DURBAN UNIVERSITY OF TECHNOLOGY

THE BEHAVIOUR OF SMALL INVESTORS IN THE DERIVATIVES MARKET OF THE JOHANNESBURG STOCK EXCHANGE

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MAY 2024

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Submitted in fulfilment of the requirement of the degree of Doctor of Philosophy in Management Science specialising in Business Administration in the Faculty of Management Sciences at the Durban University of Technology

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MAY 2024

Supervisor_ __ **Date: 30-05-2024**

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ACKNOWLEDGEMENTS

Sincere gratitude to God Almighty who has shown me mercy and bestowed His grace on me to start and complete this study, I give Him all my praise. I am thankful to my supervisor Dr Rufus Adebayo of the Faculty of Management Sciences, Durban University of Technology (DUT). His supervision, constant encouragement, and critical comments have contributed to the completion of this study despite all odds. You have been a source of encouragement in correcting and empowering my writing skills and research competence. Your academic experience and expertise in scrutinizing every content of this study thoroughly have helped me in accomplishing my goal of it. My academic journey has been greatly influenced by your contributions and intentional involvement in this study.

I thank my Head of Department, Professor Dumisani Zondo for his constant administrative and academic expertise in making it possible for me to complete my doctoral study. Similarly, sincere appreciation goes to all the members of the Department of Entrepreneurial Studies and Management for their encouragement and support. My humble gratitude also goes to the Research Office at DUT under the leadership of Ms. Jeslyn Naidoo and Dr Stanley C. Onwubu for their assistance towards my successful completion of this journey. Likewise, to all individual investors who invested in JSE, I say a big thank you for their participation and support given to conduct my study with their investment company. I sincerely thank you all for your unwavering support.

To my beloved Husband, my one and only Ibikunle Olamide Ige, thanks for the advice and sincere love, your scolding, encouragement, and endless prayers are well appreciated. May you succeed in all that you do. Amen! You have unreservedly dedicated yourself and your time towards my success. I thank God for giving you to me as a gift for life. Thanks for the joy-filled and happy home you have given me and for making it possible for me to be a successful woman.

My appreciation also goes to my Daddy, the Intercontinental Financial Controller (IFC) of the Redeemed Christian Church of God (RCCG), Pastor J. A. Adeyokunnu for his continual encouragement, care and support always and I would like to also appreciate Pastor Oluyeye for his care and prayers throughout the study.

Last, but not least, I give all glory to Almighty God for all he has done in my life, for all his mercy and favour I have received, and most especially for helping me to come this far, it is only by his grace. Thank you, Lord, I am forever grateful.

DEDICATION

I, therefore, dedicate this work to God Almighty, my little angel Oluwalanke Ige and to my lovely and sweetest husband, Ibikunle Olamide Ige for their genuine love, prayers, patience, and perseverance towards me. I love you all.

ABSTRACT

The investment approach of individual investors varies from that of institutional investors, and each investor's strategies differ from one another. Investors must select the right investment path based on their unique requirements, risk tolerance, and expected returns, which adds complexity and criticality to the decision-making process. Therefore, this study investigates and identifies the key factors that influence the behaviour of small investors (individual/retail investors) in the Johannesburg Stock Exchange (JSE) derivatives market and ascertains the key factors that influence individual investor's decision-making in derivative markets in South Africa. The study used finance theories, such as, traditional finance theory and efficient market hypothesis theory with a focus on behavioural finance theory to explain investors' decision-making from a psychological point of view. In the past, there was a prevailing belief that investors made rational decisions when it came to their investments, while efficient Market Theory proposed that markets efficiently incorporate price-related information. Whereas behavioural finance studies have consistently shown that investors are susceptible to psychological factors that can compromise the rationality of their financial decisions. This study examined the psychological factors that influence individual investors' behaviour in derivative markets that are traded under the umbrella of the Johannesburg stock exchange. The survey's sample size and data collection units were determined through questionnaires and interviews conducted with both investors and brokers. Five hundred questionnaires were sent to the participants and 414 responses were retrieved. 25 interview questions were sent out to the investors and brokers and 16 response was received back from the market investors and brokers. The research utilized a mixed-methods approach, integrating both quantitative and qualitative techniques for data analysis. The findings reveal that investors' behaviour is been influenced by various psychological factors in the financial market. Factor analysis was utilized to identify and categorize the factors while also assessing validity. Additionally, Cronbach's Alpha was employed to evaluate the survey instrument's reliability. Thus, the findings from this study are that psychological factors, Accounting Information, Personal Attitude and Risk perception are the significant factors that influence investors' investment behaviour while demographic factors and financial literacy have no influence on investors' behaviour. Hence, investors should exercise caution and careful consideration when engaging in derivative market investments. Furthermore, market authorities and governmental bodies should take steps to provide assistance to investors both during the decision-making process and afterward.

Keywords: Investors behaviour, Derivatives market, decision making, psychological factors, financial literacy

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CHAPTER ONE
INTRODUCTION AND BACKGROUND

1.1 Introduction and Background to the Study

Investor behaviour is influenced by many factors, including financial literacy, accounting information, loss aversion bias, emotional factors, risk factors and other factors in the market that systematically influence individual investment behaviour. According to Appel (2006:123), investor behaviour encompasses the actions an investor takes when seeking, acquiring, evaluating, and disposing of goods, services, ideas, or experiences to meet their needs and desires. An individual investor's behaviour demonstrates their preferences for allocating financial resources among different investment options to maximize their surplus.

The investment behaviour of small investors is often influenced by emotional tendencies, deeply ingrained thought patterns, psychological biases, and various other factors that can impact their decision-making. Researchers across different countries (Sultana and Venkatapathy 2018, Kavitha, 2015) have examined investor behaviour and endeavoured to improve our comprehension of the reasons behind individuals' varied approaches to managing investments. An investor’s investment decision in any market tends to place significant reliance on their conduct shaped by the psychological principles of decision-making, as only these principles can elucidate the motivations behind individuals' decisions to buy or sell specific derivative investments. Consequently, gaining a deeper comprehension of behavioural finance mechanisms becomes crucial for financial planners, businesses, and governments. This understanding of how investors typically react to market fluctuations aids in crafting suitable asset allocation strategies.

In traditional finance theory (also known as conventional finance theory) the idea is that investors are knowledgeable and rational wealth maximises who act smartly in the financial market. Nonetheless, in practical terms, the degree of risk an investor is willing to assume varies and primarily hooks on their risk tolerance. It is therefore important to ascertain the main objectives are to examine the factors that impact the conduct of small investors in the derivatives market and to dig into psychological mechanisms such as perception, attitudes, learning, and motivation that shape an individual's investment choices. Behavioural finance is a discipline that scrutinizes investor behaviour, encompassing not just rational aspects but also delving into irrational psychological investment biases that are often disregarded in conventional finance. (Jain et al 2021, Amlan, 2016:3). On the one hand, behavioural finance illustrates how cognitive and emotional elements influence an investor's investment choices, particularly how they impact rationality in the decision-making process. (Kartin and Nahda

2021: 1232). On the other hand, it does not only describe the behaviour of investors and the stock market but also strives to understand why they behave in the market.

Besides, behavioural finance theories aim to comprehend the psychological biases exhibited by individuals in connection with financial markets. Within the realm of finance, this movement centers on comprehending the impact of human behaviour and investor psychology on choices pertaining to investments and the pricing of assets (Shiller, 2002:89). While various explanations and theories exist concerning behavioural finance, there exists a significant degree of concurrence among them. Jain, Walia, Kaur and Singh (2021: 1) further posits that behavioural finance investigates how individuals process and act upon information in order to make well-informed decisions as investors. This stance gains support from the assertions of Redawati and Rizani (2023: 2) propose that behavioural finance strives to understand, from a human perspective, the pivotal factors underpinning the domains of finance and investment.

For this study, Information was gathered through a combination of mixed methods involving both quantitative and qualitative methodologies, followed by factor analysis. Thus, the investors in the derivatives market form the study population for this study and a sampling technique based on non-probability was employed for sample selection. Research questionnaires and interviews were also used to collect data from Individual investors and market officials to understand their perceptions of the factors that influence investors' behaviour in the market.

From the findings of the study, an investment decision-making framework was developed to serve as a guide for both incoming and existing investors to minimise risks and maximise returns. By this the study aim at investigating the influence of behavioural factors on small investors in the derivatives market of the Johannesburg Stock Exchange.This framework aims to provide actionable insights for both novice and seasoned investors, enabling them to navigate market uncertainties effectively while striving to optimize returns and minimize risks.

1.2 Problem Statement

It is crucial to understand the factors that influences the investment decision of an existing and prospective investor to behave in a certain way when making an investment decision. Despite the need to grow investment and savings in South Africa, only a limited number of studies have investigated the causes behind the limited adoption of derivatives as an investment choice, such as (Hamman, Nel and Oberholzer 2021, Keller et al 2020 and Mongaleil and Baloyi 2019). However, it's worth noting that the majority of these studies have been carried

out in international settings, such as, United Arab Emirate (UAE), India, China and United States of America (USA). The investment environment in these contexts differs from South Africa, which possesses unique and even peculiar characteristics.

Existing studies on South African investors for example – Examining the impact of herding behaviour on the Johannesburg Securities Exchange 2018 and Derivatives in an emerging market in South African Focus (2018: 43) have all paid attention to only Herding behaviour and derivative market. None of these available studies has focused on the psychological behaviour of small investors in the derivatives market in South Africa as the study proposed and sought to investigate and explore the behaviour of small investors in the derivatives market. Majority of existing research has predominantly focused on institutional investors. Consequently, this study adopts an approach aimed at examining the factors that impact decision-making among small investors in the South African derivatives market.

Nonetheless, only a restricted number of studies have explored the factors that affect decision-making among individual investors, especially within Southern African nations, notably South Africa. Considering the limited research in the Southern African region, this study aims at contributing to comprehending the behavioural elements that impact investors' decision-making. This will inadvertently fill some of the gaps identified in the literature within the South African context.

1.3 Research Aim and Objective

1.3.1 Aim of the Study

The aim of this study is to investigate the influence of behavioural factors on small investors in the derivatives market of the Johannesburg Stock Exchange.

1.3.2 Objectives of the Research

The specific objectives of the research are to:

i. explore small investors and investigate the psychological factors influencing their investment decision-making using factor analysis.
ii. identify the behavioural and demographic factors that influence investors' decisions.
iii. determine the influence of financial literacy and accounting information on investment decisions.
iv. understand the influence of personal attitude and perception on individual investors' investment decision.

v. identify the most significant factors that could influence investment decisions in the derivatives market.
vi. develop a framework to serve as a possible guide to effectively manage and minimise risk and maximise returns.

1.4 Research Questions and Hypotheses.

1.4.1 Research Questions

The study was guided by the following research questions.

i. Do psychological factors influence investors' investment decision-making?
ii. Does behavioural factor and demographic factors influence investors' decision?
iii. It is proposed that financial literacy and accounting information influence investor investment decisions?
iv. It is proposed that investors' personal attitude and risk perception toward their investments influences their decision-making?

1.4.2 Research Hypotheses

H_1: Psychological factor influences investment decision-making.

H_2: Behavioural and demographic factors influence investment decision-making.

H_3: Financial literacy and accounting information influence investment decision--making.

H_4: Investors' attitude to risk perception influences investment decision-making.

1.5 Significance of the Study

Although the majority of these studies have focused on developed nations, with only a small number centered on developing countries. This particular study aimed to examine the behavioural and psychological factors that shape the decision-making of individual investors in the Johannesburg Stock Exchange in South Africa. By addressing the existing voids in Southern African nations and other emerging economies, this research will enrich the behavioural literature.

The study put an enthusiastic attempt to enhance the body of knowledge within the existing literature regarding the factors that affect investment decision-making among small investors in South Africa. The significance of this study to the investor is that it will help them to know how to guide their investment allocation and guarantee a better understanding of how to locate profit opportunities for investment. For the financial institution/market identification of the most

influencing factor will affect their future strategies and plan and help them to be able to suggest investments that are best for their investors.

1.5.1 Small Investor

The small investor is also known as individual investors. An individual investor can be characterized as someone who doesn't allocate all their income to immediate consumption expenses but instead invests a portion for future purposes, actively participating in market transactions on their own behalf (Temizel, Sarıkaya, and Bayram, 2010: 1-20). Another definition describes an individual investor as someone who conducts a limited number of transactions independently, striving to manage their funds with minimal or no professional assistance (Karan, 2004: 699). It becomes evident that individual investors typically invest in their own names and accounts, engage in relatively small-scale transactions, and are influenced by various factors in their investment decision-making (Elmas, 2010: 8).

