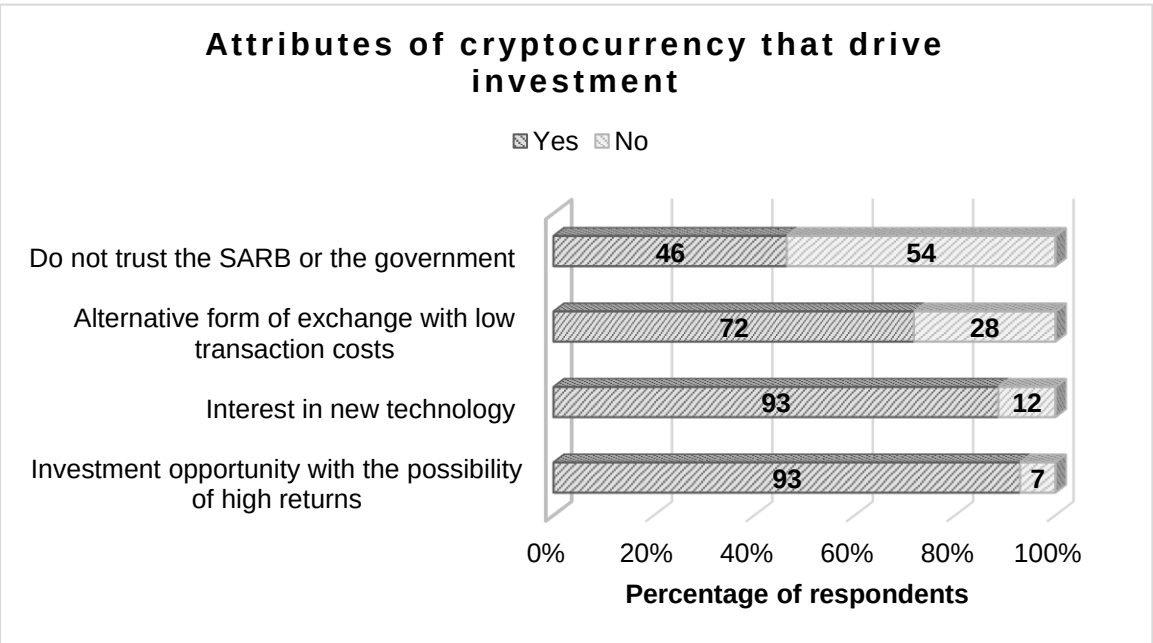


Figure 7 A bar graph showing the attributes of cryptocurrency that drive investment among the sample

4.2 The attributes and characteristics of cryptocurrency investors in South Africa

From the descriptive statistics, we note that 74% of cryptocurrency investors are below the age of 35 (as shown in figure 9), whilst 69% of cryptocurrency investors are male (this is depicted in figure 8). This shows that cryptocurrency investors are more likely to be younger males.

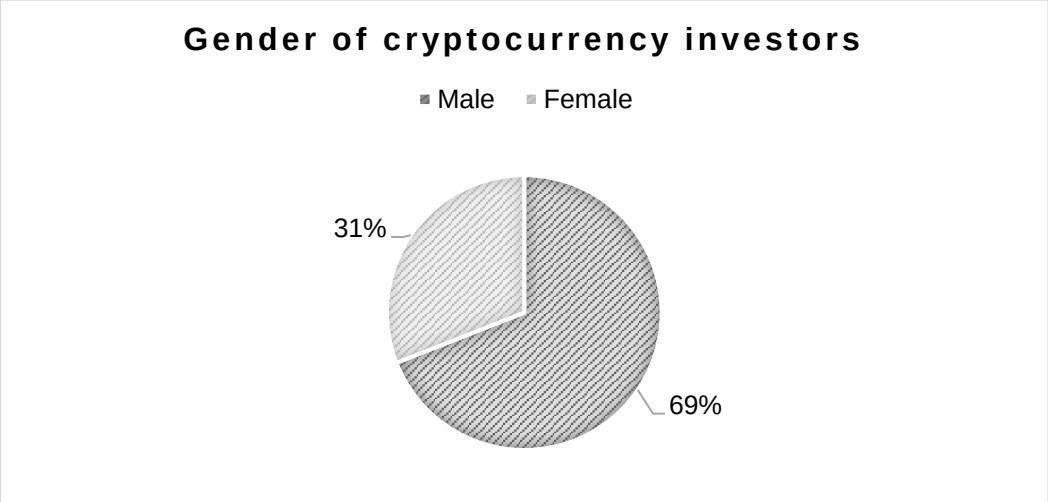


Figure 8 A pie graph showing the gender of cryptocurrency investors

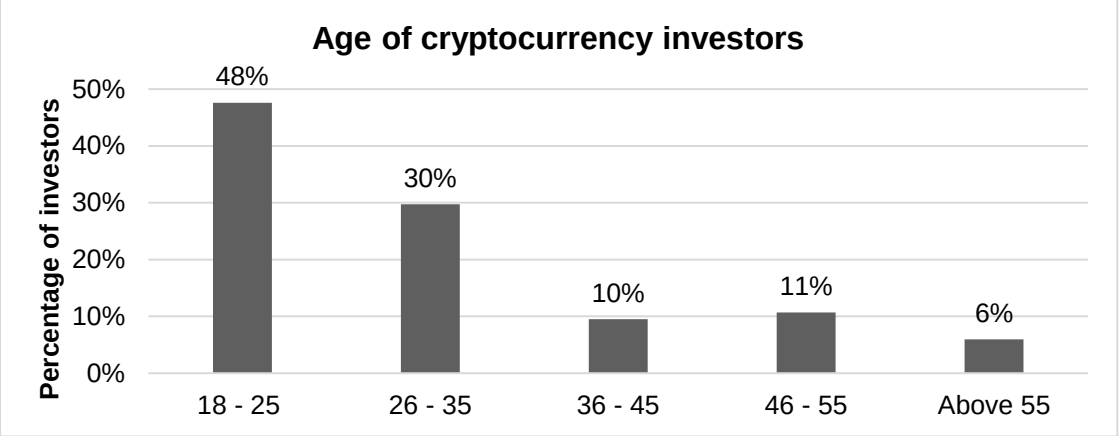


Figure 9 A bar graph showing the age of cryptocurrency investors

In terms of education, the majority of the cryptocurrency investors held postgraduate degrees, accounting for 52% of cryptocurrency investors within the sample. A further 19% of cryptocurrency investors held undergraduate degrees and cryptocurrency investors holding a diploma or higher certificate accounted for 6% and 4% respectively. It is interesting to note that a large portion of cryptocurrency owners' highest level of education was high school, accounting for 19% of the sample (as shown in figure 10). As depicted in figure 11, with regards to the employment status of cryptocurrency investors, 67% of investors are employed or self-employed, while

8% of investors were unemployed, 23% were students, and 2% were retired individuals.

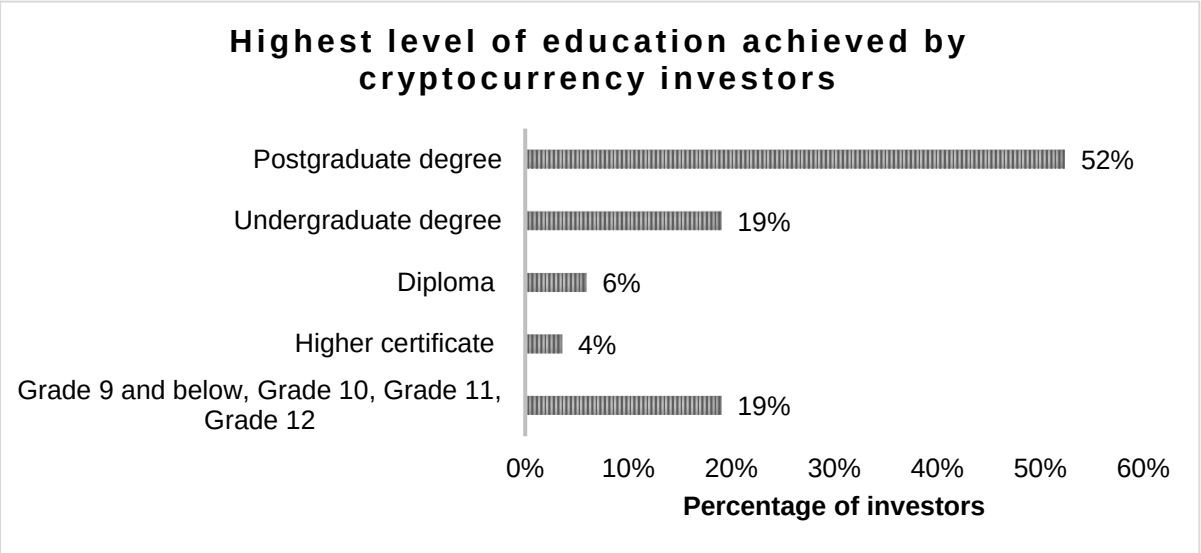


Figure 10 A bar graph showing the highest level of education of cryptocurrency investors

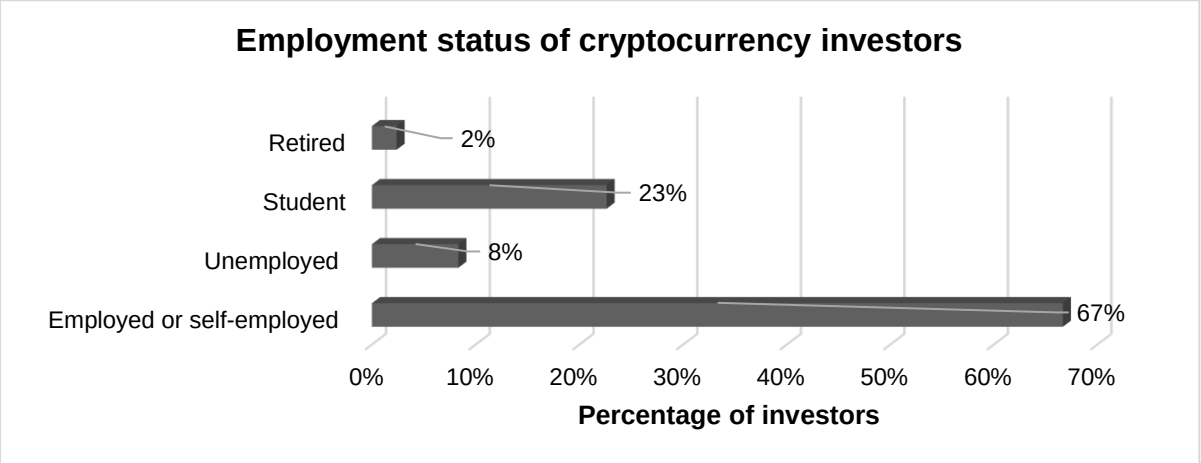


Figure 11 A bar graph showing the employment status of cryptocurrency investors

The survey used in this research paper asked respondents questions regarding their taxable income bracket and housing status to assess the financial wealth status of investors. The results show that cryptocurrency investors are more likely to be individuals who have above-average incomes in South Africa.

As seen in figure 13, the percentage of individuals who have invested in cryptocurrency varies depending on their taxable income bracket in South Africa. Among those with a taxable income less than R216 200, 18% had invested in cryptocurrency, and for individuals with taxable income exceeding R216 200, the percentage of cryptocurrency investment ranges from 4% to 21%, with the highest percentage of cryptocurrency investment being among individuals with taxable income exceeding R782 200 but equal to or not exceeding R1 656 600. Concerning the respondents' housing status, 13% of cryptocurrency investors stated that they own their place of residence and a business, whilst a further 30% stated they own their place of residence but not a business. For those who neither own nor rent their place of residence nor a business, 30% of these individuals have invested in cryptocurrency, which could be a result of the sample population being younger individuals who may not have started earning an income yet. This is depicted in figure 12.

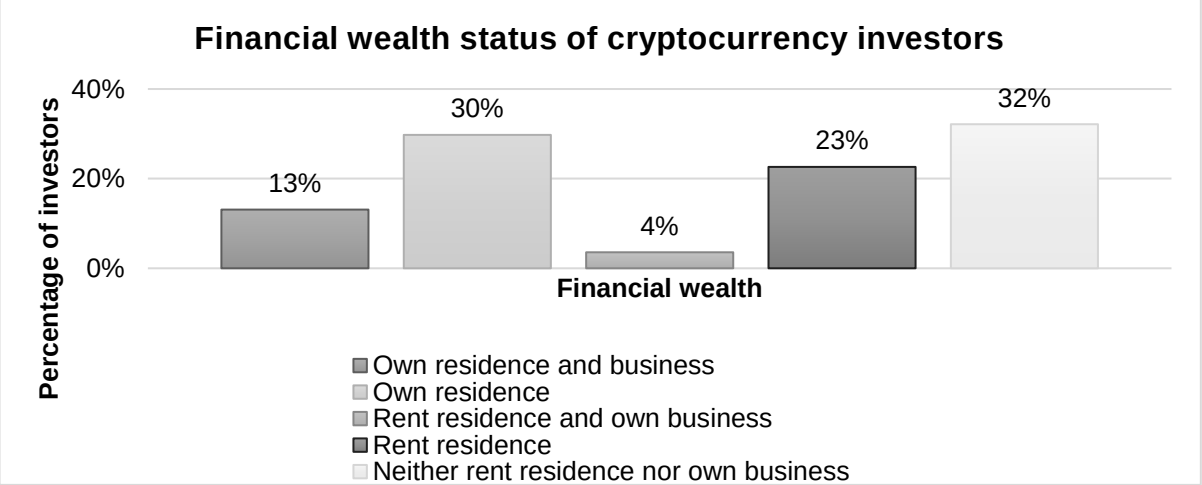


Figure 12 A bar graph showing the financial wealth status of cryptocurrency investors