The evolving investor profile, which exerts a growing influence on financial markets, is an increasingly important factor to reckon with (Saraç and Kahyaoğlu, 2011: 136). When individual investors are making investment choices, it becomes essential to analyze and assess the factors that impact their decisions. These investors are subject to the sway of numerous factors during their investment decision-making process.

1.6 Overview of the Research Method

1.6.1 Research Design

A mixed-method research approach was employed to gather data and identify the factors influencing investment decisions in the South African derivatives market. Mixed methods research, as described by Hayes, Bonner, and Douglas (2013: 12), involves collecting and analyzing both quantitative and qualitative data within a single study. This approach aims to capitalize on the strengths of both qualitative and quantitative methods while mitigating their respective weaknesses, ultimately leading to a deeper understanding of the research topic (Almalki, 2016: 294; Onwuegbuzie and Collins, 2007: 302). For this study, the qualitative research method will be utilized in one phase, while the quantitative research method will be applied in another phase. According to Yong and Pearce (2013: 92), factor analysis proves valuable in studies involving numerous variables, such as questionnaire items or a battery of tests, which can be condensed into a smaller set to uncover underlying concepts and simplify interpretations. It also aids in categorizing variables meaningfully. Qualitative data were

collected with qualitative components through interviews and quantitative data were collected using a questionnaire.

1.6.2 Factor Analysis Method

Factor analysis was utilized to pinpoint the primary determinants affecting the conduct of small investors in the South African derivatives markets. As outlined by Kline (1994: 13), factor analysis is a statistical tool extensively employed in psychology and the social sciences. Its purpose is to condense a multitude of variables into a more manageable set of factors. This method extracts the highest shared variance from all the variables and consolidates them into a single composite score. These scores can then serve as a comprehensive indicator for subsequent analyses.

1.6.3 Population of Interest

A derivative is traded under the umbrella of the JSE (Hassan 2013: 11). Other investment managers trade derivatives in South Africa under the umbrella of JSE, such as Prudential Investment Managers, Afrifocus Securities Limited, Sanlam Investments, etc. All these investment managers are trading under the umbrella of JSE, which the study has chosen as a case study. The population for the study were investors who invest in the derivatives market in the Johannesburg Stock Exchange market and the market officials. For the qualitative, the study targets participant of 25 investors for interviews while for the quantitative, the study targeted 500 participants (mainly, investors and market officials).

1.6.4 Sampling

A sampling method is a systematic procedure used to select individuals from a population in order to create a sample. A non-probability sampling approach was employed to capture units that are representative of the target population. The components within the population were selected and samples were selected from the JSE market in Johannesburg. The unit of analysis was market officials and investors, interviews were conducted, and the questionnaires were distributed to the investors and market officials. The participant produces data during the evaluation phase of the study. Identifying the most influencing factors will help to develop a framework for effective risk management to maximise investors' return. Participants who are investors in the markets were selected and a convenience sampling approach was used. From the institutions that traded under the umbrella of the JSE market, 500 individual investors and officials were specifically selected targeting one questionnaire each. The utilization of simple random sampling serves to guarantee that the sample is a fair

representation of the entire population, without any undue bias toward specific subgroups. Additionally, it helps in mitigating the influence of any potential biasing factors in the selection process.

1.6.5 Data Collection

A letter was written to the JSE financial and other institutions who traded under the JSE market providing an explanation for the study's objectives encouraging them to participate and also to encouraging most of their investors, inviting their involvement in the study and guaranteeing the protection of their privacy. The questionnaire that was created was employed to gather data from respondents, encompassing the measurement of all relevant variables. The interview questions were sent out electronically to the individual investor and the questionnaire was also sent electronically to all individual investors who invest in any of the institutions that traded under the JSE financial market, response was also collected electronically for analysis.

Data can originate from diverse sources, each serving different objectives. Matching the data type to both the data source and the design's demands is crucial. Uwe (2018: 231) identifies two primary data sources: primary and secondary. The collected data's nature should align with the chosen methodology. Primary data is exclusively collected by the researcher for the specific project. Conversely, secondary data encompass information collected previously, though not necessarily for the researcher's current investigation (Uwe, 2018: 232).

1.6.6 Qualitative and Quantitative Data Analysis

Analyzing the data derived from open-ended interview questions was based on the response sent back to the interview participant. The researcher holds a moral responsibility to the research community, necessitating a truthful depiction of the data analysis procedure (Du Plooy, 2009: 398). This encompasses presenting a thematic analysis and the understanding derived from the research data acquired directly from the primary source Quantitative data were analysed using SPSS. The type of statistics that was used is descriptive statistics (Leedy and Ormrod, 2005: 252), which includes tables and graphs, percentages, and bar charts. Statistical analyses were performed to characterize the central tendency and variability of each gathered variable, as well as to establish an empirical connection between these variables in order to draw conclusions that go beyond the raw data. Additionally, Cronbach's alpha coefficient was employed to evaluate and quantify the reliability of the items. Factor analysis techniques enable the data interpretation and making of statistical inferences.

1.6.7 Validity, Reliability and Trustworthiness.

Validity pertains to the degree to which a given measurement accurately captures what it intends to measure. This criterion is typically established through an evidence-gathering process, wherein the researcher endeavors to ascertain that the instrument achieves the highest possible accuracy in measuring its intended target. Validity is important as it measures dependent variables (DeVos et al., 2011:173). In order to establish its validity, the study underwent an evaluation process involving experts and practitioners, as suggested by DeVellis (1991:5). Consequently, the researcher made revisions to the initial draft by removing, adding, or rephrasing certain items that were included in the draft. This aided in ensuring the precision of the gathered data. To ensure validity, the study's outcomes can be applied to a broader population and various scenarios by ensuring that the conditions during the study accurately mirrored the circumstances and time frame of the results.

The interview result was presented to look for similarities of results among all the respondents that participated in the questionnaire. According to Roberts, Priest, and Micheal (2006: 43), Reliability pertains to the degree to which the outcomes of a study or measurement can be reproduced across diverse situations. Achieving reliability involves arranging brief, comprehensible, and straightforward instructions for the study and maintaining a questionnaire length that remains reasonable. The reliability of the measuring instrument helps to highlight distinctions between data collected for a study and data acquired for an alternate objective. Stated differently, data initially collected for a study should be employed to address research inquiries, which can help the applicability of the study at hand. The way to estimate reliability in a quantitative study is the consistency or stability of measurement. There is a need to ensure that questions are user-friendly and that respondents can answer the question as effortlessly as possible (Leedy and Ormrod, 2005:93, 190-192), which this study has taken into consideration. From a qualitative methodology point of view, an audit trail of all interview responses is maintained.

Trustworthiness

For exceptional evidence of the result reported in this study, it was necessary to maintain a high level of trustworthiness through the quantitative and qualitative methods. The following criteria ensure the validity of data were adhered to.

1. Credibility: This was maintained by checking the result in a way to allow participants of the study to review and approved the interpretation of the data they provided which they see in the form of a polished product.
2. Transferability: the study will allow transferability for the readers to apply the findings of the study in another similar setting.

3. Dependability: An audit trail will be formed for verification and confirmability of the data collected to minimise bias, maximise accuracy and report impartiality since inaccuracy and bias are unacceptable.
4. Confirmability: The study will be subjective where another researcher should be able to read the contents in the entirety of a given study and arrive at the same conclusion. To ensure trustworthiness through the quantitative method, the research settings must give room for the same conclusion repeatedly and the conclusion must be accurate. Finally, the result will be independently verified without any complications (Shenton, 2004: 63; Connelly, 2016: 435).

1.7 Study Limitations

The study was conducted among investors in the derivatives market of the JSE in Johannesburg, South Africa. Due to the pandemic, national lockdown and social distance, the physical interview did not take place because the data was collected during this period. However, a list of institutions' contacts who traded under the umbrella of JSE in Johannesburg was received from the JSE office through an email and a telephone call was made to those institutions to request their permission and consent to send an email to them concerning the study. An email was also sent to individual investors to seek their consent to participate in the study. A link to the questionnaire and interview questions were sent to those investors who consented to participate in the study.

1.8 Johannesburg Stock Exchange

Ranked as the 16th largest globally, the Johannesburg Securities Exchange (JSE) holds a dominant position among Africa's 22 stock exchanges. Its market capitalization reached R4,029 billion by the close of December 2003, a substantial increase from R1,160 billion recorded five years prior. The JSE can be found at 1 Exchange Square, 2 Gwen Lane, Sandton, Johannesburg, South Africa. It provides secure and efficient primary and secondary capital markets for a wide variety of securities, complemented by our post-trade and regulatory services. It serves as the preferred market for both local and international investors seeking access to South Africa's premier capital markets and the broader African continent.

History - In 2003, a different exchange, ALTX, was introduced to cater to small and medium-sized listings, and it was subsequently followed by the creation of Yield X, focusing on interest rate and currency instruments. In 2001, the JSE expanded its portfolio by acquiring the South African Futures Exchange (SAFEX), and in 2009, it further expanded by acquiring the Bond

Exchange of South Africa (BESA). As of today, the JSE provides five distinct financial markets, encompassing Equities, Bonds, Financial Derivatives, Commodity Derivatives, and Interest Rate Derivatives.

Brief Overview of the JSE

The core purpose of the JSE is to facilitate the infusion of primary capital, redirecting financial resources towards productive economic ventures. This initiative aids in fostering economic growth, employment opportunities, and the generation of wealth. Additionally, the JSE functions as an efficient platform for determining prices and managing price-related risks.

Privately owned and financially self-sustained, the JSE operates under the governance of a Board of Directors. Regulatory supervision is rooted in two Acts of Parliament: the Stock Exchanges Control Act, 1 of 1985 ("SECA"), which governs equities markets, and the Financial Markets Control Act, 55 of 1989 ("FMCA"), which oversees derivatives markets. This approach is in accordance with international standards, ensuring consistency and compliance. the JSE also assumes a regulatory role over its members, ensuring transparent market operations and safeguarding investor interests. Likewise, entities issuing securities must adhere to the JSE Listings Requirements, designed to ensure comprehensive disclosure of pertinent information for investors.

The JSE's multifaceted roles encompass overseeing applications for listing and maintaining compliance among listed companies. Monitoring modifications to existing listings and scrutinizing company disclosures are integral aspects of its responsibilities. Moreover, the JSE administers the Stock Exchange News Service (SENS), facilitating the dissemination of company news, including material that can influence prices. Demonstrating adaptability to global competition, the JSE has undertaken strategic restructuring, incorporating new technologies and outsourcing specific operational components.

1.8.1 The Key Challenges of the JSE

The global market consolidation posed challenges for emerging markets, straining their relevance. The aging JSE trading technology struggled to handle the increasing volume of daily transactions. In the late 1990s, numerous significant South African listed companies shifted their primary listings to London to attract international investors. This departure caused concern within the South African market and led to reduced trading on the JSE.

A pivotal shift occurred in November 1995, with alterations to the Stock Exchanges Control Act transforming stock trading in South Africa. Non-South Africans gained entry, and brokers could now trade stocks for their accounts instead of acting solely as agents for clients. New capital adequacy rules, modelled on EU standards, mandated the separation of clients' and brokers' funds. The traditional open outcry system yielded to the computer-driven Johannesburg equities trading (JET) screen-based system. Corporate membership admission prompted foreign banks to acquire local broking firms for broader financial services. The Stock Exchange News Service (SENS) launched in 1997, ensuring rapid, uniform dissemination of corporate news. In mid-1999, listed companies underwent simplified classification. An electronic settlement system (STRATE) replaced manual scrip settlement. The JSE became JSE Securities Exchange South Africa, and the alternative exchange ALTX aimed to entice black-owned businesses into the public sphere.

Accenture aided a strategic connection between the JSE and the London Stock Exchange (LSE) in 1999. JSE's trading and information systems transitioned to LSE's Sequence and LMIL systems. The FTSE/JSE Africa Index Series, aligned with the FTSE Global Classification, introduced in June 2002, made South African Indices internationally comparable. This partnership enhanced the JSE's profile among global investors, with trade details distributed by LSE to over 104,000 trading terminals worldwide. The JSE now boasts one of the world's most reliable train platforms, fortified by the involvement of international investors.

1.8.2 The Role of JSE

Listing on the JSE provides companies with the opportunity to secure capital, while investors can subsequently invest in these enlisted companies. The JSE serves a dual function: firstly, it facilitates the trading of shares, and secondly, it oversees the regulation of the shares listed and the investors engaging with the JSE.

1.8.3 How JSE Works

The JSE provides a platform for individuals and institutions globally to engage in the purchase or sale of any shares listed on the exchange. Their role encompasses ensuring listed shares adhere to the JSE Listings Requirements, which include aspects like disclosure and reporting, as well as guaranteeing that buying and selling transactions align with the JSE Rules.

While Nigeria claims the title of having the largest economy in Africa, and Egypt proudly boasts the continent's first stock exchange, established four years prior to the JSE in 1883, it is

undeniably South Africa that houses the largest stock exchange on the continent. With a market capitalization of approximately $1 trillion, as reported by the World Federation of Exchanges, the JSE's market cap is nearly 15 times greater than that of the NSE, solidifying the JSE's pivotal role in the South African economy. It's essential to clarify that the JSE does not manage the economy; rather, it facilitates trade in publicly listed companies. These listed firms, numbering approximately 400, possess independent management teams. While they must adhere to JSE's listing rules and the Companies Act, they operate autonomously. Listed companies respond to the economy as much as they influence it, and the JSE serves as their trading platform.

The value of a listed company is shaped by traders and investors who buy and sell shares, determining their value. The JSE facilitates these transactions without impacting prices or company values. Company values depend on fundamentals and the interplay of supply and demand. The JSE is regulated by the Financial Services Board (FSB), ensuring compliance with license conditions. The South African Reserve Bank (SARB) doesn't directly impact the JSE but focuses on maintaining price stability and balanced economic growth. Ownership of the JSE involves various institutions, each having a stake of 10% to 15%. While they influence JSE director appointments, they don't control listed companies or trade.

The JSE is at the economic core but lacks direct influence. It enables capital raising and trading. This regulated environment benefits growing economies and individuals seeking investment opportunities. Various institutions, both parliamentary (FSB and SARB) and regulatory (JSE and investment houses), collaboratively contribute to a stable economy, capital circulation, investing, and wealth creation for individuals, the country, and the continent.

1.8.4 JSE Regulatory Framework

1.8.4.1 Market Regulation

The regulatory framework that governs the JSE's function as a market regulator and the compliance obligations of authorized JSE members includes the Financial Markets Act, 2012, along with the JSE Rules and Directives, in addition to the Financial Intelligence Centre Act, 2001. The regulatory functions carried out by the JSE Market Regulation division involve the surveillance of trading activities across various JSE markets to identify possible instances of market abuse, as well as ensuring that JSE members comply with their regulatory obligations. Market abuse includes actions such as insider trading, prohibited trading practices like market

manipulation, and the dissemination of false, misleading, or deceptive statements, all prohibited under the Financial Markets Act.

The JSE Market Regulation division employs electronic surveillance systems to scrutinize and assess trading in JSE-listed securities for signs of insider trading and market manipulation. The Financial Sector Conduct Authority (FSCA) investigates potential market abuse and enacts enforcement measures as necessary. Cases indicating possible insider trading and market manipulation, which are identified by the JSE Market Regulation division for further investigation, are referred to the FSCA. The FSCA regularly provides updates on its investigations into market abuse, including those cases referred by the JSE Market Regulation division. You can access these updates on the FSCA website at the following link: https://www.fsca.co.za/Pages/Media-Releases.aspx. The JSE Market Regulation division has referred the following quantity of potential market abuse cases to the FSCA:

1.8.5 Impact of Covid-19 Pandemic For JSE

The current period is among the most significant global challenges since World War II, and people are reacting with the same sense of panic seen in past crises. By March 31, 2020, the FTSE/JSE All Share Index had dropped by 24.8% since the year's beginning. During this time, the average stock in the index had declined by 34.0%, with only 6.4% of stocks showing positive returns, and a significant 39.1% experiencing declines exceeding 40%. This constitutes a substantial market crash, most of which occurred within just one month. Predicting the precise timing and full extent of this crisis remains exceptionally challenging. However, some known factors and long-term opportunities are being considered.

The COVID-19 pandemic will result in relative winners and losers. While a 30% drop in a company's share price theoretically suggests a loss of around six years' worth of cash flows (on a discounted cash flow basis and based on certain assumptions), it does not mean every company will endure this loss. Expectations are that high-quality companies with robust balance sheets, competitive advantages, and effective management will rebound successfully. These companies are currently trading at significant discounts compared to their intrinsic value. Conversely, businesses with high operating costs and substantial debt will face severe pressure, and some may face bankruptcy. It is crucial to exercise caution and avoid investing in highly leveraged companies lacking sufficient liquidity to weather this challenging economic climate.

1.9 Outline of the Thesis Chapters

This study comprises seven chapters. The first chapter presents the primary objectives, questions, and the study's significance. The literature review spans two chapters, while the methodology is addressed in a single chapter, the presentation of data analysis and interpretation in one chapter, the discussion and conclusion in one chapter, and the conclusions and framework presentation and recommendations are covered in the final chapter. A more detailed presentation of the thesis outline is provided below.

Chapter 1: Introduction

This chapter serves as an introduction to the study, concentrating on the study's context, the issue at hand, and the research approach employed. It encompasses the study's goals and objectives, outlines its limitations, and highlights its significance. It also presents a brief history of the Johannesburg Stock Exchange Market, highlights its functions, its role, market regulation and how the market works as well as the conclusion of the chapter.

Chapter 2: Overview of Conceptual and Empirical Literature Review

This chapter presents an overview of the relevant literature review on factors influencing investor behaviour that provides the base to identify the gap and design the research framework, it gives a detailed review of small investor behaviour followed by an empirical review of behavioural finance. It also presents the empirical review of factors influencing investor behaviour based on the objectives of the study, also a review of the South African derivative market and derivative trading was presented and finalised with a summary and conclusion of the chapters.

Chapter 3: Review of Various Financial Theory Related to the Study and Financial Market

The chapter explores and reviews various financial theories related to the study and financial market, it reviews traditional and behavioural finance theories, and it presents theoretical review and foundation that the study conceptual framework is base. It introduces the main theory used in the study highlight the research hypotheses, and also the summary of the chapter.

Chapter 4: Research Methodology

In this chapter, an extensive explanation of the employed methodology is presented. It elucidates the research design, which encompasses qualitative research methods, sampling techniques, and data analysis, including factor analysis. It rationalizes the selection of respondents, discusses data collection procedures, outlines strategies to bolster the reliability and credibility of the empirical research, and concludes with a chapter conclusion.

Chapter 5: Analysis and Interpretation

This chapter provides the analysis and interpretation of data collected for the study.

Chapter 6: Discussion of Findings and Results

In this chapter, the findings are discussed with regard to the research objectives and the fundamental factors that impact investor behaviour in the derivative market. It also presents the framework developed from the literature review and discussion of findings.

Chapter 7: Conclusions and Recommendations

This concluding chapter summarizes the study's conclusions and offers recommendations. It puts forth several suggestions relating to the study's findings vis-à-vis the research problem, objectives, and inquiries. Additionally, it provides recommendations derived from the findings concerning the various factors that influence investor behaviour in the derivative market. The chapter also outlines a set of recommendations for further research, particularly concerning the investment framework for both new and current individual investors.

1.10 Chapter Summary

Hence, understanding the impact of psychological, emotional, and behavioural aspects on financial decision-making holds significance. Moreover, comprehending the behavioural elements that shape investor choices within South Africa becomes crucial as the country plans to integrate its financial markets in the near future. This study not only addresses the gap in behavioural finance literature in emerging economies, particularly South Africa, where such research is scarce, but also bears potential policy implications.

This chapter has offered an initial overview of the research, detailing its objectives and the five primary study goals. The following chapter will delve into an extensive literature review.

CHAPTER TWO

CONCEPTUAL AND EMPIRICAL LITERATURE REVIEW

2.1 Introduction

This chapter extends the groundwork established previously by delving into an extensive literature review focused on the factors influencing individual investors' behaviour within the derivative market, a pivotal aspect of this study. It begins with an analysis of small investor behaviour and progresses to an empirical review of behavioural finance, categorizing factors into internal (psychological and demographic) and external (social, cultural, political, and ethical) considerations. Additionally, it comprehensively examines portfolio diversification, and investors' decision-making processes, and provides a detailed overview of the South African derivatives market. Emphasis is placed on identifying research gaps to contribute to behavioural finance literature, particularly within emerging economies like South Africa. Finally, the chapter concludes with a summary, preparing the groundwork for the ensuing empirical investigation.

2.2 Small Investor Behaviour

A small investor is also known as a retail investor or an individual who invests in small quantities of stocks or bonds or any form of financial tool. Small investor deals in securities, but in small quantities for their personal account rather than for the entire organisation. However, in recent years, the increased accessibility of online trading and improved availability of financial information has led to a rise in the number of small and retail investors. Investors' behaviour is based on their rational or irrational attitude/emotion towards decision-making in the process of their investment. Investors' behaviour cannot be predictable because it is influenced by various factors. In the contemporary competitive financial landscape, having a comprehensive grasp of investor behaviour is a crucial component for achieving success in financial markets. Various scholars have made efforts to define consumer behaviour. According to Sehgal and Mittal (2019: 4), as well as Solomon, Russell-Bennett, and Previte (2013: 3), define consumer behaviour as the study of individuals and the strategies they employ to choose and oversee products and services that satisfy their needs and influence their overall experiences.

Consumer behaviour defines how consumers decide what to buy and what not to buy. Understanding the underlying factors leading to certain investors' behaviour responses will therefore help the financial market to make better managerial decisions and to provide the

right product or services to their investors (East, Wright, and Vanhuele, 2013: 9). A comprehensive grip of investor conduct will additionally assist the financial market in anticipating future purchasing patterns among investors and developing suitable marketing strategies to foster enduring investor relationships. In the derivative market, consumers are investors, and examining investor behaviour holds significant importance for financial institutions, enabling them to formulate effective strategies, tailor-fitting financial products, and even introduce novel offerings that align with investors' requirements. In the pursuit of understanding investor behaviour, particularly their irrational tendencies, scholars have predominantly embraced the principles and frameworks of behavioural finance (Rizvi and Fatima, 2014: 145).

2.3 Behavioural Finance

In recent years, the field of behavioural finance has seen significant growth, offering proof that investors' financial choices are influenced by both **internal** and **external** behavioural factors. Lodhi (2014: 70) attests that accounting information, financial literacy, and risk-taking are positively correlated which shows that the financial literacy of a person increases his or her risk-taking capabilities. However, this study suggests that investment decisions are influenced by numerous factors, including market quality attributes and individual risk profiles, in addition to accounting information. This implies that investment behaviour involves analyses of decision-making processes and the factors that impact an investor's conduct. Some researchers (Syed and Pardhasaradhi, 2012: 56; Tripathy and Patjoshi, 2020: 5570; Kavith 2015 etc.) have conducted studies in this area. For instance, Syed and Pardhasaradhi (2012: 56) analysed factors influencing individual investors when choosing stocks for investment.

They found that wealth maximisation, risk minimisation, financial expectation, accounting information, government, media, and expert recommendations, each of these factors influence the decision-making behaviour of investors. Kavitha (2015: 3359) carried out a study on 125 sample respondents, the study demonstrates a noteworthy correlation between investors' attitudes and their involvement in the stock market, suggesting that the implementation of strategies aimed at fostering more positive attitudes could facilitate investor participation in stock investments. The study also concludes that a substantial connection exists between investors' perception of stock market regulations and their inclination to engage in the National Stock Exchange. To attract more investors, it is recommended that efforts should be focused on enhancing regulatory measures and increasing awareness. According to Massol and Mollines (2015: 16, Dassani and Sridevi 2021), investors might opt for a similar course of action, such as divesting from a depreciated stock to sidestep a poor investment decision and

circumvent the necessity of recording a loss. Their research revealed that this approach allows investors to justify or give logic to their choices.

2.4 Factors Influencing Investors' Decisions

The process of human decision-making is intricate and subject to a range of influences, shaping the diverse courses of action leading to varied outcomes. The act of making choices can be perceived as purposeful decisions influenced by factors unique to specific circumstances (Yu, Nickens, Liu, and Vincenzi, 2023: 210), ultimately resulting in a specific selection. This process involves an interplay between a presented problem seeking resolution and an individual tasked with solving it within a distinct environment (Rebellow and Suri, 2019: 311). It's a nuanced skill to address intricate scenarios that extend beyond personal capacities, influenced by multiple factors. Investors exhibit variability across all aspects due to factors like demographics, socioeconomic backgrounds, education, gender, age, and race.