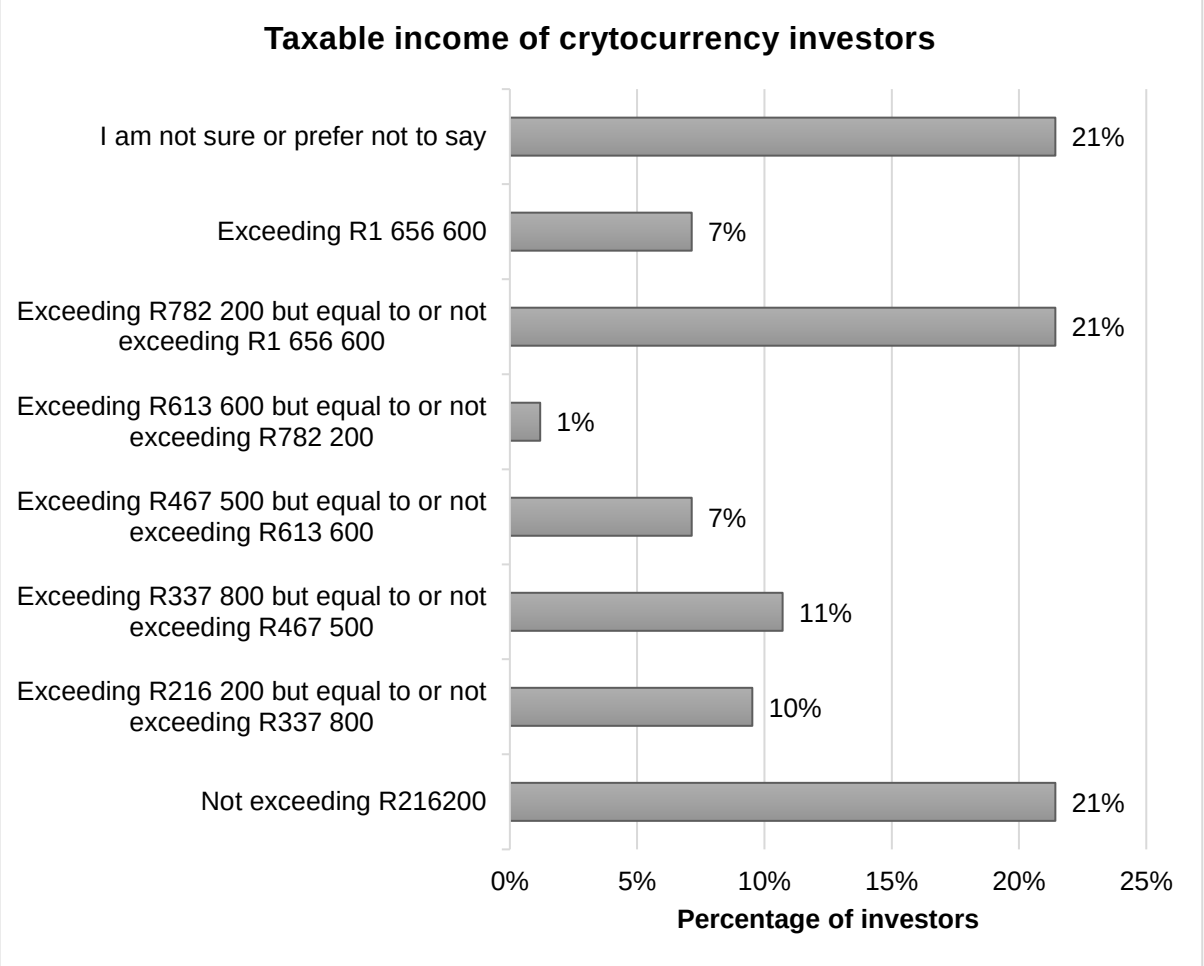


Figure 13 A bar graph showing the taxable income bracket of cryptocurrency investors

The profession of individuals among cryptocurrency investors varies, with 55% of investors in the business and administration (including finance) profession. Investors in the information and communication technology profession accounted for 13%, while those in science and engineering (including actuarial) also accounted for 13%. The professions with the lowest percentage of investment were the legal profession (1%), education and health (both accounted for 7% each) (this is shown in figure 14).

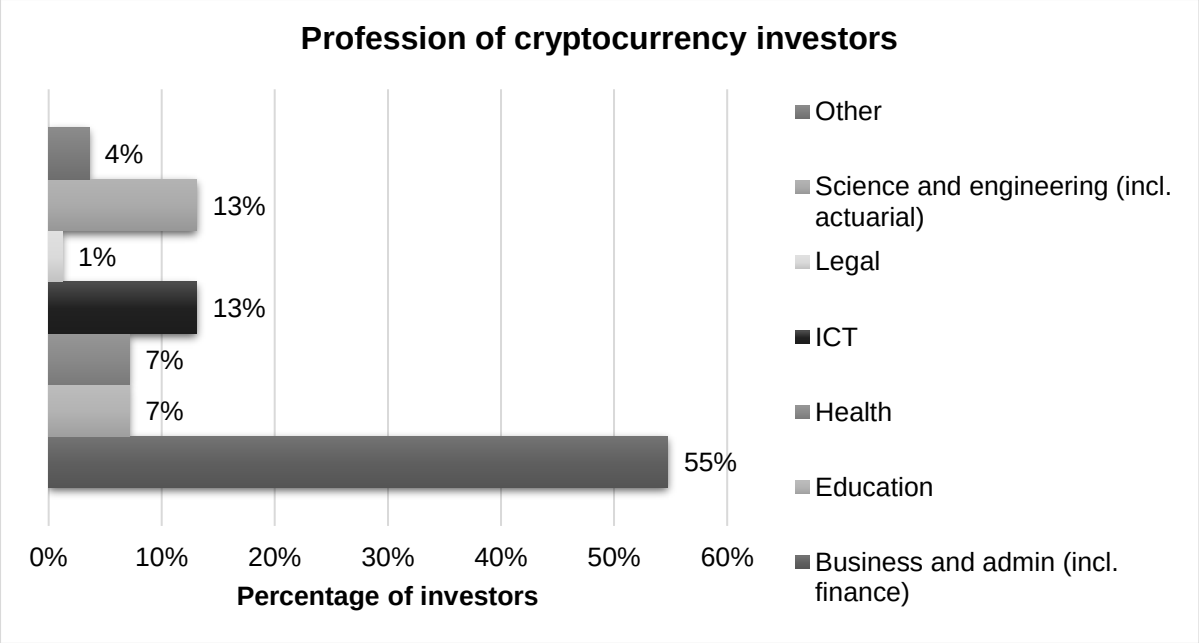
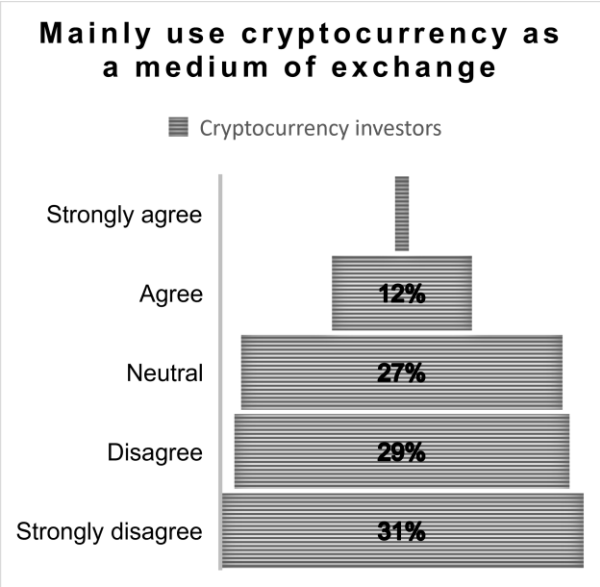
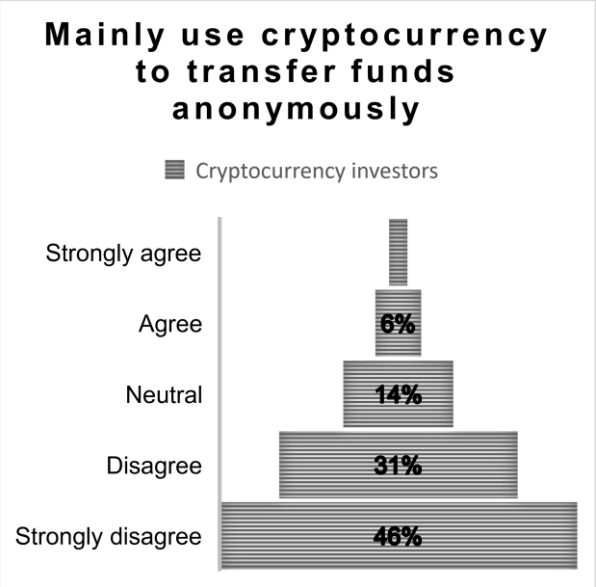


Figure 14 A bar graph showing the profession of cryptocurrency investors

In assessing the attributes and characteristics of cryptocurrency investors in South Africa, this research assessed what these investors were more likely to use cryptocurrency for. As shown in figure 15, the results showed that cryptocurrency investors mainly use cryptocurrency as a speculative investment (81%), while a significant portion of investors strongly agree or agree that they mainly use cryptocurrency as a store of wealth (74%). It is interesting to note from the results that only a relatively small portion of investors strongly agree or agree that they mainly use cryptocurrency as a medium of exchange (13%), further even a smaller percentage strongly agree or agree that they mainly use cryptocurrency to transfer funds anonymously (8%).





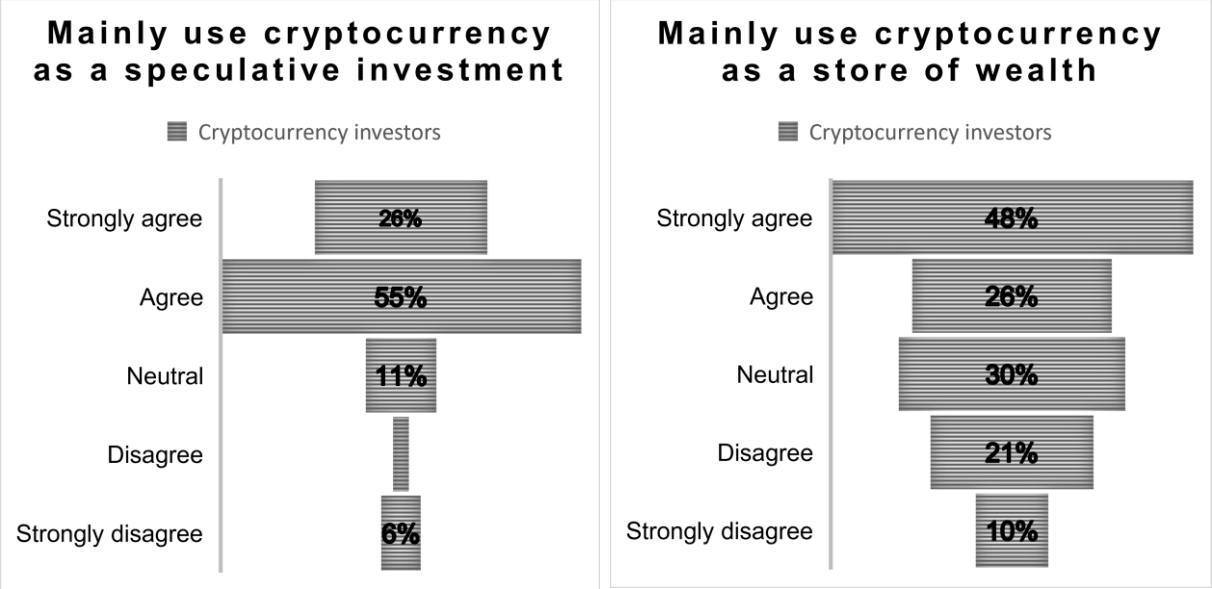


Figure* 15 *Funnel graphs showing cryptocurrency investors' main use for cryptocurrency

4.3 What is the level of awareness of cryptocurrency in South Africa?

The survey results show that a significant percentage of respondents (97%) are aware of cryptocurrencies, whilst only 3% are not aware, indicating that cryptocurrencies have gained significant traction in South Africa. Respondents were then asked three questions relating to Bitcoin, the most popular cryptocurrency, to assess their knowledge of cryptocurrency. The results varied amongst the three questions asked (as depicted in figure 16). Only 41% of respondents correctly indicated that the total supply of Bitcoin is fixed, while 59% answered incorrectly. This suggests that there is a lack of understanding of the basic characteristics of Bitcoin. On the other hand, a vast majority of respondents, 92%, correctly indicated that Bitcoin is a decentralised currency that is not controlled by any government. When asked a question relating to the respondent's basic knowledge of Blockchain technology, 62% of respondents correctly indicated that all Bitcoin transactions are recorded on a distributed ledger, while 38% answered incorrectly.

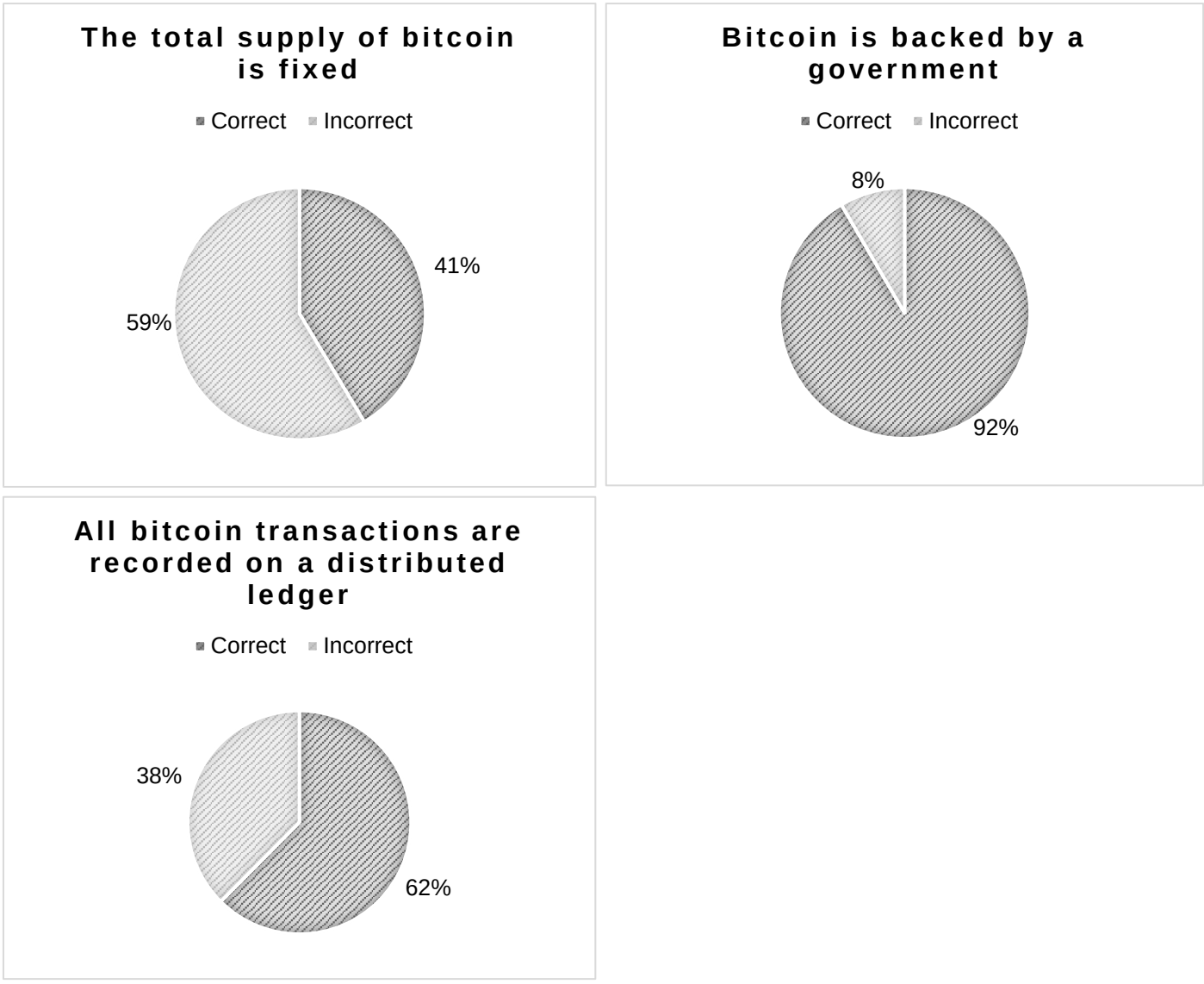


Figure 16 Pie graphs showing the investors' basic Bitcoin knowledge

4.4 The attributes of cryptocurrency that drive individuals to invest in cryptocurrency

As depicted in figure 17 and 18, the results show that individuals are likely to invest in cryptocurrency for various reasons. The most common reason is the new technology that cryptocurrency encompasses, with 95% of respondents agreeing that this new technology was a characteristic that drives their interest in investing in cryptocurrency. Another key driver for cryptocurrency investment is the possibility of high returns, with 93% of respondents agreeing that this attribute drives their interest in investing in cryptocurrency. This perception of the possibility of high profit margins may be related to the high volatility and speculative nature of the cryptocurrency market, which leads to significant price fluctuations and high returns for investors. The anonymity feature of cryptocurrency is also a desirable feature for many respondents (81%) as well as

the transparency provided by cryptocurrency (71%). Another driver for cryptocurrency investment is the respondent's (81%) perception that cryptocurrencies will be the future of online spending. Interestingly, the alternative form of exchange with low transaction costs provided by cryptocurrency is one of the key factors that drive cryptocurrency investment, as 76% of valid respondents stated that this was a desirable feature. This may be indicative of the individual's desire for a more efficient and cost-effective payment system. Other factors that were identified as drivers for cryptocurrency investment include the respondent's lack of trust in the South African government or banks (55%) and the respondents' expectation for cryptocurrencies to outperform traditional investments in times of recession (59%). The results show that the respondent's desire to make quick money was not a significant factor in deciding whether to invest in cryptocurrency as only 43% of respondents stated that this was a desirable feature of cryptocurrency.

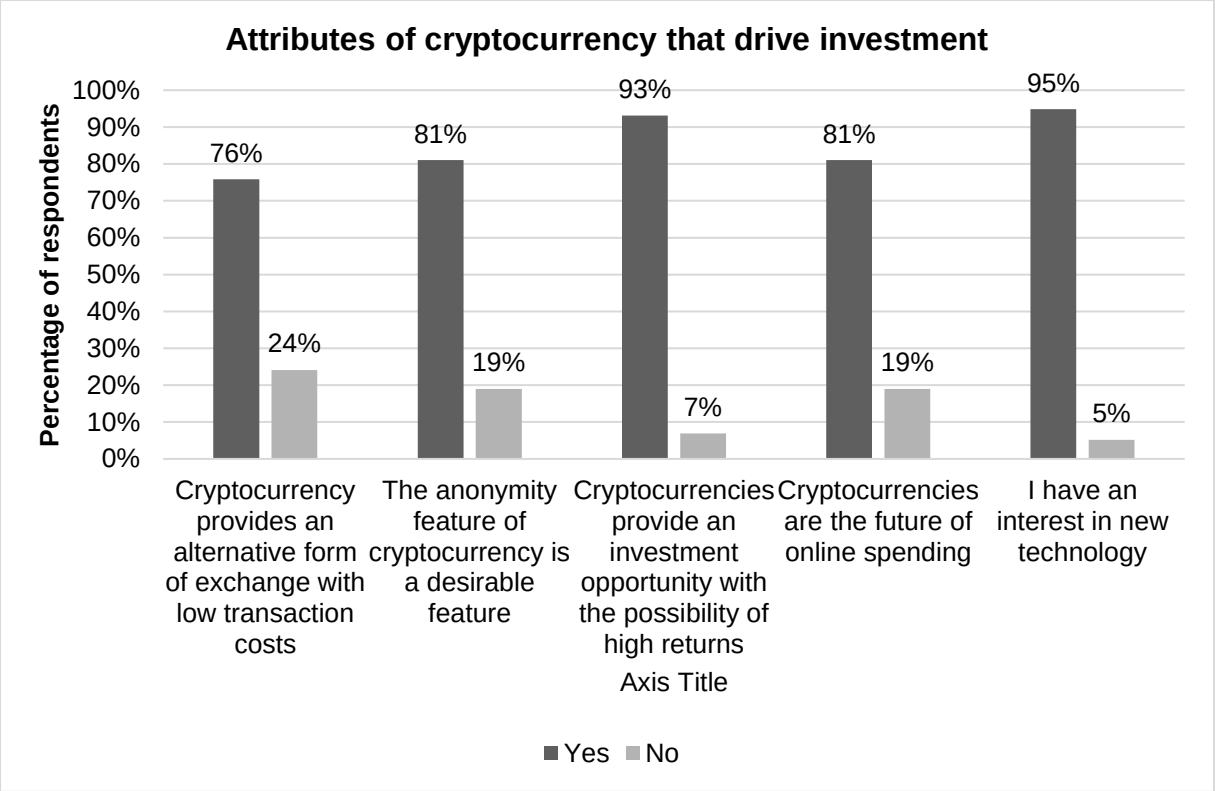


Figure 17 A bar graph showing the attributes of cryptocurrency that drive investment among those who have an interest in cryptocurrency investment

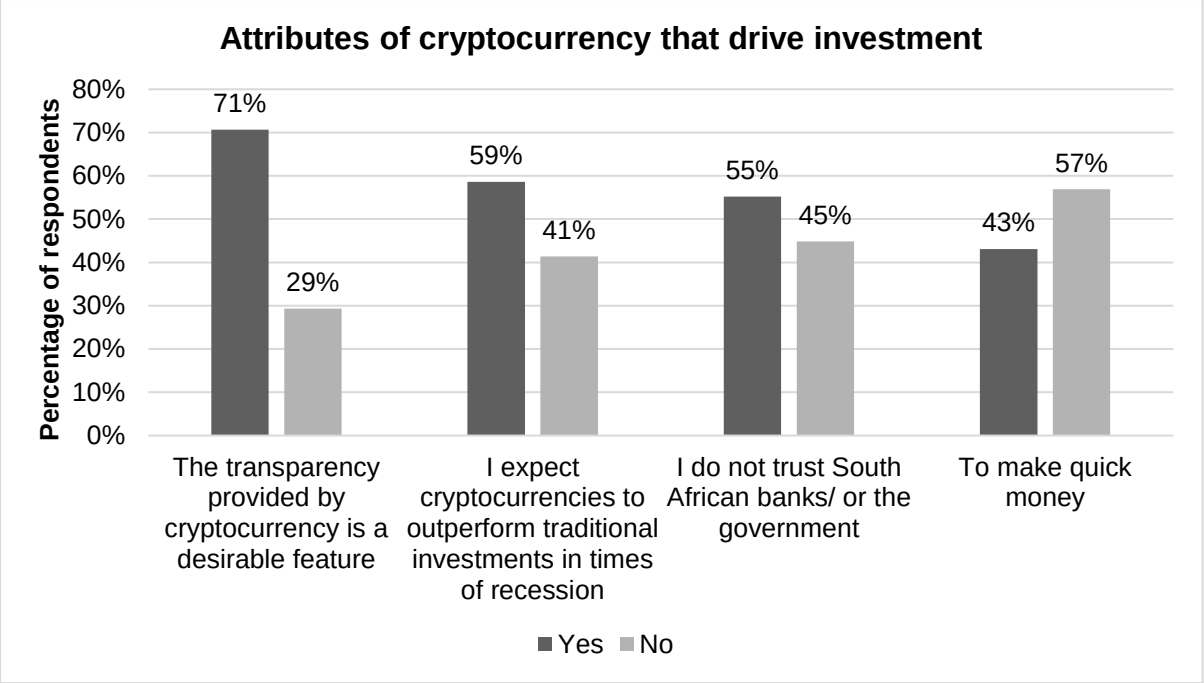


Figure 18 A bar graph showing the attributes of cryptocurrency that drive investment among those who have an interest in cryptocurrency investment

4.5 The attributes of cryptocurrency that drive the non-investment in cryptocurrency

The main reason why individuals are not likely to invest in cryptocurrency is the excessive risk involved, with 91% of respondents agreeing that the risk involved in cryptocurrency investment is too high. The second most common reason (80%) for not investing in cryptocurrency is the risk of online theft or fraud. This perception of risk may be related to the possibility of losing all invested funds due to fluctuations in the cryptocurrency price as well as the lack of regulation in the cryptocurrency market. The lack of regulation in the cryptocurrency market was also stated as a significant factor that resulted in the respondents' disinterest in investing in cryptocurrency as 74% of respondents stated that the fact that it is not a regulated form of exchange prevented them from investing. Other attributes of cryptocurrency that contributed to the non-investment by respondents include the high price of cryptocurrency as 59% of respondents indicated that they do not have sufficient funds to invest in cryptocurrency as well as their lack of trust in the new technology (51%) (as shown in figure 19).

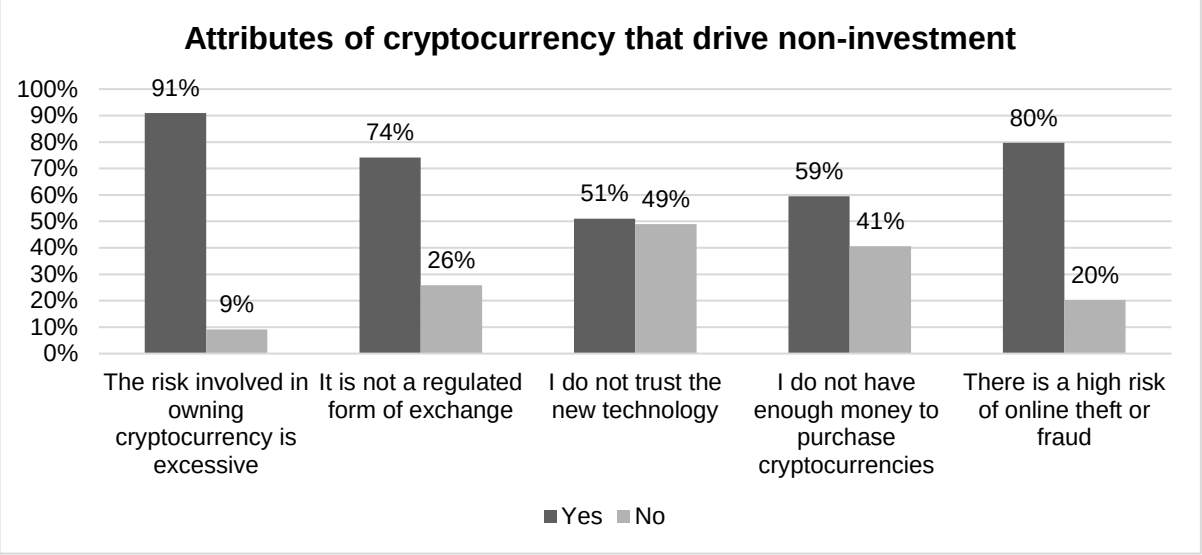


Figure 19 A bar graph showing the attributes of cryptocurrency that drive non-investment among those who do not have an interest in cryptocurrency investment

4.6 Trust in the South African rand, the Central Bank, and domestic banks

Investors and non-investors were then asked questions regarding their level of faith in the South African rand, the Central Bank, and domestic banks in South Africa. The results show that respondents who do not own cryptocurrency are slightly more reluctant about their trust in the South African rand, the central bank as well as domestic banks (as shown in figure 21). This reluctance to trust may contribute to the respondents' disinterest in investing in cryptocurrency. As depicted in figure 20, of the respondents who have invested in cryptocurrency, 22% answered affirmatively when asked whether they are content with the South African rand whilst 53% displayed feelings of discontent with the South African rand, and 24% were neutral. On the question of whether they were certain that the South African rand will be a stable currency in 5 years, 17% stated that they agreed with this statement, whilst 62% did not agree and 21% were neutral. 32% of respondents displayed that they do not have a high level of faith in the South African Reserve Bank (SARB), whilst 37% of respondents displayed a positive sentiment toward the SARB. However, when respondents were asked about their sentiment toward domestic banks, 46% of respondents stated that they had a high level of faith in domestic banks while 17% of respondents stated that they did not.

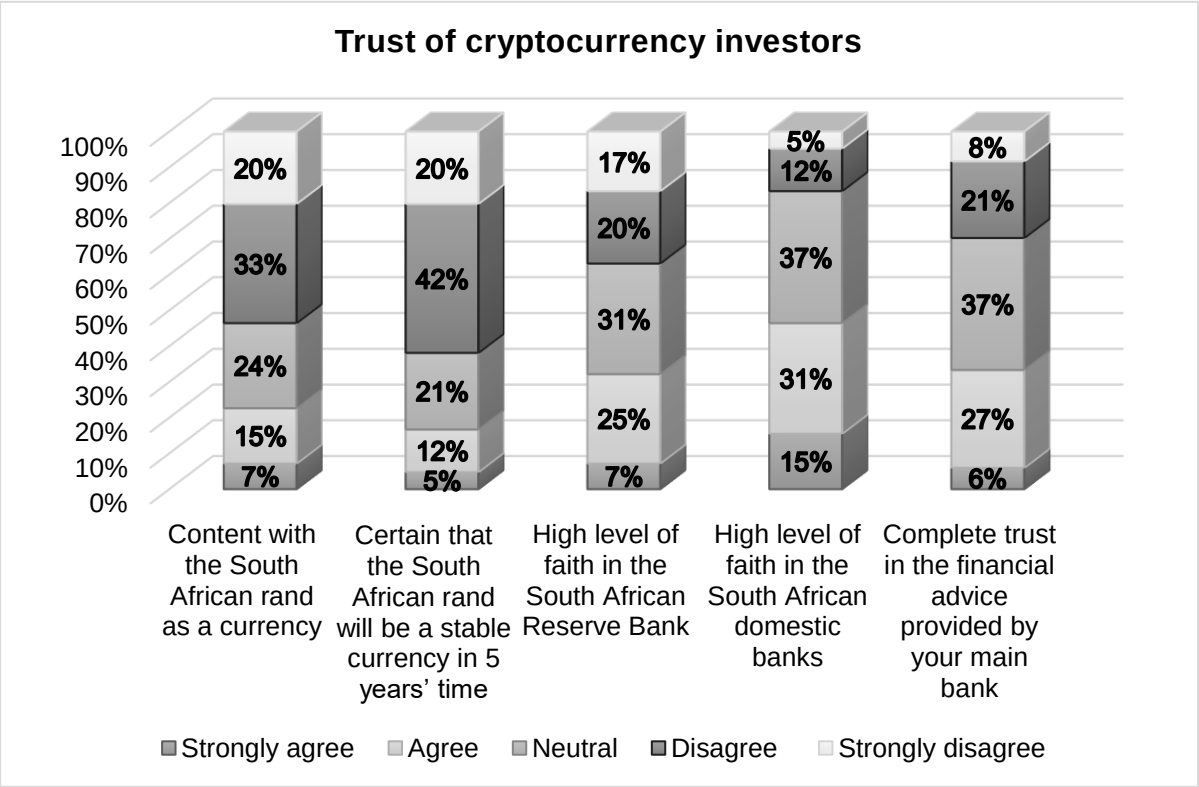


Figure 20 A bar graph showing cryptocurrency investors' trust in the South African rand, the SARB, and domestic banks