Consequently, achieving uniformity in decision-making becomes nearly unattainable due to the differing significance of these factors. Given the intricacies of decision-making, research endeavours have aimed to empirically pinpoint the factors that apply the most significant influence on investors' decisions. The outcomes of these empirical studies have been inconclusive, a topic explored in greater detail in Chapter Three. In general, the determinants shaping investors' decision-making can be categorized as internal or external factors. Internal factors encompass psychological (cognitive and emotional) and demographic elements, whereas external factors encompass environmental components, including political, economic, social, cultural, and ethical factors. Naturally, investors' decision-making is influenced by a multitude of factors, and the primary ones under examination in this research are outlined below. Given the study's mixed-method approach, it delves into both internal and external factors.

2.5 Internal Factor

Investor decision-making is influenced by internal factors, encompassing psychological biases and specific demographic characteristics. These psychological factors can manifest as either cognitive or emotional elements. The subsequent discussion will focus primarily on these internal factors, as they have been a central theme in the behavioural finance literature.

2.5.1 Psychological Factors

Psychology examines the functioning of the human mind and originally pertains to the examination of mental processes. Within this field, psychologists explore human learning, cognition, communication, emotional experiences, and the processing of information for decision-making, all of which form foundational principles for individual behaviour. These actions collectively impact investment behaviours, where decisions arise from intricate interplays between emotions and cognitive processes, irrespective of their correctness. Analyzing psychology's role in the stock market seeks to uncover insights into how psychological factors influence stock prices and market dynamics (Zhou, 2014: 5).

It has been determined that psychological factors influence the financial decision-making of investors. (Van der Heijden, Veld, and Heres, 2022: 407). In general, psychological biases tend to shape people's behaviour. (Cheema, Man and Szulczyk, 2020: 230). As reported by Adil Singh and Ansari (2022: 25) Numerous psychological biases shape investor behaviour and decisions. These biases, like overconfidence, sensation-seeking, herding, anchoring, and heuristic use, have been extensively studied worldwide.

Clement (2012: 2) suggests that investors strive for rational decisions in their stock market interactions. However, limited cognitive capacity hinders optimal data analysis. Traditional finance theory proposes objective risk-return evaluation, but psychological factors in risk perception impact investment choices. In the last decade, mounting evidence confirms psychology's sway on financial decisions (Lisitsa, 2020: 10). Psychologists highlight unavoidable emotional influences on investments (Riaz, Ahmed, and Ali, 2021: 55). Cognitive psychology enriches our grasp of human decision-making (Fatima, 2019: 45). Paredes, Del Olmo, Santos, Gandarillas, and Briñol (2019: 30) contend that psychological factors in finance aren't necessarily irrational; they mirror information processing and subsequent actions. Rastogi (2015: 2) firmly advocates for the inclusion of behavioural aspects in investors' decision-making processes. The study highlights that behavioural finance can provide answers to a multitude of questions regarding financial investments that are inadequately addressed by the conventional financial theory.

Conventional finance theories highlight concepts like Modern Portfolio Theory and Efficient Market Hypothesis. The evolution of these theories into behavioural finance centres on understanding cognitive and emotional components that shape individual decision-making. In this study, overconfidence, cognitive dissonance, regret theory, and prospect theory were employed. Their impact was assessed among investors in Kenya (Nairobi Stock Exchange), who exhibit both rational and irrational behaviour due to diverse cognitive and emotional drivers (Aigbovo and Ilaboya, 2019: 73).

Islamoglu, Ayvali, and Apan (2015: 531) assert that despite rational intentions, personal investors are vulnerable to the influence of behavioural and psychological factors in their investment preferences. This indicates that decisions by investors aren't solely based on rational factors but are substantially swayed by psychological ones. Consequently, Psychological factors carry substantial influence over the investor decision-making process, and these psychological factors can have a notable impact on their attitudes and behaviour. Individuals' attitude towards investment is influenced by rumours, intuition, herd behaviour among investors and media coverage (Singh and Soni, 2022: 22). Individuals tend to adopt a more optimistic outlook on their judgments when they are in a positive mood, whereas their judgments tend to become more pessimistic when they are not in a good mood.

2.5.1.1. Overconfidence

Overconfidence pertains to the inclination to overrate or overestimate the likelihood of certain events occurring. This is when investors believe they have greater knowledge than their peers (Massol and Mollines, 2015: 15). Overconfidence bias refers to an excessive belief in the accuracy of your predictions, leading to an underestimation of the range of potential outcomes. (Shiller, 2015: 16). Research indicates that investors are vulnerable to the overconfidence barrier, with individuals rating themselves as being above average in their ability. They tend to place excessive trust in the precision of their judgments. Even as they gather more information about a situation, the accuracy of their judgment may not necessarily improve, yet their confidence grows, often associating quantity with quality. Numerous investors hold the belief that they can consistently predict the market's timing (Rahim, Shah, Jan, and Aamir, 2020: 979). However, there is a substantial body of evidence that contradicts this notion. According to Daniel and Hirshleifer (2015: 83), investors tend to believe that they can extract greater benefits from the market by incorporating their emotions.

Overconfidence existence has been studied by some researchers including (Ton and Dao, 2014; Parveen, Satti, Subhan, Riaz, Baber and Bashir, 2021; Daniel and Hirshleifer, 2015). Rahman and Gan (2020: 15) conducted literature about the behaviour of Malaysian people and their influence on the process of making investment decisions. To corroborate this theory, their research reveals that Chinese investors experience a higher degree of overconfidence bias and disposition effect compared to investors from the United States. Nevertheless, overconfidence seems to play a pivotal role in driving the substantial trading activity witnessed in speculative markets. Absent this overconfidence, one might assume that there would be minimal trading in financial markets. Overconfidence in one's judgments can occasionally lead

individuals to believe they can predict market movements, despite their general intellectual acknowledgement that stock prices are not predictable.

Overconfidence leads investors to adopt an excessively positive outlook, often neglecting the input of others (D'Acunto, 2015: 99; Pikulina, Renneboog, and Tobler, 2017:180; Ainia and Lutfi, 2019:408; Bouteska, Harasheh, and Abedin, 2023: 200). This skewed confidence can arise from an illusion of control, coupled with an inflated sense of optimism about potential outcomes (Nguyen, Dang, Pham, and Do, 2020: 98). Psychological research has extensively noted the diverse ways overconfidence impacts individual behaviour. Lakshmi and Minimol (2016: 75) highlighted that "individuals often exhibit overconfidence in their predictions," while Adil, Singh, and Ansari (2022: 24) observed investors overlooking inaccuracies in their personal information and failing to adequately consider market indicators.

Investors tend to exhibit heightened overconfidence when their judgments repeatedly prove accurate (Inaishi, Toya, Zhai, and Kita, 2010: 663). Similarly, Chiu, Ho, and Tsai (2022: 140) identified the existence of overconfidence among investors, particularly in stock selection and timing entry or exit points. Other studies like those by Yulianis and Sulistyowati (2021: 80) and Smii, Kouki, and Soltani (2021: 48) underscore that many investors display overconfidence, manifesting in their financial market behaviour.

With regard to decision-makers showcasing overconfidence, these investors tend to treat their assumptions as factual and may overestimate the level of control they have over strategy outcomes (Hassan, Khalid, and Habib, 2014; Kumar and Prince, 2023). Armansyah (2021: 46) contends that overconfidence prompts decision-makers to excessively prioritize their assessment of knowledge and information accuracy while disregarding publicly available information.

2.5.1.2 Representativeness Biases

Representativeness bias emerges when individuals attempt to find patterns within sequences of random events. This bias proposes that when people assess the likelihood of uncertain occurrences, they tend to predict outcomes by searching for the closest match to past patterns in terms of essential attributes (Irshad, S., Badshah, and Hakam, 2016; Clegg et al., 2015; Ahmed and Safdar, 2017). In simpler terms, opinions about situations are influenced by how they align with previous circumstances an individual has encountered in life. According to Lee (2022), representativeness bias within cognitive and emotional psychology involves a predisposition to predict anticipated outcomes based on the distribution of impressions. It

involves a subjective judgment of how closely an event "exhibits fundamental characteristics of its parent population" or "captures prominent attributes of the process from which it originates." (Mahadevi and Asandimitra, 2021: 780).

Psychological factors, encompass both cognitive and emotional aspects employed by individuals to simplify problems and make decisions in uncertain scenarios (Brav and Heaton, 2002: 577). These factors represent the principles individuals follow in problem-solving under high-risk conditions. As explained by Myers (1989: 286), each person possesses a repertoire of these strategies derived from acquired knowledge, learned rules, or past successful hypotheses. Over time, these strategies become "rules of thumb," widely applicable in various decision-making situations. Thus, cognitive and emotional psychological factors act as broad principles that simplify decision-making in complex situations (Ritter, 2003: 61). Shah and Oppenheimer (2008: 56) confirm that these factors expedite decision-making, stating that "These rules of thumb (or frameworks) can be used to simplify the assessment of probabilities and the prediction of values into judgmental operations" (Tversky and Kahneman, 1974: 1124).

As stated by Bartkowiak, Potrawiak, and Pavlenko, (2018: 155) psychological factors, both cognitive and emotional, essentially function as "mental shortcuts or strategies drawn from our experiences, which help us reach our destination quickly but can sometimes lead us astray." Singh (2012: 116) contends that while these psychological factors simplify decision-making, they can also introduce biases, particularly when circumstances change, potentially leading to suboptimal investment choices. Nonetheless, Stanovich and West (2008: 673) contend that psychological factors that impact decision-making are relevant to critical cognitive processes. Reimers, Donkin, and Pelley, (2018: 12) suggests that a significant manifestation of representativeness bias is that individuals tend to perceive patterns in genuinely random sequences. This inclination results in stereotyping and lends an organized appearance to the world that might not accurately reflect reality.

Representative bias prevails in financial markets, investors or individuals often identify patterns in data and project them into the future (Xia, 2023: 187). People often assess situations at face value rather than considering fundamental probabilities (Juanchich, Sirota, and Teigen, 2023: 2631). This prompts investors to purchase stocks embodying desirable qualities (Shefrin, 2002: 112), occasionally, there's a tendency to mistake a strong company for a sound investment (Zhu, Sun, Yung, & Chen, 2020: 1000859). Investors often overlook

pertinent information in their decision-making process, relying on stereotypes to spot patterns that might not truly exist (Brabazon, 2000: 3).

2.5.1.3 Anchoring

The inclination to exhibit bias toward the initial value when making quantitative judgments is known as the anchoring bias (Raut and Das, 2015:48). This trait pertains to the process of formulating estimates regarding the likelihood of uncertain events or predicting outcomes by beginning with a preliminary value and adjusting it until it aligns with a final decision (Beblo, Beninger, and Markowsky, 2017: 18). Agarwal and Panwar (2014: 32) contended that this initial value or starting point can be established through the creation of a problem or an incomplete calculation. Due to the influence of anchoring, individuals tend to favor relative thinking over absolute thinking. The concept of the anchoring effect was initially introduced by Tversky and Kahneman in (2015: 43) and describes the mental shortcuts people use when making judgments in uncertain situations. Within financial markets, this characteristic elucidates how investors often consider the original purchase price when evaluating or selling stocks (Ahmed and Noreen, 2021: 38). This tendency prompts investors to set a price range for shares based on past trends, potentially leading to hesitation in response to unforeseen events.

Ricciardi and Simon (2001: 42) explain that anchoring involves adopting questionable ideas as reference points for future strategies. In essence, people seek an anchor to rely on. This phenomenon elucidates investors' behaviour of adhering to specific industries or sectors, even as companies within those sectors begin to exhibit negative returns (Ahmed and Noreen, 2021: 18). Parikh (2009: 52) illustrates this concept through a top-down approach, highlighting that investors keen on biotechnology investments might overlook underperforming companies in their portfolios. Despite changing circumstances, these investors might persist with all their biotechnology holdings, assuming the sector will inevitably yield positive returns. A reminiscent instance of this trait is the Information Technology (IT) boom of the 1990s, during which many believed the IT sector to be immune to downturns, causing them to retain unpopular stocks. This led to significant losses in previously accrued price gains (Parikh, 2009: 18).

Anchoring fundamentally represents a cognitive error causing investors to misinterpret new, promising data (Bathia and Bredin, 2016: 11). It signifies investors' difficulty in fully incorporating the implications of fresh information. Instead of conducting comprehensive analyses due to information overload, they act based on isolated data points that should have

minimal relevance to their decisions, often overlooking critical facts (Chandra and Kumar, 2012: 45). Chandra (2008: 20) summarized that investors' anchoring points might be purchase prices, historical prices, or historical perceptions. Investors anchoring on purchase prices become indecisive by fixating on a stock's initial purchase cost. Those anchoring on historical prices tend to avoid stocks that previously had lower prices and may hesitate to sell assets that previously held higher values. Anchoring on historical perception relates to prior viewpoints about a business (Chandra, 2008: 19). Upon an extensive examination of pertinent literature, the authors have pinpointed that the anchoring and adjustment bias hampers rational decision-making. Investors exhibiting this bias often make misguided investment choices and judgmental errors that could result in missed opportunities for gains.

2.5.1.4 Cognitive Dissonance

The term "cognitive" pertains to the acquisition of knowledge through mental processes, whereas "dissonance" signifies the degree of discomfort or dissatisfaction that emerges when there is a conflict between two divergent thoughts or beliefs. Therefore, Cognitive dissonance refers to an inner conflict that arises when individuals learn that the foundations on which they have been functioning have been contradicted (Liu and Keng, 2014: 23). In simpler terms when confronted with evidence challenging the accuracy or correctness of their beliefs, individuals undergo a state of mental tension. To alleviate this tension, they engage in a sequence of cognitive processes. Thus, cognitive dissonance refers to the degree that characterizes the discomforting outcome following conflicting beliefs or attitudes. The concept of cognitive dissonance theory posits that conflicting thoughts act as a motivating force, compelling the mind to acquire or formulate fresh ideas or beliefs, or to modify existing beliefs, with the intention of diminishing the level of dissonance (discord) in one's cognitive state (Pradhan, Chakraborty, Choudhary and Nandi, 2020: 50).

Cognition encompasses attitudes, emotions, beliefs, or values, whereas cognitive dissonance represents a state of incongruity that arises when conflicting cognitions intersect (Pompian, 2006: 148). This encapsulates the responses of those who struggle to reconcile these perspectives, leading to internal turmoil. Ceren and Cenk Akkaya (2013: 18) assert that individuals tend to experience unease when their viewpoints are challenged. They then either work to alleviate this internal discord by reevaluating their previous beliefs or seek to defend their positions. This theory, as highlighted by Pradhan, Chakraborty, Choudhary, and Nandi (2020: 111), holds relevance for financial professionals aiming to harmonize conflicting patterns. A realization of error often triggers a mental upheaval. This typically occurs when fresh information contradicts prevailing beliefs, confronting investors.

Whenever opposing cognitions clash, investors confront a mental state of discomfort and are presented with the quandary of adhering to ingrained values or embracing new information (Pompian, 2012: 214). In essence, when investors are compelled to choose, an internal struggle ensues due to the potential drawbacks of one option and the possible advantages of the other (Pradhan et al., 2020: 81). In the face of this dilemma, investors might occasionally cling to their investments despite contradictory indicators, rooted in a belief that a certain condition remains constant. Consequently, investors might continue to hold depreciating securities even during unfavorable market conditions.

Avoiding cognitive dissonance can exert two primary effects on decision-making: 1) an inability to arrive at a definitive conclusion and 2) selective interpretation of new information, potentially hampering the effectiveness of investment-related judgments. These effects are termed 'selective decision-making' and 'selective perception,' respectively (Pradhan et al., 2020: 32). Selective decision-making could manifest as investors persisting with losses and succumbing to herding behaviour, where opposing viewpoints are challenging to endorse when other investors seem to be profiting. In such scenarios, investors strive to rationalize their choices to evade admitting errors. The desire to uphold self-esteem may hinder learning from mistakes (Agarwal and Panwar, 2014: 19). Consequently, the consequences of cognitive dissonance can impede rational behaviour among investors. Pompian (2012: 214) contends that investors often attribute losses to bad luck rather than flawed judgment, attempting to alleviate the discomfort arising from the clash between conflicting endeavors and the discomfort of confronting past errors.

According to Olsen (2008: 66), when investors resist altering their perspectives on stock performance, it results in unfavourable outcomes and intensifies their discomfort. Consequently, they tend to become overconfident and, in their quest to validate their viewpoints, fall prey to confirmation bias, as noted by Kanojia, Singh, and Goswami (2018: 87). This substantiates that Indian investors contend with cognitive dissonance, pushing them towards irrational decisions. The study also unveils a direct correlation between age and cognitive dissonance. Research conducted by Nagina and Taqadus (2021: 546) concludes that cognitive dissonance bias negatively impacts investors' decisions, implying that those with a high degree of cognitive dissonance bias tend to exhibit irrationality in their choices. These findings align with the theoretical framework proposed by Fatima (2019: 60) for cognitive dissonance bias and are corroborated by Kanoji et al. (2018: 57), who affirm the existence of cognitive dissonance among investors, which leads to irrational decision-making.

Cognitive biases primarily arise from flawed reasoning and can be reduced through enhanced knowledge, information, and guidance. Consequently, cognitive errors can be substantially reduced, if not completely eliminated, in the investment decision-making process (Bankole, 2019: 18). As a result of cognitive dissonance, individuals may experience various emotions, including apprehension, remorse, anger, annoyance, anxiety, stress, and other psychosomatic conditions (Fontanari et al., 2012: 26).

Furthermore, it was revealed that investors encountering losses often adopt a selective perspective, focusing on perceptions that align with their initial investment beliefs while disregarding data that contradicts them. Some individuals persisted with high-risk investments in a bid to recover past losses, aiming to salvage their reputation. Pertinently to this study, recognizing, identifying, and mitigating the behavioural bias linked to cognitive dissonance constitute goals that, if effectively pursued, could offer valuable assistance to many individual investors in Southern African nations, given their distinctive cultural attributes. Nurturing such comprehension adds an additional impetus to the execution of this research. This review holds significance because the influence of this theory continues to be evident in contemporary financial decision-making.

2.5.1.5 Herding

Herding refers to investors' tendency to mimic the actions of others, resulting in a collective behavioural pattern driven by social interactions (Galariotis, Rong, and Spyrou, 2015: 595). This influential behaviour often leads investors to follow a group's actions, disregarding their own intuition and confidence. This inclination stems from the human desire for acceptance and recognition within society, driving individuals to conform rather than stand alone. Herding is observed in both individual and institutional investors (Galariotis, Rong, and Spyrou, 2015: 595), and it can lead to market overreactions, impacting stock pricing accuracy (Shiller, 2015: 6; Liu, Han, and Chu, 2023: 27). Many investors refrain from responding to new information and instead base their decisions on the trading activities of perceived well-informed investors. As a result, when a new investor enters the market, they often follow prevailing trends without conducting their own analysis, assuming that a large number of participants in a particular direction must indicate profitability (Sharma 2014: 12).

Chen, He, Liang and Su (2020: 4) the inclination toward herding behaviour is often attributed to a lack of information or familiarity with the situation, leading investors to follow past actions taken in similar circumstances. Investors who lack sufficient information may assume that those they are following possess better decision-making capabilities when it comes to

choosing the best investment option. Herding not only impacts investor returns but can also lead to market inefficiencies (Arisanti and Oktavendi, 2020: 52). Studies conducted by both Balcilar and Demirer (2015:13) and Shams and Passand (2015: 2) suggest that herding behaviour is prevalent in stock markets with highly volatile stocks. This herd behaviour has been observed in various stock markets worldwide, including both advanced and Asian stock markets (Chiang and Zheng 2010: 1913). Furthermore, Choi and Skiba (2015: 248) have identified herd behaviour in 41 stock markets across the globe.

Numerous studies have recorded instances of herding behaviour, as exemplified by, Kin and Nofsinger (2005: 46) and Frey, Herbst, and Walter (2014). Eargly and Cardi (1981: 4) made the discovery that herding behaviour was more prevalent among females compared to males. Nevertheless, contrary findings have arisen in other research, challenging the presence of herd behaviour within financial markets. Notably, the impact of word-of-mouth has been recognized as an influencing factor on individual investors' financial decisions (Chang and Lin, 2015: 390), while technological advancements have significantly accelerated data dissemination and productivity (Johnson, 2001: 334). Conversely, Menkhoff et al. (2006: 86) reported that herding tendencies tend to diminish with increased experience.

2.5.1.6 Regret Aversion

Inherent to human nature, individuals naturally seek contentment with their decisions and aim to distance themselves from unfavorable outcomes, striving to achieve personal satisfaction through successful decision-making (Prates, da Costa Junior, and Dorow, 2014: 38). Bitterness arises as a mental distress upon acknowledging one's poor judgment (Sina, 2014: 48). The inclination to avoid regret emerges as a response to evading the discomfort associated with regretting a poorly chosen course of action. In the words of Baker and Nofsinger (2010: 322), it is "the feeling of regret that arises following a poor decision or an inferior choice." In essence, it signifies an individual's aversion to embracing losses and instead seeking positive emotional gratification. This sense of regret extends beyond the anguish caused by a financial loss and encompasses the remorse of feeling accountable for the choice that resulted in the loss itself (Sudhir, 2012: 78). This regret prompts individuals to question past actions and breeds uncertainty in their viewpoints (Baker and Nofsinger, 2010: 322).

Investors who are averse to regret endeavor to evade the distress stemming from errors resulting from their actions or inactions (Blanchett 2023: 144). These mistakes often arise from inadequately well-informed decisions that overlooked the genuine potential within a

circumstance. (Blanchett, 2023: 144). The avoidance of regret influences investors' judgments, often diverting them from decisive actions due to the fear of making incorrect judgments.

The repercussion of this cognitive phenomenon is that investors may persist with losing positions for extended periods to avoid conceding mistakes and facing losses (Ady, 2018: 86). The desire to evade remorse for actions can impact new judgments, as investors tend to avoid areas with historical underperformance due to the apprehension of potential future disappointment that such sectors might entail (Albaity and Rahman, 2012: 504). Ady (2018: 89) suggests that it's the fear of making a 'wrong move,' or a mistake of commission, that induces timidity in shareholders, leading them to emotionally and possibly irrationally favour investments that seem stable and dependable. Consequently, the avoidance of regret can trigger herd behaviour among investors, as they gravitate towards well-regarded companies that appear to offer insulation against future letdowns (Sudhir, 2012: 78). For instance, aligning with a perceived mass consensus can mitigate the likelihood of future regret since losses incurred within a consensus affect numerous investors, thus reducing the individual impact of the loss.

Studies have demonstrated the influence of regret aversion on investors' financial decision-making. While regret aversion has certain negative ramifications, it's essential to recognize its potential positive effects. Notably, investors become more conservative in their portfolio choices due to the bias of regret aversion. In essence, investors adopt a higher degree of risk aversion to evade regret over poor investments (Albaity and Rahman, 2012: 504). Additionally, the anticipation of regret aversion could motivate investors to sell unprofitable securities before further losses materialize, thereby curbing subsequent financial setbacks (Pompian, 2012: 215).

2.5.1.7 Greed and Fear

The irrationality of investors' conduct can also be ascribed to emotional states such as greed and fear (Limanjaya, Murhadi, and Ernawati, 2014: 68). For instance, when market conditions deteriorate and investors experience panic, the amygdala (a brain structure associated with both fear responses and pleasure) is likely involved (Joo and Durri, 2015: 79). Amidst the spectrum of emotions investors encounter, it's the intrinsic sentiments of pure greed and fear that exert profound impacts (Chaubey, Aggrawal, and Gurung, 2015: 90). Fear and greed emotions have been recognized as principal catalysts within the financial market (Wamae, 2013: 45). Rahim, Hussain Shah, and Zeb (2021: 50) contend that fear has been deeply

embedded in human consciousness since time immemorial and still holds immense sway today. Consequently, the emotional states of greed and fear significantly shape the decision-making processes of individual investors (Chaudhary 2013: 67). Chandra (2008: 7) highlights that the resultant consequence of these emotions could be the thwarting of investment objectives. Similarly, Kishor (2022: 9) posited that due to these emotions, investors frequently focus on short-term outcomes to validate their investment judgments, potentially sidelining long-term gains. Thus, investors are essentially driven by covetousness and apprehension, leading to speculations marked by poorly assessed investment levels (Kishor, 2022: 90). Investors might be swayed by their emotions, subjective thought processes, and collective whims, resulting in overblown expectations of companies' projected competence and the overall economic stability. These misguided notions may contribute to stock prices fluctuating beyond reasonable valuation limits (Kishor, 2022: 56).

2.5.1.8 Mental Accounting

It proposes that individuals have a tendency to categorize events within their minds, and the distinctions between these categories can often have a greater influence on our actions than the events themselves. The concept of mental accounting, originally coined by Richard Thaler, aims to elucidate how individuals subjectively frame a financial transaction in their minds. People assess the monetary value of a transaction based on the origin of the income involved, and this bias also extends to investment choices. Despite having equivalent monetary values, investors assign varying degrees of importance to income earned through interest versus income from a lottery.