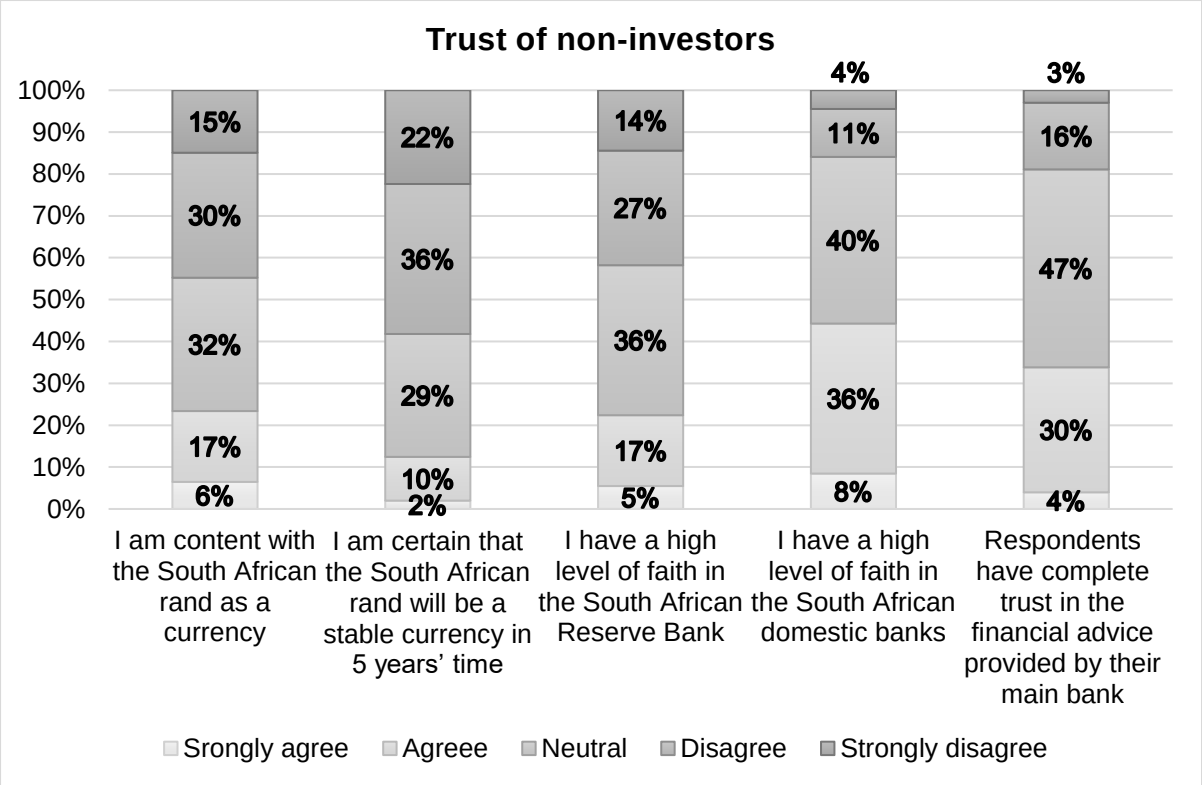
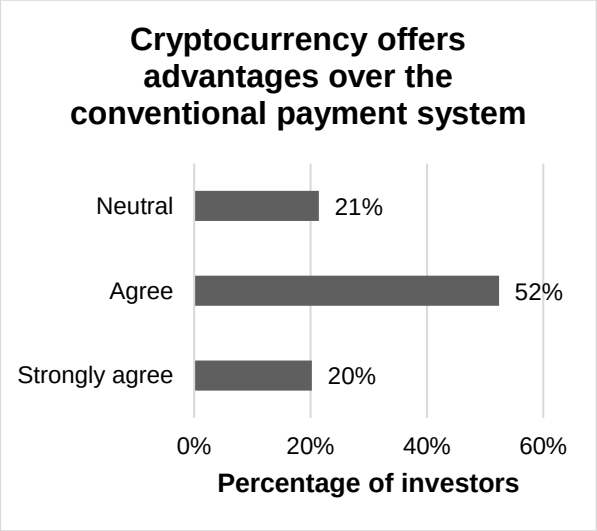
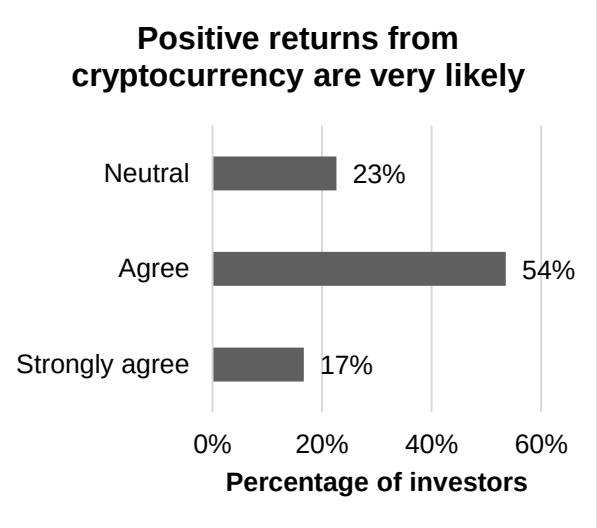


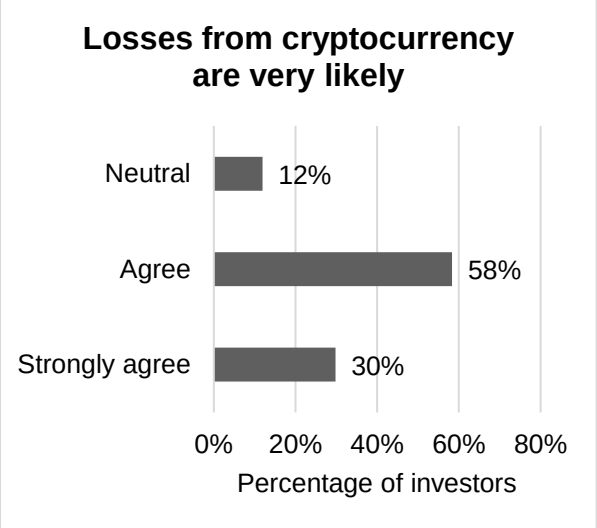
Figure 21 A bar graph showing non-investors trust in the South African rand, the SARB, and domestic banks

4.7 The impact of an individual's emotions and other biases on their investment decision

According to the results, the majority of respondents agree or strongly agree that cryptocurrency offers advantages over the conventional payment system (72%) and that positive returns from cryptocurrency are likely (71%). However, a larger proportion of respondents agree or strongly agree that losses from cryptocurrency are likely (88%), and 51% of investors believe that using cryptocurrency exposes them to high volatility against the South African rand. Furthermore, a significant proportion of respondents (53%) agree or strongly agree that there is a great danger of fraud and online theft when using cryptocurrency (as shown in figure 22).







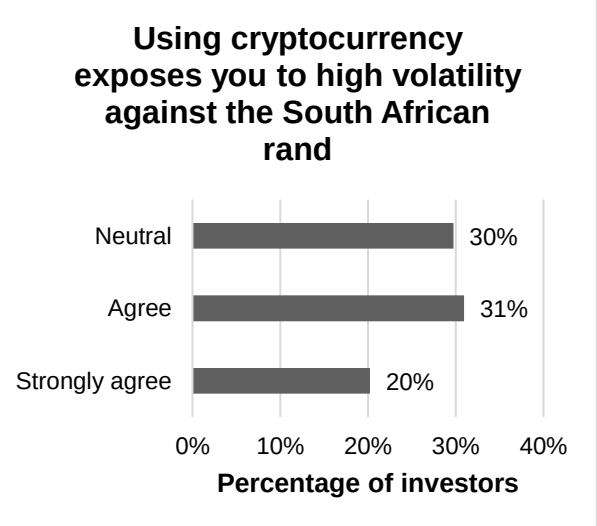




Figure 22 Bar graphs showing the beliefs of cryptocurrency investors regarding cryptocurrency

4.7.1 Overconfidence

With regards to the financial literacy of cryptocurrency investors, most investors answered correctly when asked about basic financial concepts such as interest (90%), inflation (87%), and investment (89%). However, there were still a small proportion of respondents who answered these questions incorrectly, accounting for 10%, 13%, and 11% respectively (as shown in figure 23). On the other hand, the results indicate that non-investors also have a relatively high level of financial literacy. Specifically, 76% of non-investors have a basic understanding of interest, while 72% have basic knowledge about inflation. Furthermore, 83% of non-investors have a basic understanding of investment concepts (as shown in figure 24).

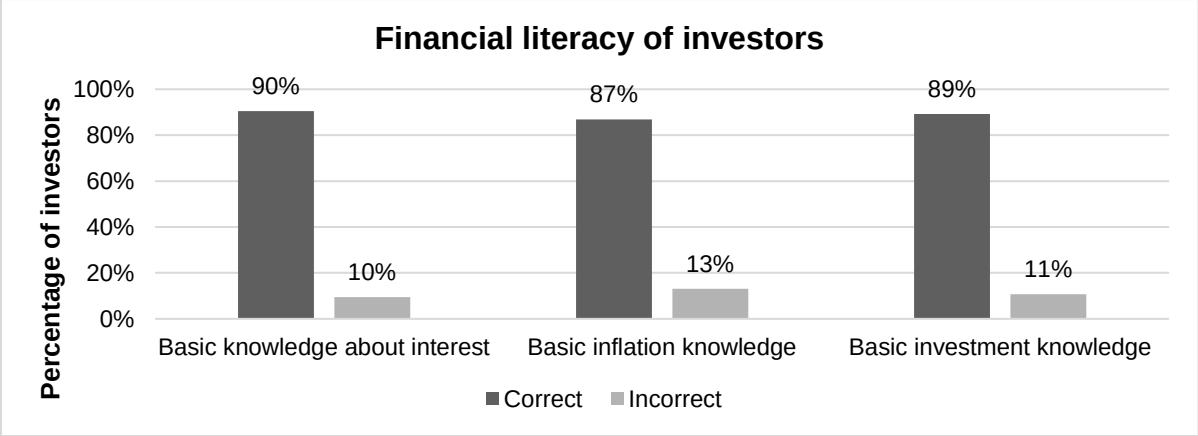


Figure 23 A bar graph showing the financial literacy of cryptocurrency investors

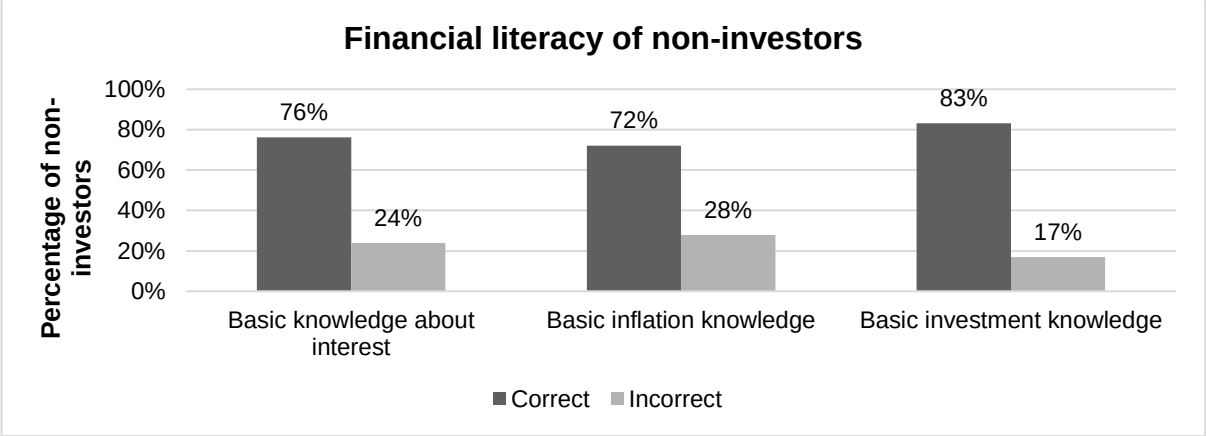


Figure 24 A bar graph showing the financial literacy of those who have not invested in cryptocurrency

As depicted in figure 25 and 26, cryptocurrency investors have a higher understanding of Bitcoin compared to non-investors. The results showed that 64% of cryptocurrency investors correctly know that the total supply of Bitcoin is fixed, compared to only 32% of non-investors. Similarly, 71% of cryptocurrency investors are aware that all Bitcoin transactions are recorded on a distributed ledger while only 59% of non-investors are aware of this. The participant's knowledge regarding the fact that Bitcoin is not backed by a government is relatively equal with 94% of cryptocurrency investors and 91% of non-investors holding this understanding.

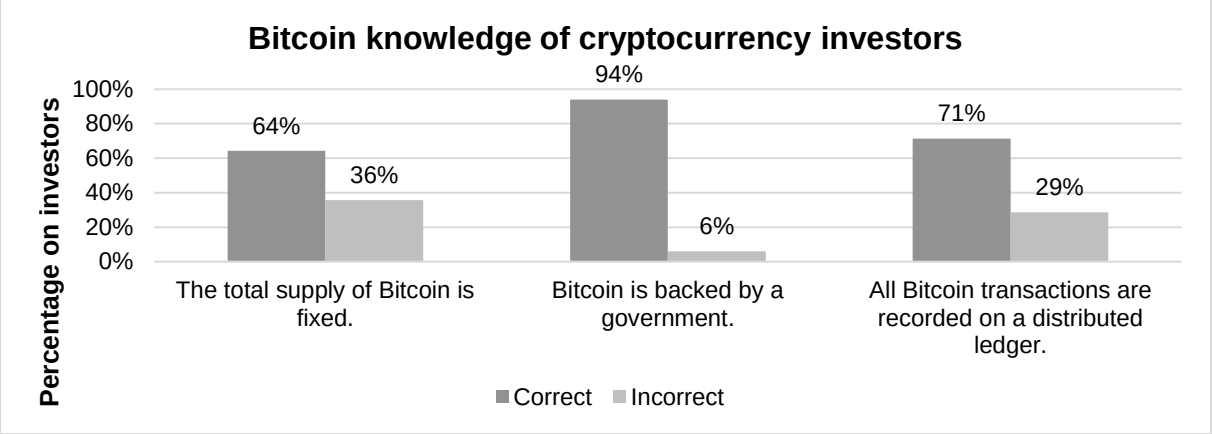


Figure 25 A bar graph showing the Bitcoin knowledge of cryptocurrency investors

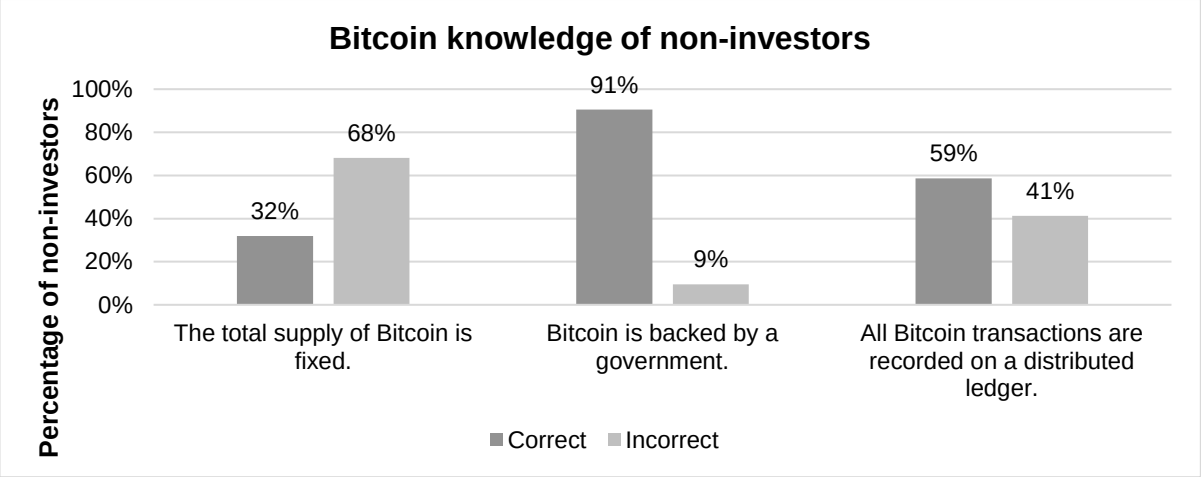


Figure 26 A bar graph showing the Bitcoin knowledge of those who have not invested in cryptocurrency

The risk appetite of cryptocurrency investors is relatively high, with 26% of investors willing to take on substantial risk and a further 46% willing to take on above-average risk. 23% of investors are only willing to take on average risk whilst a total of 4% are willing to take on below average or no risk at all (as depicted in figure 27). On the other hand, non-investors are less likely to have a high-risk appetite towards cryptocurrencies, with only 19% showing a substantial risk appetite and a further 34% willing to take on above-average risk. Non-investors who were only willing to take only below average or no risk accounted for 5% and 11% respectively (as depicted in figure 28).