Mental accounting refers to individuals' inclination to compartmentalize their experiences into distinct mental categories (Antonides and Ranyard, 2017: 68). Thaler (2001: 80) elucidates that people frequently segment their experiences mentally, and the distinctions between these segments frequently dictate their actions. Consequently, mental accounting is connected to biases and an inability to perceive an issue in its complete context. In the context of investments, for example, each investment is individually categorized, when a more effective approach would involve integrating the various aspects to optimize the synergies (Sochi, 2018: 23). An instance of mental accounting in the realm of investing is most vividly demonstrated when individuals are reluctant to sell an investment that previously yielded substantial profits but currently only offers modest gains. In the midst of an economic upswing and a bullish market, people become accustomed to seeing substantial, albeit unrealized, profits on their investments. When a market correction occurs and erodes investors' net worth, they tend to exhibit greater reluctance to sell even when the profit margin is reduced. They mentally

compartmentalize the gains they once enjoyed, leading them to await the return of that lucrative period (Thaler, 2001: 44).

As a result, each component of their investment portfolio is treated individually, potentially diminishing the overall return (Soman and Ahn, 2011: 98). Baker, Kumar, Goyal, and Gaur (2019: 54) highlight that both time and content can undergo division. For example, individuals typically keep their funds in deposit accounts while using credit for consumption. Alternatively, an individual might opt to borrow at a higher interest rate to purchase a consumer item while simultaneously saving at a lower interest rate for a child's education fund (Schaltegger and Burritt, 2017: 42). Key mental accounting categories, as noted by Shefrin and Thaler (1988: 88), encompass present earnings, existing assets, and prospective income, each of which is treated and valued differently in people's perceptions. According to Kremer, Rao, and Schilbach (2019: 53), mental accounting is a type of framing that encompasses monitoring the successes and failures associated with judgments in various situations. This narrow framing aspect aids in describing how individuals code, categorize, and evaluate events. Dolan, Hallsworth, Halpern, King, Metcalfe, and Vlaev (2012: 33) argue that this narrow framing aspect of mental accounting causes investors to perceive their investments not as a unified portfolio, but rather as an assortment of distinct investments. This can occur during any moment or due to risky decisions (Kremer, Rao, and Schilbach, 2019: 66).

Moreover, mental accounting also influences how investors perceive portfolio risk. Neglecting the interconnected impact that investments have on each other can lead investors to develop an inaccurate understanding of the risks associated with incorporating various securities into a specific portfolio (Nofsinger, 2007: 92). The phenomenon of mental accounting can result in a reluctance to divest from investments that have previously yielded significant profits (Pompian, 2012: 8). According to Kremer, Rao, and Schilbach (2019: 34), Nonetheless, mental accounting isn't inherently harmful to investors; it aids in shaping future behaviour by emphasizing deviations from previous decisions. Mental accounting implies that individuals prefer to compartmentalize their money based on various subjective criteria such as the source and purpose of each account. In line with this theory, people assign distinct purposes to each group of assets, which can often lead to irrational and adverse outcomes for their consumption, investment choices, and other financial actions. Many individuals engage in mental accounting without fully realizing the illogical nature of this thought process. For instance, people often maintain a separate "money jar" or fund for projects, vacations, education, or a new home, while simultaneously carrying significant credit card debt.

The mental accounting bias is also applicable to investment decisions. For example, certain investors divide their financial investments between a secure portfolio and a risky one, aiming to shield the overall portfolio from the adverse effects of risky investments. However, this practice can prove inefficient. Despite the effort and resources expended to separate the portfolio, the investor's net wealth remains unchanged compared to holding a single larger portfolio. This can result in less-than-ideal decision-making. For instance, a person might choose to take out a loan at a higher interest rate to purchase a consumer item while simultaneously saving at a lower interest rate for their child's college fund. The utilization of mental accounts can be partially understood as a means of self-control (Kremer, Rao, and Schilbach, 2019: 75).

2.5.1.9 Financial Literacy

Financial literacy encompasses the comprehension of financial principles, the acquisition of skills, the drive, and the confidence to apply this knowledge effectively in various financial scenarios, with the ultimate goal of enhancing individuals' financial well-being and enabling their participation in economic activities (Kashif, 2015: 74). In a study conducted in Karachi, Pakistan, Lodhi (2014: 70) investigated the influence of financial literacy, experience, the utilization of accounting information, the importance of financial statement analysis, and an individual's age on their investment decision-making. According to his empirical findings, financial literacy and access to accounting information played a significant role in reducing information disparities and facilitating investments in higher-risk assets. For an investor, possessing financial literacy is crucial for comprehending the importance of budgeting, effectively managing cash flows, and strategically allocating assets to achieve financial goals (Seth, Patel, and Krishnan, 2011: 2).

Lusardi (2019: 7) emphasizes that a universally accepted definition of financial literacy is lacking, leading to various proposed interpretations. According to Lusardi (2019: 1), financial literacy involves assessing an individual's capacity to comprehend and apply information pertaining to personal finance matters. Furthermore, it encompasses an individual's capability and confidence in utilizing their financial knowledge to make informed financial choices. Lusardi and Mitchell (2013: 59) highlight the expansion of financial products and services, making the financial markets more accessible to investors. However, numerous financial products are intricate and may prove challenging for individuals lacking financial expertise to grasp. The significance of financial literacy is paramount in enabling investors to comprehend and effectively navigate financial products and services.

2.5.1.10 Accounting Information

Myers, Franklin, Lepak, and Graham (2018: 88) found that investors primarily rely on fundamental or technical analysis for information. Mishra and Jhunjhunwala (2018: 110) argue that investors focus on future expectations, including earnings projections and historical data. Meanwhile, Lee and Tweedie's research (1975, 1976, 1977) reveals that the public struggles to understand corporate financial reporting. Hsiao and Tsai (2018: 20) provide evidence that investors primarily use price and earnings volatility as risk measures, while Ramya and Bhuvaneshwari (2017: 910) compare individual performance to professional fund managers and find that individuals exhibit significant skill in investment decision-making. Additionally, Myers, Franklin, Lepak, and Graham (2018: 30) reiterate that investors rely heavily on fundamental or technical analysis.

Researchers have commonly used accounting information to assess factors influencing individual investments (Ahmad, 2017: 37). Investors typically base their decisions on accounting information from financial statements and a company's financial position (Iqbal and Usmani, 2009: 58). behavioural finance researchers have explored similar dimensions when studying accounting information, including financial statement conditions, expected earnings, expected dividends, share price affordability, past stock performance, marketability, and dividend payments (Merikas, Merikas, Vozikis, and Prasad, 2011: 94). Merikas et al. (2011: 91) emphasize that experienced investors rely heavily on a company's accounting information, particularly expected earnings, financial statement conditions, and industry standing.

Bashir, Ahmed, Jahangir, Zaigam, Saeed, and Shafi (2013: 69) suggest that all dimensions of accounting information somewhat influence individual investment decisions. In their study, dividends paid by a company carry more weight than other dimensions. The least influential dimension is the condition of financial statements. Mweu and Omwenga (2017: 9) conclude that accounting information positively affects investors' decision-making. Ikeobi and Jat (2016: 95) measure accounting information under dimensions such as expected bonus issues, historical dividend payouts, future dividends, past performance, and projected earnings per share. Their findings emphasize the importance of providing investors with timely and accessible information about organizations for informed investment decisions.

2.5.1.11 Personal Attitude and Perception.

The theory of reasoned action examines behavioural intention as the primary driving force behind individuals' engagement in specific behaviours. This behavioural intention is influenced by two key factors: attitude toward the behaviour (AT) and subjective norm (SN), both of which

are associated with the act itself (Heikal, 2014: 730). Attitude toward the behaviour refers to an individual's overall emotional assessment, reflecting their positive or negative inclination toward the behaviour. On the other hand, subjective norm pertains to an individual's perception of whether those significant to them endorse or discourage the behaviour. A study demonstrated that investors' ability to engage with or exit the market swiftly hinges on their confidence and their perception of the current market situation. Kavitha (2015: 3359) conducted research involving 125 participants to investigate investors' sentiments and views regarding stock market investments and to assess how their awareness levels impact their choice to invest in the stock market.

The research uncovered a noteworthy correlation between investors' attitudes and their engagement in stock market investments. The study's overall findings suggest that implementing strategies to foster more positive attitudes among local investors can facilitate their participation. Furthermore, the research revealed a substantial connection between local investors' perceptions of stock market regulations and their willingness to participate in the National Stock Exchange (NSE). To encourage greater involvement from local investors, it is imperative to focus on strengthening regulations and increasing awareness initiatives.

2.5.2 Behavioural Factors

behaviour involves the combinations of ability, opportunity, and motivation to formulate investment decisions rooted in the most pertinent information and tailored to personal preferences. Nevertheless, when individuals do embark on decision-making, they often grapple with a finite attention span, hindering their ability to objectively process the abundance of available information. (Kahneman 2011: 75). Behavioural factors are factor that affect or influence the behaviour of an individual, this factor relate to individual which include physical factors, emotional factors, life experiences, wants and needs. Behaviour is also influence by environment factors and response of other people. This means that an individual would needs to consider a range of factors to understand behaviour and the personal response and role. Behavioural factors and demographic factors are all under psychological factors. Behavioural factors as stated in financial behaviour, it was discovered that gender interacts with five financial behavioural factors, including overreaction and herding and overconfidence bias demographic factors as overconfidence bias, overreaction bias, herding, and irrational thinking.

2.5.3 Demographic Factor

Numerous investigations have indicated that psychological biases are impacted by demographic characteristics (Katper, Azam Karim and Zia 2019, Lizabeth, Murhadi and Sutejo 2020, Beatrice, Murhadi and Herlambang 2021, Najmi et al 2019). For instance, Hsu et al (2020: 1) found that women displayed greater susceptibility to behavioural biases compared to men. Similarly, demographic, and socioeconomic factors have been identified as predictors of risk tolerance behaviour in various studies (Worthington, 2006: 56). As an example, Sharma and Chatterjee (2021: 3) uncovered a negative relationship between age and risk tolerance, revealing that individuals of higher age exhibit lower risk tolerance. In a similar vein, Gilliam, Chatterjee, and Zhu (2010: 78) explored financial risk tolerance among different groups of baby boomers and discovered that trailing baby boomers (born between 1960 and 1964) displayed higher risk tolerance than leading baby boomers (born between 1946 and 1950). This pattern is echoed in other investigations (e.g., Garling et al., 2009; Hira, Loibl and Schenk, 2007; Morin and Suarez, 1983; Riley and Chow, 1992; Zuckerman, 1994).

Additionally, the impact of demographic factors extends beyond psychological biases to influence decision-making judgments. Rajdev and Jssciw (2013: 112) asserted that demographic elements such as age, gender, educational background, family size, income, and savings can significantly impact decision-making. Jain and Mandot (2012: 87) delved into the impact of these demographic factors on investors in Rajasthan, revealing that factors such as age, marital status, sex, location, income, market knowledge, occupation, and qualifications heavily influenced the decision-making process. Gunay and Demirel (2011: 149) identified gender as a closely linked demographic variable affecting financial behavioural influences. This study also highlighted the strong connection between savings and behavioural elements such as overreacting, following the crowd, cognitive biases, and illogical reasoning.

Gunay and Demirel (2011: 45) determined that gender and savings level are influential demographic factors connected to financial behavioural aspects. Nevertheless, they did not discover any significant interaction between age and behavioural finance factors. In another investigation conducted by Lin (2011: 82), investment decision-making was examined across various demographic characteristics in Taiwan. The findings indicated that gender played a role in disparities related to behavioural biases. This research involved 450 individual investors active in the Taiwan Stock Market, unveiled that female exhibited a stronger disposition effect compared to males, while males displayed greater confidence. Moreover, females were more prone to herding, a trend also observed in other research (Eagly and Carli, 1981; Flynn and Ames, 2006; Schmidt and Traub, 2002). Lin's (2011: 82) investigation also highlighted that young investors were more susceptible to herding than older counterparts, corroborating

findings from other studies (e.g., Goyal, 2004). However, Lin's study did not establish a significant link between income level and behavioural biases.