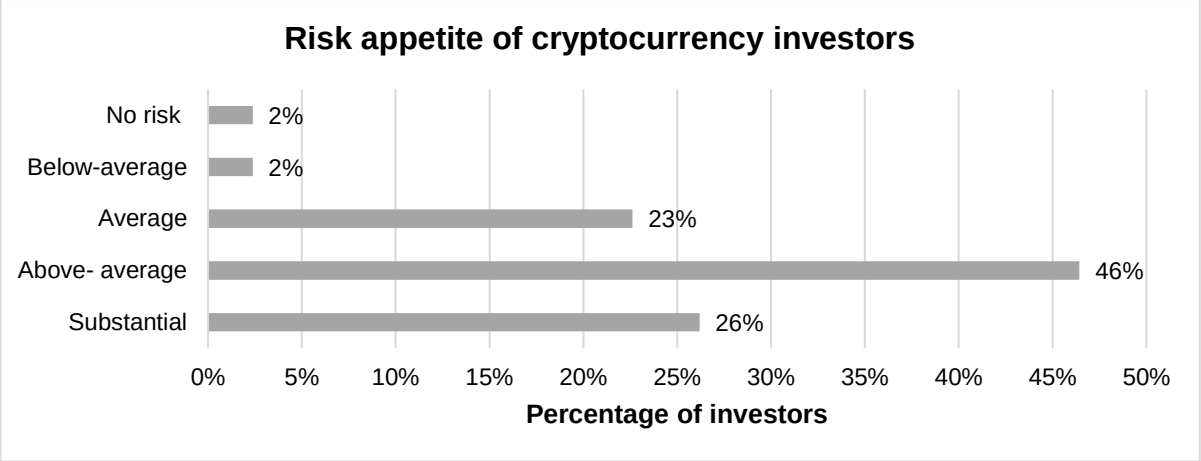


Figure 27 A bar graph showing the risk appetite of cryptocurrency investors

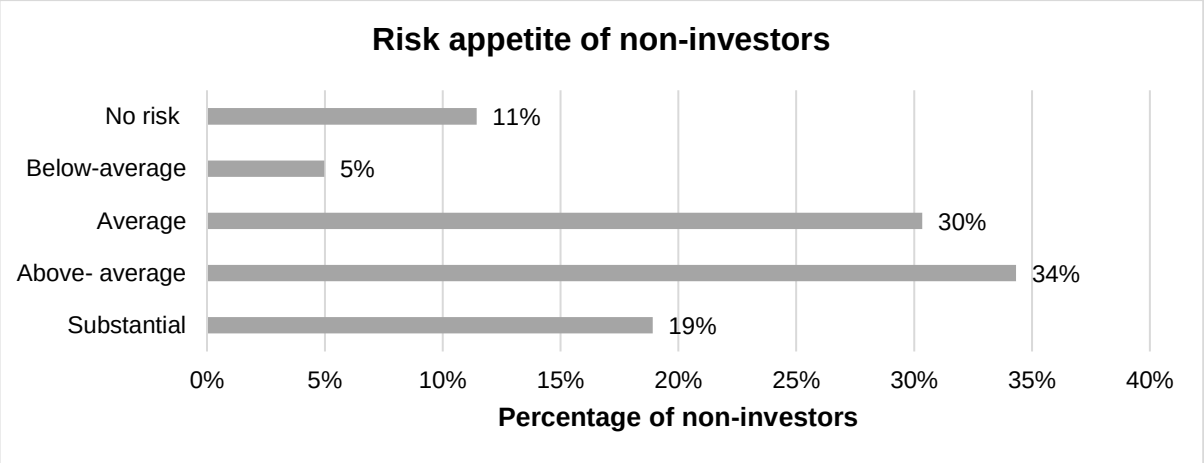


Figure 28 A bar graph showing the risk appetite of those who have not invested in cryptocurrency

4.7.2 Herding and Optimism bias

As shown in figure 29, the results show that the impact of others investing in cryptocurrency does affect the respondent's intention to invest in cryptocurrency to some extent, as 48% of the respondents who are likely to invest stated that they want to invest in cryptocurrency because many people they know are investing in cryptocurrency and they do not want to miss out on an investment opportunity. On the other hand, 52% of respondents indicated that the decisions of others do not impact their intention to invest in cryptocurrency.

The results show that there is an indication of optimism bias as the majority of investors (71%) have some level of agreement with the statement that positive returns from cryptocurrency are very likely, while a smaller proportion (19%) either disagree or are neutral. On the other hand, a larger proportion (88%) strongly agree or agree that losses from cryptocurrency are very likely, with a minority (12%) either disagreeing or

being neutral on this statement. This shows optimism bias because, despite the belief that losses are very likely, these respondents have still invested in cryptocurrency as they feel an optimistic sentiment toward positive returns.

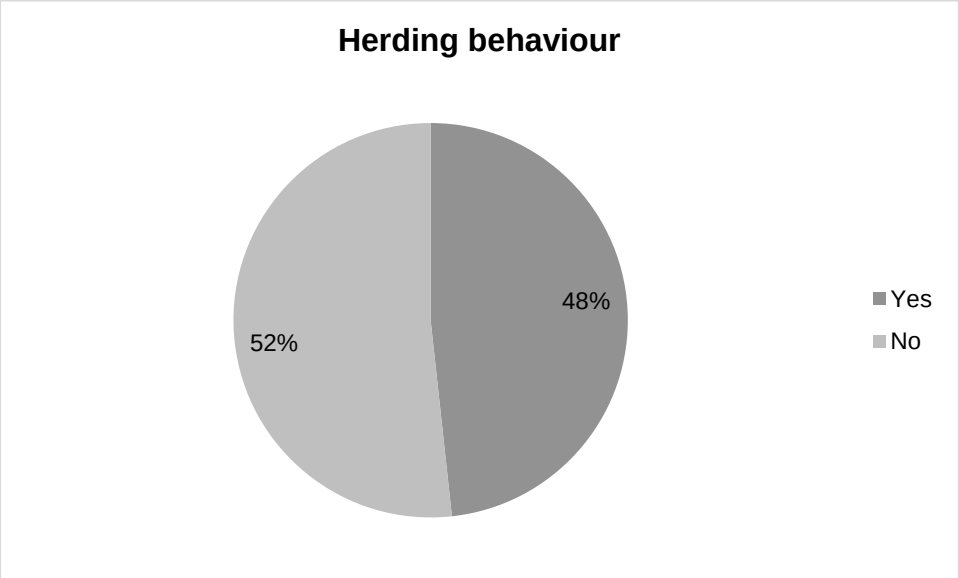


Figure 29 A pie graph showing the percentage of those interested in cryptocurrency investment who are likely to invest due to herding behaviour

4.8 Logistic regression results

4.8.1 The attributes and characteristics of cryptocurrency investors in South Africa

A binomial logistic regression was utilised to determine the attributes and characteristics of cryptocurrency investors in South Africa by predicting the likelihood of an individual investing in cryptocurrency based on their attributes and characteristics, including their demographic factors, financial literacy, financial wealth status, profession, risk appetite and their level of trust. The independent variables used for this regression were within the categories of demographic factors, sociodemographic factors, financial wealth, and trust (refer to table 1 for the details relating to these variable categories) and the dependent variable was investment.

An omnibus test of model coefficients was conducted to assess the overall significance of the predictors in the statistical model. As shown in table 9, the results suggested the logistic model was statistically significant ($\chi^2 = 97.261$, $df = 57$, $p = 0.001$) in predicting the cryptocurrency investment, indicating that at least one of the independent variables included in the model is significantly related to the investment

in cryptocurrency. As indicated by the Nagelkerke R-squared value shown in table 10, the model explained 41.2% of the variance in cryptocurrency investment and correctly classified 78.6% of cases overall. Sensitivity was 52.4%, specificity was 89.6%, positive predictive value was 67.7% and negative predictive value was 81.8% (this is shown in table 11). As shown in table 18 (Appendix B), The results showed that age, gender, and profession were statistically significant. Males are more prone to invest in cryptocurrency and the likelihood of individuals between the age of 26 – 35 investing in cryptocurrency was 7.9 times higher than those in between the age of 18 - 25. Furthermore, the chance of individuals in the information and communication technology profession investing in cryptocurrency were 11.5 times higher than those in the business and administration (including finance) profession.

Overall, these findings suggest that demographic factors, such as age and gender, and profession are important predictors of cryptocurrency investment.

Table 9 Overall statistical significance of the model

Omnibus Tests of Model Coefficients			
	Chi-square	df	Sig.
Step	97.261	57	<.001
Block	97.261	57	<.001
Model	97.261	57	<.001

Table 10 Explained variation

Model summary		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
248.352[a]	.289	.412
a. Estimation terminated at iteration number 20 because maximum iterations have been reached. Final solution cannot be found		

Table 11 Observed and predicted classification

Classification table				
Observed		Predicted		
		Ownership/non-ownership		Percentage Correct
		Non-investor	Investor	
Ownership/non-ownership	Non-investor	180	21	89.6
	Investor	40	44	52.4
Overall Percentage				78.6
a. The cut value is .500				

4.8.2 The level of awareness of cryptocurrency in South Africa

The impact of demographic factors, such as age, gender, highest level of education and employment status, and the Bitcoin knowledge of individuals on the level of awareness of cryptocurrencies in South Africa tested using a binomial logistic regression. The categories of independent variables used for this regression were demographics, and Bitcoin knowledge (refer to table 1 for the details relating to these variable categories) and the dependent variable was awareness.

An omnibus test of model coefficients suggested that the logistic model was statistically significant ($\chi^2 = 38.772$, df = 16, p = 0.001) in predicting awareness of cryptocurrency (as shown in table 12). The model explained 55.9% (Nagelkerke R^2) of the variance in cryptocurrency awareness and correctly classified 97.6% of cases overall (this is shown in table 13). As shown in table 14, sensitivity was 25%, specificity was 99.6%, positive predictive value was 97.6% and negative predictive value was 66.7%. The results showed that none of the variables were statistically significant (this is depicted in table 19 – Appendix B).

This can happen when the effect of each individual variable is weak, but when they are combined, they have a stronger effect that is significant. The omnibus test is a test of the overall significance of the model, which considers all the variables together, while the individual variable tests look at the significance of each variable separately,

holding all other variables constant. So, it's possible for the individual variables to have weak effects that are not statistically significant on their own, but when combined, they have a significant effect overall.

Overall, these findings suggest that, individually, demographic factors and Bitcoin knowledge do not have a significant effect on cryptocurrency awareness. However, overall, these variables do have significant impact on cryptocurrency awareness.

Table 12 Overall statistical significance of the model

Omnibus Tests of Model Coefficients			
	Chi-square	df	Sig.
Step	62.319	23	<.001
Block	62.319	23	<.001
Model	62.319	23	<.001

Table 13 Explained variation

Model summary		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
283.294[a]	.196	.280
a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.		

Table 14 Observed and predicted classification

Classification table				
Observed		Predicted		
		Ownership/non-ownership		Percentage Correct
		0	1	
Ownership/non-ownership	0	179	22	89.1
	1	48	36	42.9
Overall Percentage				75.4
a. The cut value is .500				

4.8.3 The impact of an individual's emotions and other biases on their decision to invest in cryptocurrency

The impact of behavioural factors such an individual's attitudes and biases toward cryptocurrency on their decision to invest was tested using a binomial logistic regression. The dependent variable for this regression was investment and the categories of independent variables utilised for this regression were demographic factors, financial literacy, attitude towards cryptocurrency, and risk appetite (refer to table 1 for the details relating to these variable categories).

As shown in table 15, the logistic model was statistically significant ($\chi^2 = 97.261$, df = 57, p = 0.001) in predicting the impact of an individual's emotions and other biases on their decision to investment in cryptocurrency. The model explained 52.1% (Nagelkerke R^2) of the variance in cryptocurrency ownership (this is depicted in table 16) and correctly classified 84.2% of cases overall (as shown in table 17). For the model used, sensitivity was 92%, specificity was 65.5%, positive predictive value was 77.5% and negative predictive value was 86.4%. From the results, it was noted that an individual's attitude toward cryptocurrency and financial literacy were statistically significant (as shown in table 20 – Appendix B). Specifically with individual's who believe that cryptocurrencies offer advantages over the conventional payment system, the perception that positive returns from cryptocurrencies are very likely, and those who strongly agree that there is a great danger of fraud and online theft when using cryptocurrencies. The results indicated that the likelihood of cryptocurrency investment for individuals with basic investment knowledge (these are individuals who correctly answered that purchasing a single company's shares is riskier than purchasing a portfolio of shares) were 3.4 times higher than those without basic investment knowledge.

Overall, these findings suggest that attitude towards cryptocurrency and financial literacy have a significant impact of the decision to invest in cryptocurrencies.

Table 15 Overall statistical significance of the model

Omnibus Tests of Model Coefficients			
	Chi-square	df	Sig.
Step	130.013	40	<.001
Block	130.013	40	<.001
Model	130.013	40	<.001

Table 16 Explained variation

Model summary		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
215.600[a]	.366	.521
a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.		

Table 17 Observed and predicted classification

Classification table				
Observed		Predicted		
		Ownership/non-ownership		Percentage Correct
		0	1	
Ownership/non-ownership	0	185	16	92.0
	1	29	55	65.5
Overall Percentage				84.2
a. The cut value is .500				

4.9 Discussion

The aim of this study was to explore the attributes and characteristics of cryptocurrency investors in South Africa, the awareness of cryptocurrencies in South Africa as well as whether these individuals understand the risks involved in cryptocurrency investment, and the attributes of cryptocurrency that drives the

investment and non-investment of cryptocurrency. The theoretical framework used in this study is behavioural finance which has been incorporated by attempting to explain the impact of herding, overconfidence, optimism bias, and an individual's attitude toward cryptocurrency on the individual's decision to invest in cryptocurrency. This chapter will present the findings of the study and discuss the results in relation to previous research.

4.10 Does a person's emotions and other biases impact their decision to invest in cryptocurrency in South Africa?

4.10.1 Herding

The present study investigated the influence of emotions and biases on the decision to invest in cryptocurrency in South Africa. The results revealed that the behaviour of others investing in cryptocurrency does have an impact on an individual's intention to invest in cryptocurrency, indicating the presence of herding behaviour. This finding is consistent with previous studies that have identified herding behaviour in the cryptocurrency market (Bouri et al., 2018; Gurdgiev & O'Loughlin, 2020; Haryanto et al., 2020; Jalal et al., 2020).

Furthermore, the results also suggested the presence of optimism bias among cryptocurrency investors. The investors believed that positive returns from cryptocurrency were very likely, despite acknowledging that losses were also very likely. This bias is consistent with previous research conducted on other investment markets (Bui, 2022).

The findings of this study imply that emotions and biases can significantly impact investment decisions, particularly in the cryptocurrency market. However, it is important to note that these biases do not necessarily imply that cryptocurrency investments are inherently risky or flawed. Instead, these findings highlight the importance of individual investors conducting thorough research and analysis before making investment decisions, rather than solely relying on the actions and beliefs of others.

4.10.2 Overconfidence

The results of this study suggest that emotions and biases have a significant impact on an individual's decision to invest in cryptocurrency in South Africa. Specifically, the study found evidence of herding behaviour and optimism bias among cryptocurrency

investors, which is consistent with previous literature in the field (Bouri et al., 2018; Gurdgiev & O'Loughlin, 2020; Jalal et al., 2020; Haryanto et al., 2020).

The study highlights the role of overconfidence bias in cryptocurrency investment decisions. Previous literature has suggested that overconfident investors are more likely to participate in risky investment activities, such as cryptocurrency trading (Hidajat, 2019; Kim et al., 2022), and that men in particular are more inclined to be overconfident and engage in more risky investments than women (Barber & Odean, 2001; Poyser, 2018).

The findings of this study are consistent with previous research, including Sudzina et al. (2021), who found that early cryptocurrency investors are more likely to display overconfidence and have less self-control, and Tran (2019), who found evidence of overconfidence bias in the cryptocurrency market, particularly in Bitcoin and Ripple investments. Syarkani and Tristanto (2022) also concluded that overconfidence and financial literacy have a positive impact on an individual's decision to invest in cryptocurrency.

The study also investigated the financial literacy and risk appetite of cryptocurrency investors and non-investors. The results indicate that cryptocurrency investors have a higher understanding of Bitcoin compared to non-investors. However, non-investors still demonstrated a relatively high level of financial literacy, with 76% having a basic understanding of interest, 72% having basic knowledge about inflation, and 83% having a basic understanding of investment concepts.

Furthermore, the study found that the risk appetite of cryptocurrency investors is relatively high, with a significant proportion of investors willing to take on substantial or above-average risk. In contrast, non-investors are less likely to have a high-risk appetite towards cryptocurrencies, with only a smaller proportion showing a willingness to take on substantial or above-average risk.

These findings highlight the importance of individual investors conducting thorough research and analysis before making investment decisions, rather than solely relying on their personal knowledge and the actions and beliefs of others. It is important for investors to be aware of their emotions and biases and to exercise self-control when making investment decisions.

4.10.3 Optimism

The results of this study indicate that the decisions of others do impact the intention of some respondents to invest in cryptocurrency. This finding is consistent with previous literature that suggests that herding behaviour can impact investor decisions and lead to overreaction in the market (Anamika & Subramaniam, 2022). Furthermore, the majority of respondents in this study display an optimistic sentiment toward the future of cryptocurrency, which is in line with the findings of previous literature (Anamika et al., 2021; Hidajat, 2019). However, it is also interesting to note that despite acknowledging the likelihood of losses, the majority of respondents have still invested in cryptocurrency, indicating a potential optimism bias in their decision-making process.

The literature also suggests that younger investors with lower earnings and education levels tend to display greater optimism toward cryptocurrency (Benetton & Compiani, 2021). This study did not collect demographic data on respondents, but future research could investigate whether there is a correlation between demographic factors and optimism bias in cryptocurrency investment decisions.

Another interesting finding from previous literature is that investor sentiment resulting from news headlines can impact cryptocurrency returns (Anamika & Subramaniam, 2022; Caferra, 2020). Future research could explore the extent to which media coverage and social media activity impact investor sentiment and decision-making in the South African cryptocurrency market. The results suggest that the decisions of others can impact investor decisions, and that there may be a potential optimism bias among cryptocurrency investors in South Africa.

4.10.4 Attitude toward cryptocurrencies

The logistic regression findings of this study are consistent with previous research that has shown that attitudes and beliefs about cryptocurrency play an important role in investment decision making (Raza et al., 2019). The results of this study suggest that individuals who believe that cryptocurrencies offer advantages over traditional payment systems are more likely to invest in cryptocurrencies. This finding is supported by previous research which has found that perceived benefits of cryptocurrencies such as decentralisation and anonymity are strong drivers of investment behaviour (Cheah & Fry, 2015).

Similarly, the finding that financial literacy is a significant predictor of cryptocurrency investment is consistent with previous research. The finding that basic investment knowledge is positively associated with cryptocurrency investment is supported by prior research conducted by Yermack (2017).

The results of this study also indicate that the perception of a high risk of fraud and online theft when using cryptocurrencies is associated with a higher likelihood of cryptocurrency investment. Although, this finding is counterintuitive, it is possible that individuals who are more risk-tolerant or have a higher risk appetite are more likely to invest in cryptocurrencies despite the perceived risks.

4.11 What is the level of awareness of cryptocurrency in South Africa and do investors understand the risks involved in cryptocurrency investment?

The results of the survey indicate that there is a high level of awareness of cryptocurrency in South Africa. This finding is consistent with the previous literature, which has shown that cryptocurrency has gained significant traction among consumers globally, including in Austria (Stix, 2021), Germany (Steinmetz et al., 2021), Canada (Henry et al., 2019), the United States (Schuh & Shy, 2016), and Japan (Fujiki, 2020).

However, the survey results also highlight that there is a lack of understanding about the basic characteristics of Bitcoin among South African respondents. For example, only 41% of respondents correctly indicated that the total supply of Bitcoin is fixed, suggesting that many South African investors may not fully comprehend the deflationary nature of Bitcoin. This lack of understanding could lead to uninformed investment decisions and may expose investors to unnecessary risks.

On the other hand, the survey results also reveal that a vast majority of respondents, 92%, correctly indicated that Bitcoin is a decentralised currency that is not controlled by any government. This finding suggests that South African investors are aware of the key benefits of cryptocurrency, including the freedom from centralised control and censorship. However, it is still essential for investors to understand the risks involved in cryptocurrency investment, as cryptocurrencies are still considered a highly speculative and volatile asset class. The survey results suggest that while there is a high level of awareness of cryptocurrency among South African investors, there is also

a need for education and better understanding of the risks involved in cryptocurrency investment.

The logistic regression findings of this study are in contrast with some previous research that suggested that demographic factors such as age, gender, and education, were significantly associated with cryptocurrency awareness (Gandal et al., 2018). Gandal et al. (2018) found that younger individuals and those with higher education were more likely to use cryptocurrencies, suggesting a positive correlation between awareness and adoption.

The lack of significant effect of demographic variables in this study may be due to the fact that cryptocurrency awareness is becoming more mainstream and accessible to a wider audience, including those who do not fit the traditional demographic profile of early adopters.

In terms of Bitcoin knowledge, previous studies have found mixed results, with some suggesting a positive correlation between Bitcoin knowledge and cryptocurrency awareness (Böhme et al., 2015). The lack of significant effect of Bitcoin knowledge in this study may be due to the fact that there are other factors, such as media exposure and word-of-mouth communication, that may have a greater influence on cryptocurrency awareness (Cheah & Fry, 2015).

4.12 What are the attributes and characteristics of cryptocurrency investors in South Africa?

4.12.1 Ownership

The research investigated the attributes and characteristics of cryptocurrency investors in South Africa. The results indicate that the majority of cryptocurrency investors are younger males, with 74% of investors below the age of 35 and 69% being male. The level of education is also high, with 52% of investors holding postgraduate degrees. In terms of employment status, the majority of investors are employed or self-employed, accounting for 67% of the sample. The study also found that cryptocurrency investors in South Africa have above-average incomes.

These findings are consistent with previous literature that have shown that cryptocurrency investors are more likely to be young males with higher levels of education and higher pre-tax incomes (Fujiki, 2020; Henry et al., 2019; Lammer et al., 2020; Schuh and Shy, 2016; Stix, 2021). However, it is interesting to note that a

significant proportion of cryptocurrency investors in South Africa had only completed high school, accounting for 19% of the sample.

The research also found that the percentage of individuals who have invested in cryptocurrency varies depending on their taxable income bracket in South Africa. Among those with a taxable income less than R216 200, 18% had invested in cryptocurrency, and for individuals with taxable income exceeding R216 200, the percentage increased to 28%. This finding is consistent with studies that have shown that cryptocurrency investors tend to have higher pre-tax incomes (Fujiki, 2020; Henry et al., 2019; Lammer et al., 2020; Schuh and Shy, 2016; Stix, 2021).

Previous studies have reported that the main motives for owning cryptocurrencies are the speculative opportunity or the store of value provided by the cryptocurrency, as well as the anonymity and privacy of the blockchain system (Ermakova et al., 2017; Henry et al., 2019; Schuh and Shy, 2016; Steinmetz et al., 2021; Stix, 2021). Other incentives that cryptocurrencies offer to consumers include innovative technology, the ability to administer irreversible transactions, transparency in the way that new coins are created, as well as the removal of inflation due to the predetermined total supply of 21 million coins (Alzahrani and Daim, 2019; Nakamoto, 2008; Walton and Johnston, 2018; Weber, 2014).

A significant proportion of cryptocurrency investors in Japan (39%) had little to no understanding of cryptocurrencies, and only about half of these investors made a profit from their investment (Fujiki, 2020). This highlights the need for education and awareness campaigns on cryptocurrency and its associated risks. The research findings suggest that cryptocurrency investors in South Africa are generally younger males with higher levels of education and higher pre-tax incomes.

The logistic regression results of this study provide insights into the attributes and characteristics of cryptocurrency investors in South Africa. The study identified that demographic factors such as age and gender, and profession are significant predictors of cryptocurrency investment. These findings are consistent with previous research on cryptocurrency adoption and investment, which also suggests that demographics play an important role in shaping the adoption and use of cryptocurrencies (Böhme et al., 2015; Stix, 2021).

The result that males are more prone to invest in cryptocurrency is in line with previous research that has found a gender gap in cryptocurrency adoption and investment (Böhme et al., 2015; Stix, 2021; Yelowitz & Wilson, 2019). The finding that younger individuals are more likely to invest in cryptocurrency is also consistent with previous studies that have shown that younger generations are more receptive to new technologies (Stix, 2021; Yelowitz & Wilson, 2019).

The result that individuals in the information and communication technology profession are more likely to invest in cryptocurrency is also in line with previous research that has found a positive relationship between technological expertise and cryptocurrency investment (Yelowitz & Wilson, 2019).

Overall, cryptocurrency investors are more likely to be younger, males, have higher levels of education, and higher pre-tax incomes.

4.12.2 Trustworthiness

The aim of this study was to investigate the attributes and characteristics of cryptocurrency investors in South Africa. One of the factors that emerged from the previous literature is the role of trust in the adoption and investment in cryptocurrency. According to the literature, trust is a multifaceted construct that involves trust in the blockchain technology, government, and financial system (Grinberg, 2012; Lo & Wang, 2014; Schuh & Shy, 2016).

The findings from this study revealed that respondents who do not own cryptocurrency are slightly more reluctant to trust the South African rand, the central bank, and domestic banks. This reluctance to trust may contribute to their disinterest in investing in cryptocurrency. In contrast, respondents who have invested in cryptocurrency displayed feelings of discontent with the South African rand, with only 22% stating that they are content with the currency. Additionally, a majority of respondents (62%) did not agree that the South African rand will be a stable currency in 5 years' time. These findings suggest that trust plays a crucial role in the adoption and investment in cryptocurrency in South Africa.

Furthermore, the study found that a significant proportion of respondents (32%) do not have a high level of faith in the South African Reserve Bank (SARB), while 37% of respondents displayed a positive sentiment toward the SARB. This finding is

consistent with the literature, which suggests that trust in the government and financial system is a crucial factor in the adoption and investment in cryptocurrency.

In contrast, when respondents were asked about their sentiment toward domestic banks, 46% of respondents stated that they had a high level of faith in domestic banks, while 17% of respondents stated that they did not. This finding is also consistent with the literature, which suggests that trust in the financial system and banking institutions is an important factor in the adoption and investment in cryptocurrency. These findings highlight the important role of trust in the adoption and investment in cryptocurrency in South Africa.

4.13 What are the attributes of cryptocurrency that drive the investment of cryptocurrency in South Africa?

The findings of this study are consistent with previous literature which identifies various motives for investing in cryptocurrencies. One common reason for investing in cryptocurrency is the low transaction costs incurred by users, which allows for a more efficient and cost-effective payment system (Walton and Johnston, 2018). This is supported by the current study, with 76% of respondents stating that the low transaction costs of cryptocurrencies are a desirable feature.

Another motive for investing in cryptocurrencies is the anonymity and privacy of the blockchain system, which allows participants to transact or transfer funds anonymously (Steinmetz et al., 2021). The current study found that 81% of respondents consider anonymity as a desirable feature of cryptocurrencies, which is consistent with previous research.

Furthermore, the innovative technology underlying cryptocurrencies is also a significant driver of investment, with 95% of respondents indicating that this is a characteristic that drives their interest in investing in cryptocurrency. This finding aligns with the previous research of Weber (2014) who reported that cryptocurrencies offer innovative technology that enables irreversible transactions, transparency, and removal of inflation.

Additionally, the perception of the possibility of high returns is another important driver for investment in cryptocurrency, with 93% of respondents agreeing that this attribute drives their interest in investing in cryptocurrency. This perception may be related to the high volatility and speculative nature of the cryptocurrency market, which leads to

significant price fluctuations and high returns for investors. This finding is consistent with the studies of Stix (2021) and Henry et al. (2019), who reported that the speculative opportunity or the store of value provided by the cryptocurrency was a primary motive for owning cryptocurrency.

The current study found that 71% of respondents consider transparency provided by cryptocurrencies as a desirable feature, which may be indicative of the increasing interest in transparency and accountability in the financial industry.