Numerous additional studies have corroborated that demographic elements significantly influence investors' decision-making processes. Based on a sample of 589 participants, De Acedo Lizarraga, de Acedo Baquedano, and Cardelle-Elawar (2007: 383) identified substantial variation in individuals' perception of decision-making influences across different age groups and genders. Similarly, Shanmugasundaram and Balakrishnan's (2010: 589) exploration of factors influencing investors' behaviour in the Indian capital market underscored the impact of demographic variables on investment decisions. Collectively, these studies highlight the substantial influence of investor demographics—including gender, age, education, family size, annual income, and savings—on the decision-making process, which underscores their significance for this study. The demographic factors pertinent to this research are further elaborated upon below.

2.5.3.1 Age

As previously discussed, age stands out as a pivotal demographic factor exerting influence over investors' decision-making processes. Age represents a distinct life stage, encompassing a wealth of experience and qualifications that naturally accumulate over time. The acquisition of individual skills tends to increase with age (Jolaosho, 2017: 46), as individuals become adept at managing time efficiently (Hadi, 2015: 84). Numerous studies have delved into the relationship between age and investment decisions, yielding varied findings, as demonstrated in research conducted by Das and Jain (2015), Chavali and Mohanraj (2016), and Tanusdjaja (2018). A spectrum of studies has demonstrated the impact of age on investors' decision-making, including investigations such as, Choi, Kariv, Muller and Silverman (2014: 1544) observed a significant inverse association was noted between age and the conformity of decisions with economic rationality. According to a 2014 research study, individuals aged 55 and above exhibit lower levels of rationality compared to younger investors. More precisely, older individuals are considerably more prone to violating the principle of transitivity in their decision-making.

Edelman (2015: 6) challenged the prevailing research findings that suggest a cognitive decline linked to diminishing fluid intelligence with age. Instead, the study introduced new research from the University of California, which posits that the financial knowledge and expertise acquired over one's lifetime, through learning and experience, counteracts the natural decline in cognitive abilities. In the context of financial decision-making, crystallized intelligence has

proven to be more influential than fluid intelligence, with accumulated knowledge outweighing the effects of natural decline. The article concludes that both neuroscience and behavioural finance should be considered in understanding the human mind and its impact on financial decision-making.

Contrastingly, Korniotis and Kumar (2011: 252) found that older investors tend to exhibit inferior investment skills despite their greater experience. Interestingly, financial errors seem to follow a U-shaped pattern, with the fewest mistakes occurring at around the age of 53 (Agarwal et al., 2009: 99). While aging does lead to a decline in cognition and financial literacy, it is not associated with a decrease in confidence in managing one's finances (Gamble, Boyle, Yu, and Bennett, 2014: 2607)

Arora and Kumari (2015: 85) examined how demographic factors, specifically age and gender, influence investors' risk-taking abilities by analyzing behavioural biases such as loss aversion and regret. Their research involved 450 investors from the northern region of India, and path analysis was employed to evaluate the gathered data. The findings revealed that investors between the ages of 41 and 55 demonstrated a greater inclination towards loss aversion and regret. As individuals age, their decision-making tends to adopt a more cautious approach, leading the elderly to exhibit a heightened sense of care when allocating their wealth towards investment products. As age advances, there's a tendency for a decrease in risk-taking behaviours (Violeta and Linawati, 2019: 92). While viewpoints may diverge on the impact of individual age on investment decisions, there's a general consensus among researchers that individuals tend to display a greater inclination towards investing during their younger years, with the propensity to invest gradually diminishing as they grow older. This study proves that age affects investment decision making and has the same results as research conducted by (Das and Jain, 2015: 58).

2.5.3.2. Education

Education stands as another significant demographic factor with a discernible impact on investors' decision-making processes. The influence of education extends to its effect on psychological biases, thereby shaping investors' decision-making tendencies. The level of education a person has attained reflects their mastery of knowledge, particularly within the academic realm, and is instrumental in influencing an individual's risk tolerance when engaging in investment activities. Okech (2016: 721) asserts that higher educational attainment corresponds to an elevated willingness to endure risks. Numerous research outcomes have examined the correlation between an individual's educational background and

their investment choices, yielding diverse results. Studies by Musdalifa (2016), Khanam (2017), Artina and Cholid (2018), Christanti and Mahastanti (2000), and RA Putri and Isbanah (2020) have contributed to this understanding. Suryadi (2012) underscores the significance of education in the endeavor to nurture human resources. This is because as one's level of education increases, so does their level of productivity. Furthermore, higher education fosters a deeper understanding and awareness of the importance of tolerance, health, and leading a harmonious life. According to Musdalifa (2016: 10), the process of making investment decisions is intertwined with education and influenced by an individual's knowledge level. It can be inferred that as an individual's level of education increases, their investment decision-making process becomes more meticulous, particularly when it comes to the prudent management and allocation of funds, guided by the pursuit of benefits.

2.5.3.3. Gender

Gender also plays a significant role in shaping an investor's behavioural tendencies. It is arguably considered one of the foremost factors impacting the financial choices made by individual investors, as highlighted in various studies (Gunay and Demirel, 2011: 149). Gender refers to the biological distinctions between men and women, which can result in contrasting investment decision-making approaches. Generally, male investors exhibit a propensity to allocate their funds to riskier assets within the capital market, while female investors tend to favor the banking industry, which typically entails lower risk (Lutfi, 2010). Research findings by Deaves, Lüders, and Schröder (2013), Musdalifa (2016), and Akims and Jagongo (2017: 105) underscore the influence of gender on investment decision-making. However, contrary outcomes have been observed in studies by Utami and Kartini (2016) and Tanusdjaja (2018: 112), which contend that gender does not exert a significant impact on investment choices.

Gender influences psychological biases which affect the financial decision-making process has been a subject of examination in several studies, revealing various facets. For instance, a study conducted by Grable et al. (2004) indicated that gender plays a role in risk tolerance, with women generally displaying lower risk tolerance compared to men. These findings are in harmony with other research that has established a link between gender and risk tolerance, as exemplified by studies like Felton et al. (2003), Hariharan, Chapman, and Domian (2000), Holt and Laury (2002), and Olsen and Cox (2001). Garling et al. (2009: 39) similarly identified a gender-based discrepancy in risk-taking behaviour, noting that women tend to be less inclined toward risk-taking compared to men. These findings were further corroborated by Rana, Murtaza, Noor, and Rehman (2011: 82), who found that females generally exhibit a lower preference for risk and thus tend to avoid making risky decisions. According to Deo and

Sundar (2015: 74) female investors tend to place greater consideration on risk factors, particularly concerning the potential for losses and uncertainty, in comparison to their male counterparts. Likewise, Li, Sullivan, Xu, and Gao (2013: 89) observe that female sell-side analysts often exhibit a higher degree of risk aversion in their recommendations. Pompian and Longo (2004: 14) also note gender-related distinctions: women tend to adopt a realistic and pessimistic approach with lower risk tolerance, while men tend to display overconfidence, unrealistic expectations, and higher risk tolerance.

Nonetheless, various other research investigations have delved into disparities between male and female professional money managers and, overall, have found no substantial gender distinctions among these investment professionals (Atkinson et al., 2003: 23). Similarly, Jones and Merritt (2020: 41) determined that female fund managers maintain portfolios with slightly elevated risk levels compared to their male counterparts, but they did not identify any significant variances in performance and turnover between the two groups. Beckmann and Menkhoff (2008: 35) analyzed responses from 649 fund managers and affirmed that female fund managers do exhibit a greater inclination towards risk aversion, aligning with findings from gender studies. However, the anticipated lower degree of overconfidence among women holds negligible significance within the realm of fund management. Moreover, Durand, Fung, and Limkriangkai (2019: 347) explored myopic loss aversion and its association with gender, concluding that, when considering individuals' personality traits, gender does not exhibit a robust correlation with this behavioural bias.

On the other hand, certain studies have indicated that there is no discernible gap in overconfidence levels between men and women (Biais, Hilton, Mazurier, and Pouget, 2005; Deaves et al., 2003; Lundeberg, Fox, Brown, and Elbedour, 2000). Similarly, Nelson (2015: 10) reported that there is no disparity in risk attitude between men and women, although this difference becomes apparent when examined in group dynamics rather than at the individual level.

2.5.3.4 Experience

The experience of individuals and its potential influence on their financial decision-making is a notable demographic factor under investigation in this study. According to Irshad (2022: 15), experience plays a pivotal role in the accumulation of tacit knowledge and the utilization of intuitive decision-making skills. Past experiences of individuals have the capacity to impact their future decision-making, whether positively or negatively. As outlined by Dietrich (2010: 2), prior choices can shape subsequent ones, with successful judgments being more likely to

be repeated in similar situations. This tendency is often driven by the desire to avoid repeating past errors (Shi and Li, 2021: 595). Notably, experiences like those of investors during the global financial crisis of 2008-2009 have rendered some investors more cautious in their investments, leading them to shun risky stocks despite their potential for high returns (Lutfi, 2010: 214). However, the propensity to avoid past mistakes might reach a point where decisions grounded solely in past experiences do not necessarily yield the optimal outcomes. Dietrich (2010: 2), in contrast, asserts that investment decisions should be guided by current choices and available options rather than being solely reliant on past outcomes.

Numerous studies have spotlighted the correlation between investors' experiences and psychological biases (e.g., Koshy, April, and Dharani, 2020; Li, Yin, Qiu, and Bai, 2022). A study conducted by Mylott (2023) indicated that experience often leads to heightened overconfidence. These findings align with similar studies (e.g., Menkhoff, Schmeling, and Schmidt, 2013; Mishra and Metilda, 2015), but stand in contrast to other research documenting a negative relationship between experience and overconfidence (e.g., Sanchez and Dunning, 2018; Ancarani, Di Mauro, and D'Urso, 2016). Furthermore, certain investigations have identified a positive connection between experience and risk tolerance (e.g., Chevalier and Ellison, 1999; Hong et al., 2000; Lamont, 2002), whereas a decline in herding behaviour with increased experience has also been observed (Menkhoff et al., 2006: 33).

2.5.3.5. Level of Income

The income level of investors has been extensively studied for its impact on their investment behaviour. For instance, Isidore and Christie (2019: 1) conducted a survey of investors in the Chennai India, revealing that those with higher annual incomes exhibited greater competence and engaged in more frequent trading within the stock market. This trend was attributed to the overconfidence displayed by high-income investors in comparison to their lower-income counterparts. Nonetheless, across all income groups, a preference for the safety of equity investments and an aversion to excessive trading decisions, indicating a preference for status quo, were observed. Mahastanti and Hariady (2014: 190) highlighted that high-income investors demonstrated a reduced local bias, indicating less favoritism toward stocks of local companies compared to those with lower incomes. They further noted that wealthier investors exhibited less disposition effect, likely attributed to their improved access to expert financial advice and enhanced information processing capabilities.

Rana, Khan, and Baig (2014: 91) noted a significant positive relationship between income level and the search for digital and advice-seeking information. Wealthier investors were found

to be more eager to gather insights from financial experts in comparison to their less affluent counterparts, particularly when considering investments in risky assets. Islamoglu, Apan, and Ayvali (2015: 540), in their study of bankers in the Bartin region in Turkey, discovered that as income levels increased, the following of investment-related information heightened. Additionally, banking and payment behaviour improved, the impact of society and religion on investment choices increased, leading to a more conservative investor mindset. This connection between income and investment decisions was best explained by the variable indicating that an increase in income level heightened investors' interest in financial instruments.

Umamaheswari and Kumar (2014: 105) examined investors from the salaried middle-class segment in the Coimbatore area of India, finding that a majority demonstrated the knowledge needed to make sound investment decisions and allocate savings appropriately for the future. However, a significant portion lacked investment awareness to choose the most suitable financial plan. Thulasipriya (2015: 13), on the other hand, discovered that there is no notable connection between monthly income and the preferred choice of investment avenues among government employees. Notably, those with monthly incomes up to Rs 25,000 displayed a higher preference for investments. Velmurugan et al. (2015: 434) explored investor perceptions about various investment avenues in the Vellore region in India, revealing that high-income investors exhibited a preference for secure investment choices such as post office and bank deposits. In contrast, Bhatt and Bhatt (2012: 458) found that low-income investors, due to their limited savings capacity, leaned towards safer investment options like bank and post office deposits.

Tirupathi and Ignatius (2013: 93) delved into the preferences for different investment options among employed investors in the Namakkal district of Tamil Nadu. Income level emerged as a significant determinant in shaping portfolio composition. Notably, lower-income investors exhibited a preference for insurance and bank deposits over other investment avenues. It's noteworthy that investment requires capital, which can originate from either loans or personal finances. In addition to financial knowledge, income and investing experience also exert influence on investment decisions. A higher income and greater experience in financial management tend to enhance one's ability to manage finances for the future, assessing and tolerating associated risks (Nababan and Sadalia, 2013: 22). This assertion is supported by prior studies conducted by Safryani, Aziz, and Triwahyuningtyas (2020), Dewi and Purbawangsa (2018), Senda, Rahayu, and Rahmawati (2020), and Rasyid, Linda, Patrisia, Fitra, Yuliza, and Susanti (2018: 262), all of which emphasize the significant impact of income on investment decisions.