The study also found that 81% of respondents believe that cryptocurrencies will be the future of online spending, suggesting that individuals are optimistic about the future of cryptocurrencies as a mainstream payment method. This finding is consistent with previous literature, which has suggested that cryptocurrencies may have the potential to disrupt traditional payment systems (Nakamoto, 2008).

The study found that the respondents' lack of trust in the South African government or banks was a significant driver for investment in cryptocurrencies, with 55% of respondents indicating this as a motive for investing. This finding may be indicative of a lack of faith in traditional financial institutions and the need for alternative investment options.

The most prominent factors driving investment in cryptocurrency are the new technology, the potential for high returns, the anonymity and transparency of transactions, the future of online spending, and the low transaction costs associated with cryptocurrency. These findings are consistent with previous studies that have highlighted similar factors as drivers for investment in cryptocurrency (Ermakova et al., 2017; Henry et al., 2019; Steinmetz et al., 2021; Stix, 2021; Walton and Johnston, 2018).

The high level of interest in the new technology of cryptocurrency among respondents suggests that many South Africans are attracted to the innovative nature of cryptocurrencies. This may reflect a desire for a more efficient and cost-effective payment system, as well as a fascination with the technological advancements that underpin cryptocurrency.

Another significant driver for investment in cryptocurrency is the potential for high returns. The high volatility and speculative nature of the cryptocurrency market may

contribute to the perception that cryptocurrencies can yield high profits. However, it is important to note that investing in cryptocurrency is also associated with a high level of risk due to the market's volatility and lack of regulation.

The anonymity and transparency of cryptocurrency transactions are also desirable features for many respondents. This aligns with previous studies that have identified privacy as a key factor motivating cryptocurrency adoption (Ermakova et al., 2017; Schuh and Shy, 2016; Steinmetz et al., 2021; Stix, 2021). The anonymity of transactions may appeal to individuals who value privacy or want to avoid the traditional financial system's oversight. Meanwhile, the transparency of cryptocurrency transactions can increase trust and provide greater visibility into the financial system.

The study also found that respondents believe that cryptocurrencies are the future of online spending. This may reflect a growing trend toward digital payments and the increasing popularity of cryptocurrencies as a payment method. Additionally, the low transaction costs associated with cryptocurrencies may make them more appealing than traditional payment systems.

The study found that respondents' lack of trust in the South African government or banks is a significant driver of investment in cryptocurrency. This finding suggests that some individuals may view cryptocurrency as a way to circumvent traditional financial systems and the associated risks of government or bank intervention.

The study found that respondents' desire to make quick money was not a significant factor in deciding whether to invest in cryptocurrency. This suggests that the perceived potential for high returns is not necessarily driven by a desire for quick profits, but rather by a belief in the long-term viability of cryptocurrencies. The results of the study suggest that the attributes of cryptocurrency that drive investment in South Africa are complex and multifaceted.

4.14 What are the attributes of cryptocurrency that drive non-investment of cryptocurrency in South Africa?

The current study found that the main reason for individuals' reluctance to invest in cryptocurrency is the perceived excessive risk involved, which is consistent with the findings of previous research (Arias-Oliva et al., 2019; Steinmetz et al., 2021). The high volatility of cryptocurrency prices, lack of regulation in the market, and the risk of online theft or fraud were also identified as significant factors that deter individuals

from investing in cryptocurrency. These factors are in line with the concerns raised by previous studies (Henry et al., 2019; Steinmetz et al., 2021).

The study also found that the high price of cryptocurrency and the lack of funds to invest were significant factors that prevented respondents from investing, which aligns with previous research that reported the same finding (Fujiki, 2020). Additionally, the lack of trust in the new technology was identified as a significant attribute that contributed to non-investment, which is also consistent with previous literature (Steinmetz et al., 2021).

Overall, the findings of the current study align with the existing literature, suggesting that the risks involved in cryptocurrency investment, lack of regulation, high volatility of cryptocurrency prices, and the risk of online theft or fraud are key factors that may deter individuals from investing in cryptocurrency.

Chapter 5 – Conclusion

5 Introduction

This chapter evaluates the objectives of this study which was to determine the attributes and characteristics of cryptocurrency investors in South Africa. This research question was followed by 4 sub-questions which investigated the level of awareness of cryptocurrency in South Africa, whether cryptocurrency investors understand the risks involved in cryptocurrency investment, the attributes of cryptocurrency that drive cryptocurrency investment and the reluctance to invest. The final sub-question of this study, which incorporated the theoretical framework used in this paper, investigated the impact of emotions and other biases on an individual's decision to invest in cryptocurrency. The following section highlights the conclusions reached in relation to the objectives of this study. Section 5.2 acknowledges any limitations of this study and finally, section 5.3 suggests areas for further research.

5.1 Conclusion on the main findings of this study

The study found that the majority of cryptocurrency investors in South Africa are younger males with higher levels of education and higher pre-tax incomes and identified that individuals in the information and communication technology profession are more likely to invest in cryptocurrency. The study also revealed that demographics such as age, gender, and profession are significant predictors of cryptocurrency investment. This provides insights into the attributes and characteristics of cryptocurrency investors in South Africa and contributes to the existing knowledge base on cryptocurrency adoption and investment.

This research found that there is a high level of awareness of cryptocurrency in South Africa, but there is also a lack of understanding about its basic characteristics, which could lead to uninformed investment decisions and expose investors to unnecessary risks. Demographic factors and Bitcoin knowledge were not found to significantly affect cryptocurrency awareness which may be due to other factors such as media exposure and word-of-mouth that have a greater influence on cryptocurrency awareness. The majority of respondents correctly identified that Bitcoin is a decentralised currency that is not controlled by any government, but only 41% knew that the total supply of Bitcoin is fixed. This suggests that individuals may not be aware of the risks involved in

cryptocurrency investment. Overall, this highlights the need for education and better understanding of the risks involved in cryptocurrency investment.

The main findings in relation to the attributes of cryptocurrency that drive investment revealed that the innovative technology, low transaction costs, potential for high returns and anonymity feature are key factors that drive cryptocurrency investment. Furthermore, the lack of trust in traditional financial institutions and the government was found to be a significant driver for cryptocurrency investment. Interestingly, the desire to make quick money was not found to be a significant factor in investment decisions. These findings provide insights into the multifaceted nature of cryptocurrency adoption in South Africa and contribute to the understanding of the driver of cryptocurrency investment in South Africa.

This study found that the perceived excessive risk involved in cryptocurrency investment was the most significant factor that resulted in individuals' reluctance to invest. Other significant factors that deter individuals from investing were the high volatility of cryptocurrency prices, the lack of regulation and the risk of online fraud or theft.

The study revealed that emotions and biases, particularly herding behaviour, optimism bias, overconfidence bias, and attitude toward cryptocurrencies, influence investment decisions in the cryptocurrency market. The study found evidence of herding behaviour among cryptocurrency investors in South Africa, indicating that the behaviour of others investing in cryptocurrency has an impact on an individual's intention to invest. Additionally, the study identified the presence of optimism bias, with investors believing that positive returns from cryptocurrency were very likely, despite acknowledging that losses were also very likely. Furthermore, the study highlighted the role of overconfidence bias in cryptocurrency investment decisions, with overconfident investors being more likely to participate in risky investment activities, such as cryptocurrency trading. Finally, the logistic regression findings indicate that individuals who believe that cryptocurrencies offer advantages over traditional payment systems are more likely to invest in cryptocurrency. These findings highlight the importance of individual investors conducting thorough research and analysis before making investment decisions, rather than solely relying on the actions and beliefs of others. It is crucial for investors to be aware of their emotions and biases

and to exercise self-control when making investment decisions. Overall, the findings of this study contribute to the understanding of the impact of emotions and biases on investment decisions in the cryptocurrency market and have important implications for individual investors and policymakers alike.

5.2 Limitations of this study

This research was carried out in a single time period, rather than over a few years. As a result, this paper only dealt with determining the current attributes and characteristics of cryptocurrency ownership and did not determine the changes in the attributes and characteristics of cryptocurrency ownership over a few years. Another limitation that was experienced in this research project is that the data collection will mainly take place in among the professional sphere which may result in the study sample not being representative of the South African population. A further additional constraint of this study is its dependence on the honesty and impartiality of the survey participants when responding to the surveys, which introduces the potential for some of the data to be unreliable.

5.3 Areas for further research

This study did not aim to identify the factors that resulted in a reduction of investment, but rather focused on factors that contributed to cryptocurrency investment and non-investment as well as potential ownership. Future research could focus on conducting a study to investigate the factors that result in a reduction of investment, such as the impact of a reduction in the price of cryptocurrency on investment. Further research could investigate the investment patterns of cryptocurrency investors in South Africa, including the types of cryptocurrencies invested in, the frequency of investment, and the investment strategies used. This could help identify any patterns or trends that could benefit individuals' future investment decisions. Furthermore, this study could be conducted in the future to see the changes in the views of cryptocurrency. Additionally, further research could focus on investigating whether individuals know the differences between different cryptocurrencies and whether certain cryptocurrencies are preferred by investors over others. The government could use the knowledge gained from understanding the factors that contribute to cryptocurrency investment to create legislation aimed at protecting investors from potential risks. Additionally, the information gathered on investment patterns and trends could guide

the government in creating appropriate tax legislation to ensure that taxes are paid on cryptocurrency investments, similar to traditional investments.

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Appendix A: Research instrument – Survey

1. **Please select the correct answer regarding your sociodemographic information**

1.1. Gender of the participant

Male

Female

Prefer not to say

1.2. Age of the participant

18 – 25

26 – 35

36 – 45

46 – 55

Above 56

1.3. Highest qualification obtained

Grade 9 and below

Grade 10

Grade 11

Grade 12

Higher Certificate

Diploma

Undergraduate Degree

Postgraduate Degree

1.4. Please choose the statement that most accurately applies to you

I am currently employed or self-employed

I am currently unemployed

I am a student

I am retired

1.5. Please choose the statement that most accurately applies to you

I own my place of residence and my own business

I own my place of residence

I rent my place of residence and own a business

I rent my place of residence

I do not own or rent my place of residence or my own business

1.6. Please select the tax bracket that you fall into

Taxable income less than R216 200

Taxable income not exceeding R216 200

Taxable exceeding R216 200 but equal to or not exceeding R337 800

Taxable exceeding R337 800 but equal to or not exceeding R467 500

Taxable exceeding R467 500 but equal to or not exceeding R613 600

Taxable exceeding R613 600 but equal to or not exceeding R782 200

Taxable exceeding R782 200 but equal to or not exceeding R1 656 600

Taxable income exceeding R1 656 600

I am not sure or prefer not to say

1.7. Please select the area of your professional expertise

Business and admin (incl. finance)
Education
Health
ICT
Legal
Science and engineering (incl. actuarial)
Other

Please see the list below of the top 10 cryptocurrencies (according to market capitalisation) for clarification of what cryptocurrency is before answering the following questions.

1. Bitcoin
2. Ethereum
3. Tether
4. BNB
5. USD Coin
6. XRP
7. Cardano
8. Solana
9. Binance USD
10. Dogecoin

2. Have you heard of bitcoin or other cryptocurrencies?

Yes

No

[if the respondent answers no, they will proceed to question 10]

3. Pick the answer that most accurately applies to you

I currently own bitcoin

I currently own another cryptocurrency

I owned cryptocurrencies in the past but not anymore

I have never owned cryptocurrency but have an interest in purchasing cryptocurrency

I merely know of cryptocurrency

I know of cryptocurrency but have no interest in purchasing cryptocurrency

4. **Which of the following statements most accurately applies to you in relation to your intent to purchase cryptocurrencies?**

[conditional upon non-ownership]

4.1. It is very likely that I will purchase cryptocurrency at some time

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

5. **Select the statement that most accurately applies to you with respect to your main use of cryptocurrency with 'strongly agree' being of most importance to you and 'strongly disagree' being of least importance to you.**

[conditional upon ownership]

I mainly use cryptocurrency as:

5.1. A store of wealth

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

5.2. A speculative investment

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

5.3. A medium of exchange

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

5.4. To transfer funds anonymously

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

6. Select the statement that most accurately applies to you in relation to your trust in the South African rand, the government, and South African banks.

6.1. I am content with the South African rand as a currency

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

6.2. I am certain that the South African rand will be a stable currency in 5 years' time

Strongly agree

Agree

neutral

Disagree

Strongly disagree

6.3. I have a high level of faith in the South African Reserve Bank

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

6.4. I have a high level of faith in South African domestic banks, such as ABSA, FNB/RMB, Standard Bank, Nedbank and Capitec.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

6.5. I have complete trust in the financial advice provided by my main bank.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

7. Select the statement that most accurately applies to you in relation to your attitudes towards cryptocurrency

7.1. Cryptocurrency offers advantages over the conventional payment system (for example, cash or debit/credit card, and EFTs)

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

7.2. Positive returns from cryptocurrency are very likely

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

7.3. Losses from cryptocurrency are very likely

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

7.4. When using cryptocurrency, there is a great danger of fraud and online theft

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

7.5. When using cryptocurrency, it exposes me to high volatility against the South African rand

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

8. Which of the motives (listed below) are of most importance to you regarding your investment in cryptocurrency or your intent to invest in cryptocurrency?

[conditional upon ownership or intention to invest in cryptocurrency]

8.1. Cryptocurrency provides an alternative form of exchange with low transaction costs

Yes

No

8.2. The anonymity feature of cryptocurrency is a desirable feature

Yes

No

8.3. Cryptocurrencies provide an investment opportunity with the possibility of high returns

Yes

No

8.4. To make quick money

Yes

No

8.5. Many people I know are investing in cryptocurrency and I do not want to miss out on an investment opportunity

Yes

No

8.6. I do not trust South African banks/ or the government

Yes

No

8.7. The transparency provided by cryptocurrency is a desirable feature

Yes

No

8.8. I expect cryptocurrencies to outperform traditional investments in times of recession

Yes

No

8.9. Cryptocurrencies are the future of online spending

Yes

No

8.10. I have an interest in new technology

Yes

No

9. Which of the reasons (listed below) are of most importance to you regarding your intention <u>not</u> to purchase cryptocurrency?

[conditional upon non-ownership and no intention to invest in Part 4]

9.1. I do not understand the technology

Yes

No

9.2. Not accepted very often for payment

Yes

No

9.3. I am happy with the conventional financial system

Yes

No

9.4. The risk involved in owning cryptocurrency is excessive

Yes

No

9.5. It is not a regulated form of exchange

Yes

No

9.6. I do not trust the new technology

Yes

No

9.7. I do not have enough money to purchase cryptocurrencies

Yes

No

9.8. There is a high risk of online theft or fraud

Yes

No

10. Choose the correct answer for the following questions

10.1. The total supply of Bitcoin is fixed

True

False

10.2. Bitcoin is backed by a government

True

False

10.3. All Bitcoin transactions are recorded on a distributed ledger

True

False

10.4. If you have R1 000 in a savings account and the interest rate is 2% per annum. How much will you have in your savings account after 5 years?

More than R1 020

Exactly R1 020

Less than R1 020

I do not know

10.5. If you have R1 000 in a savings account and the interest rate is 1% and inflation is 2%. How much will you be able to buy with this money in 1 year?

Exactly the same

More than today

Less than today

I do not know

10.6. Indicate whether the following statement is true or false

Purchasing a single company's shares is less risky than purchasing a portfolio of shares

True

False

11. Choose the statement that applies to you regarding your asset holdings.

11.1. I currently have one or more of the following: bank savings, investment funds, shares in a company, or other assets such as investment property or paintings

Yes

No

11.2. In answering the following, choose the statement that most accurately describes your attitude toward risk

11.2.1. I am willing to take on substantial risks if I expect substantially high profits

Yes

No

11.2.2. I am willing to take on above-average risks if I expect above-average profits

Yes

No

11.2.3. I am willing to take on average risks if I expect average profits

Yes

No

11.2.4. I am not willing to take on any risk

Yes

No

Appendix B – Binomial logistic regression

Table 18 Displays the results for regression 1

	B	S.E.	Wald	df	Sig.	Exp(B)
Age of the participant			6.986	4	.137	
Age of the participant(1)	2.198	.991	4.921	1	.027	9.006
Age of the participant(2)	2.066	.949	4.745	1	.029	7.896
Age of the participant(3)	.782	.994	.620	1	.431	2.187
Age of the participant(4)	.437	.911	.231	1	.631	1.549
Gender of the participant			8.906	2	.012	
Gender of the participant(1)	19.964	24070.111	.000	1	.999	467781624.229
Gender of the participant(2)	18.745	24070.111	.000	1	.999	138309633.276
Highest qualification obtained			2.812	4	.590	
Highest qualification obtained(1)	-1.056	.673	2.466	1	.116	.348
Highest qualification obtained(2)	-.122	1.118	.012	1	.913	.885
Highest qualification obtained(3)	-.599	.857	.488	1	.485	.549
Highest qualification obtained(4)	-.288	.529	.297	1	.586	.750
Employment			2.778	3	.427	
Employment(1)	-1.296	1.239	1.094	1	.296	.274
Employment(2)	-.648	1.333	.237	1	.627	.523
Employment(3)	-1.979	1.341	2.178	1	.140	.138
Financial Wealth			4.149	4	.386	
Financial Wealth(1)	.197	.833	.056	1	.813	1.218
Financial Wealth(2)	.024	.685	.001	1	.972	1.024
Financial Wealth(3)	-2.646	1.409	3.530	1	.060	.071
Financial Wealth(4)	-.264	.464	.324	1	.569	.768

Please select the tax bracket that you fall into			9.500	7	.219	
Please select the tax bracket that you fall into(1)	-.116	.506	.052	1	.819	.891
Please select the tax bracket that you fall into(2)	-.712	.747	.908	1	.341	.491
Please select the tax bracket that you fall into(3)	.353	.728	.234	1	.628	1.423
Please select the tax bracket that you fall into(4)	.390	.950	.169	1	.681	1.478
Please select the tax bracket that you fall into(5)	-2.544	1.313	3.756	1	.053	.079
Please select the tax bracket that you fall into(6)	.233	.662	.124	1	.725	1.263
Please select the tax bracket that you fall into(7)	2.215	1.211	3.348	1	.067	9.163
Please select the area of your professional expertise			10.353	6	.111	
Please select the area of your professional expertise(1)	.817	.784	1.085	1	.298	2.263
Please select the area of your professional expertise(2)	.597	.996	.360	1	.549	1.817
Please select the area of your professional expertise(3)	1.229	1.050	1.370	1	.242	3.419
Please select the area of your professional expertise(4)	2.440	1.077	5.130	1	.024	11.469
Please select the area of your professional expertise(5)	-1.269	1.520	.697	1	.404	.281
Please select the area of your professional expertise(6)	1.716	.958	3.207	1	.073	5.564
I am content with the South African rand as a currency			2.314	4	.678	
I am content with the South African rand as a currency(1)	-.038	.961	.002	1	.968	.963
I am content with the South African rand as a currency(2)	-.324	.888	.133	1	.715	.723

I am content with the South African rand as a currency(3)	-.546	.875	.389	1	.533	.579
I am content with the South African rand as a currency(4)	-1.055	.932	1.283	1	.257	.348
I am certain that the South African rand will be a stable currency in 5 years' time			5.372	4	.251	
I am certain that the South African rand will be a stable currency in 5 years' time(1)	-2.180	1.317	2.737	1	.098	.113
I am certain that the South African rand will be a stable currency in 5 years' time(2)	-1.053	1.235	.727	1	.394	.349
I am certain that the South African rand will be a stable currency in 5 years' time(3)	-1.678	1.230	1.862	1	.172	.187
I am certain that the South African rand will be a stable currency in 5 years' time(4)	-1.063	1.307	.662	1	.416	.345
I have a high level of faith in the South African Reserve Bank			3.667	4	.453	
I have a high level of faith in the South African Reserve Bank(1)	.892	1.290	.478	1	.489	2.439
I have a high level of faith in the South African Reserve Bank(2)	.421	1.223	.118	1	.731	1.523
I have a high level of faith in the South African Reserve Bank(3)	1.216	1.160	1.099	1	.295	3.375
I have a high level of faith in the South African Reserve Bank(4)	1.165	1.084	1.155	1	.282	3.207
I have a high level of faith in the South African domestic banks, such as ABSA, FNB/RMB, Standard Bank, Nedbank and Capitec.			5.811	4	.214	

I have a high level of faith in the South African domestic banks, such as ABSA, FNB/RMB, Standard Bank, Nedbank and Capitec.(1)	-1.268	1.406	.813	1	.367	.281
I have a high level of faith in the South African domestic banks, such as ABSA, FNB/RMB, Standard Bank, Nedbank and Capitec.(2)	.099	.958	.011	1	.918	1.104
I have a high level of faith in the South African domestic banks, such as ABSA, FNB/RMB, Standard Bank, Nedbank and Capitec.(3)	.108	.852	.016	1	.899	1.114
I have a high level of faith in the South African domestic banks, such as ABSA, FNB/RMB, Standard Bank, Nedbank and Capitec.(4)	-.837	.731	1.310	1	.252	.433
I have complete trust in the financial advice provided by my main bank?			7.670	4	.104	
I have complete trust in the financial advice provided by my main bank? (1)	2.279	1.408	2.620	1	.106	9.763
I have complete trust in the financial advice provided by my main bank? (2)	.338	1.071	.100	1	.752	1.402
I have complete trust in the financial advice provided by my main bank? (3)	-.460	1.025	.201	1	.654	.631
I have complete trust in the financial advice provided by my main bank? (4)	.025	1.021	.001	1	.981	1.025
If you have R1 000 in a savings account and the interest rate is 2% per annum. How much will you have in your savings account after 5 years?(1)	.060	.553	.012	1	.914	1.061

If you have R1 000 in a savings account and the interest rate is 1% and inflation is 2%. How much will you be able to buy with this money in 1 year?(1)	-.368	.528	.484	1	.486	.692
Indicate whether the following statement is true or false: Purchasing a single company's shares is less risky than purchasing a portfolio of shares.(1)	-.235	.551	.183	1	.669	.790
Choose the statement that most accurately describes your attitude toward risk.			5.283	4	.259	
Choose the statement that most accurately describes your attitude toward risk.(1)	-1.770	.969	3.335	1	.068	.170
Choose the statement that most accurately describes your attitude toward risk.(2)	-1.694	1.137	2.219	1	.136	.184
Choose the statement that most accurately describes your attitude toward risk.(3)	-.468	.523	.802	1	.371	.626
Choose the statement that most accurately describes your attitude toward risk.(4)	-.592	.488	1.471	1	.225	.553
Constant	-19.020	24070.111	.000	1	.999	.000

Table 19 Displays the results for regression 2

	B	S.E.	Wald	df	Sig.	Exp(B)
Gender of the participant			4.857	2	.088	
Gender of the participant(1)	20.036	26209.447	.000	1	.999	502777155.542

Gender of the participant(2)	19.275	26209.447	.000	1	.999	235048616.843
Age of the participant			7.468	4	.113	
Age of the participant(1)	1.491	.696	4.583	1	.032	4.440
Age of the participant(2)	1.777	.713	6.212	1	.013	5.912
Age of the participant(3)	1.033	.792	1.699	1	.192	2.809
Age of the participant(4)	.908	.738	1.514	1	.218	2.479
Highest qualification obtained			1.364	4	.850	
Highest qualification obtained(1)	-.569	.556	1.046	1	.306	.566
Highest qualification obtained(2)	-.020	.874	.001	1	.982	.980
Highest qualification obtained(3)	-.465	.722	.415	1	.520	.628
Highest qualification obtained(4)	-.176	.432	.166	1	.684	.839
Employment			2.698	3	.441	
Employment(1)	-.787	1.012	.605	1	.437	.455
Employment(2)	-.098	1.129	.007	1	.931	.907
Employment(3)	-1.340	1.135	1.394	1	.238	.262
The total supply of Bitcoin is fixed.(1)	-1.099	.315	12.127	1	<.001	.333
Bitcoin is backed by a government.(1)	.209	.605	.119	1	.730	1.232
All Bitcoin transactions are recorded on a distributed ledger.(1)	.109	.357	.093	1	.761	1.115
If you have R1 000 in a savings account and the interest rate is 2% per annum. How much will you have in your savings account after 5 years?(1)	-.263	.476	.306	1	.580	.769

If you have R1 000 in a savings account and the interest rate is 1% and inflation is 2%. How much will you be able to buy with this money in 1 year?(1)	-.270	.456	.351	1	.553	.763
Indicate whether the following statement is true or false: Purchasing a single company's shares is less risky than purchasing a portfolio of shares.(1)	-.526	.477	1.214	1	.271	.591
Choose the statement that most accurately describes your attitude toward risk.			3.084	4	.544	
Constant	-19.941	26209.447	.000	1	.999	.000

Table 20 Displays the results for regression 3

	B	S.E.	Wald	df	Sig.	Exp(B)
Gender of the participant			4.149	2	.126	
Gender of the participant(1)	19.790	25206.341	.000	1	.999	393345446.344
Gender of the participant(2)	18.934	25206.341	.000	1	.999	167154648.950
Age of the participant			2.951	4	.566	
Age of the participant(1)	1.039	.813	1.633	1	.201	2.826
Age of the participant(2)	.763	.841	.823	1	.364	2.144
Age of the participant(3)	.426	.912	.218	1	.641	1.531
Age of the participant(4)	.027	.956	.001	1	.978	1.027

Highest qualification obtained			5.302	4	.258	
Highest qualification obtained(1)	-1.501	.707	4.510	1	.034	.223
Highest qualification obtained(2)	-.095	1.015	.009	1	.925	.909
Highest qualification obtained(3)	-.495	.894	.307	1	.580	.610
Highest qualification obtained(4)	-.772	.526	2.152	1	.142	.462
Employment			1.295	3	.730	
Employment(1)	-.408	1.111	.135	1	.713	.665
Employment(2)	-.101	1.391	.005	1	.942	.904
Employment(3)	-1.082	1.261	.737	1	.391	.339
If you have R1 000 in a savings account and the interest rate is 2% per annum. How much will you have in your savings account after 5 years?(1)	.096	.582	.027	1	.868	1.101
If you have R1 000 in a savings account and the interest rate is 1% and inflation is 2%. How much will you be able to buy with this money in 1 year?(1)	-.338	.530	.408	1	.523	.713
Indicate whether the following statement is true or false: Purchasing a single company's shares is less risky than purchasing a portfolio of shares.(1)	-1.236	.593	4.337	1	.037	.291
Choose the statement that most accurately describes your attitude toward risk.			1.999	4	.736	

Choose the statement that most accurately describes your attitude toward risk.(1)	-.893	1.077	.687	1	.407	.410
Choose the statement that most accurately describes your attitude toward risk.(2)	-1.007	1.010	.996	1	.318	.365
Choose the statement that most accurately describes your attitude toward risk.(3)	.084	.567	.022	1	.882	1.088
Choose the statement that most accurately describes your attitude toward risk.(4)	-.187	.500	.140	1	.709	.829
I believe that cryptocurrency offers advantages over the conventional payment system (for example, cash or debit/credit card, and EFTs)			23.377	4	<.001	
I believe that cryptocurrency offers advantages over the conventional payment system (for example, cash or debit/credit card, and EFTs)(1)	-1.559	1.152	1.829	1	.176	.210
I believe that cryptocurrency offers advantages over the conventional payment system (for example, cash or debit/credit card, and EFTs)(2)	-4.446	1.346	10.913	1	<.001	.012
I believe that cryptocurrency offers advantages over the conventional payment system (for example,	-2.721	.733	13.768	1	<.001	.066

cash or debit/credit card, and EFTs)(3)						
I believe that cryptocurrency offers advantages over the conventional payment system (for example, cash or debit/credit card, and EFTs)(4)	-1.271	.720	3.113	1	.078	.281
I believe that positive returns from cryptocurrency are very likely			10.504	4	.033	
I believe that positive returns from cryptocurrency are very likely (1)	-2.029	1.547	1.720	1	.190	.132
I believe that positive returns from cryptocurrency are very likely (2)	-1.516	1.086	1.950	1	.163	.219
I believe that positive returns from cryptocurrency are very likely (3)	-.811	.925	.769	1	.381	.445
I believe that positive returns from cryptocurrency are very likely (4)	.263	.912	.083	1	.773	1.301
I believe that losses from cryptocurrency are very likely			2.077	4	.722	
I believe that losses from cryptocurrency are very likely(1)	-22.087	20453.932	.000	1	.999	.000
I believe that losses from cryptocurrency are very likely(2)	-21.325	14009.932	.000	1	.999	.000

I believe that losses from cryptocurrency are very likely(3)	-.981	.683	2.062	1	.151	.375
I believe that losses from cryptocurrency are very likely(4)	-.476	.560	.722	1	.395	.621
When using cryptocurrency, I believe that there is a great danger of fraud and online theft			7.441	4	.114	
When using cryptocurrency, I believe that there is a great danger of fraud and online theft(1)	4.381	2.174	4.060	1	.044	79.880
When using cryptocurrency, I believe that there is a great danger of fraud and online theft(2)	-.247	.679	.133	1	.716	.781
When using cryptocurrency, I believe that there is a great danger of fraud and online theft(3)	.816	.600	1.848	1	.174	2.261
When using cryptocurrency, I believe that there is a great danger of fraud and online theft(4)	.122	.561	.047	1	.828	1.130
When using cryptocurrency, it exposes me to high volatility against the South African rand			2.301	4	.681	
When using cryptocurrency, it exposes me to high volatility against the South African rand(1)	.602	1.122	.288	1	.591	1.827

When using cryptocurrency, it exposes me to high volatility against the South African rand(2)	.734	.706	1.081	1	.298	2.084
When using cryptocurrency, it exposes me to high volatility against the South African rand(3)	.117	.624	.035	1	.851	1.125
When using cryptocurrency, it exposes me to high volatility against the South African rand(4)	-.107	.607	.031	1	.860	.898
Constant	-17.064	25206.341	.000	1	.999	.000