However, studies conducted by Lindananty and Angelina (2021) and Putri and Isbanah (2020: 205) argue that income has a negligible impact on investment choices. Ramanathan and Meenakshisundaram (2015: 161) demonstrated a positive correlation and significant relationship between an investor's annual income and the investments they make. Vaidehi and Vijayakumar (2016: 9) analyzed investor behaviour in the Chennai region, observing that high annual income investors, surpassing Rs 30 lakhs, displayed a more aggressive approach and favoured growth stocks. Income's role in determining saving attitudes among investors is also noteworthy. Bhabha, Kundi, Qureshi, Khan, and Nawaz (2014: 40) highlighted income as a pivotal deciding factor in shaping saving behaviour. The prominence of income in determining risk appetite among investors was recorded by Gupta and Sharma (2016: 84), who found that individuals with higher incomes exhibit greater risk tolerance and a higher propensity to invest in mutual funds. This conclusion emerged from their analysis of factors influencing mutual fund investors' satisfaction levels in the Jaipur region. Furthermore, Geetha and Vimala (2014: 372) documented a significant relationship between investor income levels and their capacity for risk-taking.

In a study comparing behavioural biases between salaried and business-class investors, Manish (2010: 121) discovered that cognitive biases were more prevalent among business-class investors, whereas salaried individuals leaned towards framing effect and Prospect theory biases. Lutfi (2010: 223) noted that low-income investors typically exhibit risk-averse behaviour, while wealthier investors often display a penchant for risk-seeking behaviour. This observation is consistent with findings from Barber and Odean's study (2001a: 16), which indicated that higher-income individuals tend to invest in more volatile portfolios comprised of similarly volatile stocks. Likewise, Sadiq and Ishaq (2014: 9) noted that greater wealth often corresponds to an increased willingness to take risks. Most studies have reported a positive correlation between wealth and risk tolerance (e.g., Rana et al., 2014; Hartog et al., 2002). A person with a higher monthly income is likely to take on more risks due to a greater disposable income available for investment.

2.5.4. Environmental Factors

Environmental factors, encompassing economic and political conditions, are widely recognized as holding substantial significance in shaping the investment decision-making behaviour of stock investors (Elmassri, Harris and Carter, 2016: 164; Carr, Kolehmainen and Mitechell, 2010; Mnif, 2017: 211). These factors have also been observed to exert influence on an individual's decision-making process. Starting from the 1980s, fund managers have

increasingly considered the potential adverse consequences of neglecting sound environmental practices. A study by Carr et al. (2010: 164) highlights the substantial impact of economic, political, and social factors on account management, financial performance of individual equity investors, and stock market performance. Notably, environmental factors encompassing social, economic, and political aspects significantly affect the deployment of capital and strategic investment choices by investors (Elmassri et al., 2016: 202). Instances of political and economic uncertainties tend to deter individuals from participating in financial markets (Bashir, Javed, Butt, Azam, Tarveer and Ansar, 2013: 39). Environmental factors wield a considerable role in shaping financial activities and the volume of investment within a country. These factors span political, economic, social, and cultural dimensions across the globe (Neves and Pinto, 2013: 45).

Elmassri et al. (2016: 165) and Carr et al. (2010: 179) emphasize the profound influence of political, economic, and social factors on capital investment strategies and strategic investment decisions. Hence, environmental considerations emerge as a crucial dimension for individual investors to ponder, given their far-reaching implications for the future success of most firms in developed economies (Hall, 2006). The investor landscape now reflects a heightened scrutiny of companies with a history of unethical practices, such as environmental pollution. The trend toward socially responsible investment has gained momentum over the past decade, giving rise to concepts like green funds and green companies (Taghizadeh-Hesary and Yoshino, 2020). Another realm of inquiry within behavioural finance is the examination of how environmental factors impact investors' emotions and moods. Lepori (2009: 7) posits that shifts in environmental factors, encompassing weather, biorhythms, and various social elements, may trigger changes in mood that eventually influence investment decisions via the mood misattribution mechanism. Research has demonstrated that environmental factors can indeed influence mood (Chang et al., 2007; Lee et al., 2002), and mood, in turn, shapes decision-making (Mehra and Sah, 2002: 872).

2.5.5. Economic Factors

The Economic Factor stands as a pivotal environmental variable with a monumental influence on investment decisions and performance. This factor is propelled by various economic forces that exert a profound impact on financial markets and investment outcomes (Narayanan, Baird and Tay 2020; Douglass, 2018). Similarly, Ojo, Owolawi, Mphahlele, and Adisa (2019: 3) affirm that economic indicators perpetually exert pressure on stock prices and market behaviour, rendering stock prices highly responsive to economic indicators. A plethora of studies underscores the substantial role of economic forces in shaping market dynamics and

investment performance. Notably, fluctuations in both local and international interest and exchange rates exert considerable influence on return on investment (Deb and Mukherjee, 2008: 147). Extensive investigations have been undertaken in both developed and developing nations to explore the role of economic factors in market performance and investment activities, as evidenced by studies such as (Schumpeter and Backhaus, 2003; Fama, 1990; Macdonald and Power, 1991; Thornton, 1993; Kaneko and Lee, 1995; Darrat and Dickens, 1999).

Illustratively, Maysami and Koh (2000: 88) underscored the significant impact of exchange and interest rates on investment activities and stock prices within the Singapore stock market. Analogously, Bhattacharya (2012: 10) and Charkravarty (2005: 397) yielded analogous findings in the context of India. According to Shawtari, Salem, Hussain, and Hawariyuni (2016: 13), a substantial inverse relationship exists between interest rates and returns on investment in South Africa. Echoing these findings, a study conducted by Omodero (2019: 115) in Nigeria reported similar results. Another investigation by Rabbani, Javed Iqbal, and Jabbar (2015: 7) unveiled an adverse connection between interest rates, inflation rates, market performance, and financial activities. Furthermore, He, Mishra, Aman, Shahbaz, Razzaq, and Sharif (2021: 112) brought to light a positive correlation between stock prices and interest rates, which exerts a significant influence on the investment activities of equity investors in Central and Eastern Europe. In view of this body of literature, it can be inferred that the economic factor exerts a noteworthy impact on financial markets and the volume of investment.

2.5.6. Political Factor

Another factor that has been demonstrated to exert influence over investors' financial decision-making pertains to political considerations. Karima and Azman-Sainib (2013: 398) contended that the predominant external factors that disrupt investment decisions often revolve around the economic outlook and fiscal strategies implemented by a country, manifesting through projected interest rates and GDP expansion. Ozorio, Bastian-Pinto, Baidya, and Brandao (2013: 23) acknowledged the potential impact of national regulations on investor decisions. Julio and Yook (2012: 79) emphasized the significance of political uncertainty in shaping investment conditions and economic development within a country, a factor that inevitably impacts the volume of investment. Consequently, an uncertain political environment and investment activities share a direct and interdependent relationship. For instance, Kutu, Alori, and Ngalawa (2021: 240) unveiled that both individuals and firms generally tend to steer clear of capital markets during elections due to heightened uncertainty in political determinants during these periods. Moreover, they observed that individual and institutional investors often

defer their investment decisions if the election outcome contradicts their perceptions or predictions.

Similarly, Pástor and Veronesi (2013: 541) highlighted the profound influence of global or domestic political news on financial markets, where financial securities consistently react to political news. Furthermore, unexpected political developments elevate investment risks, particularly within smaller or less robust economies. Additionally, Bonapart, Kumar, and Page (2012: 8) contended that individuals' political affiliations significantly shape their investment decisions, as they tend to exhibit greater confidence when their affiliated political party holds power. Political engagement also plays a pivotal role in the political environment, as individuals who closely follow political news and activities possess enhanced insights into both political and market conditions, equipping them to make more informed and astute investment decisions (Bonaparte and Kumar, 2013: 781; Mnif, 2017: 230). In a similar vein, Barro (2013: 324) demonstrated that consistent political policies wield a profound impact on a country's financial growth. Generally, lower political risk is associated with a correspondingly lower required rate of return for investors. Furthermore, political risk influences the local cost of equity, which in turn reverberates across the growth trajectory of the local stock market (Yarty, 2008: 4).

2.5.7. Social Factors

Social factors, encompassing elements like media exposure, social interactions, and online presence, have been pinpointed as triggers for certain behavioural tendencies among investors. Peng, Wang and Zhou (2022 :198) contend that social influence significantly shapes investors' trading behaviour. Correspondingly, Piehlmaier (2022:1) highlighted the common practice of investors seeking input from family and friends before reaching their investment decisions. Social networks facilitate the sharing of information among family members, friends, neighbours, and other individuals in one's vicinity (Ahmed et al 2018 :73). When people sense a stronger overall similarity to a particular group, they tend to project their attributes, contemplate their own attitudes and traits, and draw connections to specific characteristics of that group (Ames, 2004: 580). Many scholars posit that individuals exhibit a more pronounced tendency to project onto in-groups compared to out-groups. (Daniel 2004; Duclos, Echo and Jiang, 2012: 130).

Interactions among individuals within society influence investment choices, and the dissemination of information and rumors within specific social or geographic contexts plays a crucial role in evaluating trading patterns. Nevertheless, certain sociologists and economists

contend that social processes exhibit threshold effects, wherein the adoption of a particular belief or behaviour by a critical mass of individuals tips the balance in favor of one behaviour over another (Gigerenzer and Gaissmaier, 2011: 479). Numerous research studies have extensively explored how social influence exerts its impact on various facets of investment. For instance, the work of Yonghua, Can, Chengyao, and Dandan (2018: 134) has demonstrated that an individual's decision to participate in the equity market is contingent upon the investment choices made by others within their social network. These findings have been corroborated by Brown et al. (2018: 1). Furthermore, Kourtidis, Chatzoglou, and Sevic (2017: 1410) have provided empirical evidence showing that investors are more inclined to invest in stocks from a particular industry when other investors within the same geographic area opt for stocks from that very industry.

Furthermore, research conducted by Khan et al (2020: 3433) utilizing a data set of equity trades revealed that trades driven by social motivations are indicative of predicting stock returns. Investors tend to exhibit herd behaviour as they are preoccupied with the opinions and perceptions of others regarding their investment choices (Subash, 2012: 8) as consistent to the previous studies (Scharfstein and Stein, 1990: 475). The study emphasized the significance and repercussions of social interaction on investment decisions by offering a choice between two options to assess the influence of such social interactions on investment behaviour amid uncertainty. The findings indicated that participants who had greater social involvement with their peers opted for less risky investments, whereas those who felt socially excluded tended to opt for riskier investment choices (Duclos, Echo, and Jiang, 2012).

2.5.8. Cultural Factors

Culture can be described as the "collection of underlying beliefs and assumptions that are commonly held by individuals within a community or group." Cultural factors exert a significant impact on investment choices. According to Ho, Wang, and Vitell (2012: 430), the observable tendencies and beliefs within a culture shape the processes of decision-making. Various studies have revealed that cultural and value-related aspects significantly impact investment choices (e.g., Beugelsdijk and Frijns, 2010; Chui et al., 2010; Guiso, Sapienza, and Zingales, 2008). Economic decision-making is inherently influenced by a range of factors (Quinn, 2016: 29). The exploration of culture and decision-making focuses on understanding the variations in decisions made by individuals from different cultures and the implications of such differences (Yates and De Oliveira, 2016: 113). A crucial question arises regarding whether the investment decisions of individuals in the East and West yield distinct outcomes when facing uncertainty.

Numerous studies underscore that investors need to account for multiple factors in their investment decisions, encompassing internal elements like education level, knowledge, and willingness, as well as external factors such as economic conditions, politics, and financial reports (Abdeldayem, 2016; Bashir et al., 2013; Jahanshahi et al., 2017; Pak and Mahmood, 2015). Grijalva's study (2010: 311) aimed to ascertain the influence of culture on financial viewpoints and judgments, comparing decisions between Hispanic Mexicans and North American Mennonites. It unveiled that cultural considerations significantly shape financial behaviour due to the distinct upbringing of each group. Additionally, Anderson et al. (2011: 23) observed direct cultural effects on investor behaviour, while Chan et al. (2005: 1502) noted that investors tend to prefer stocks from similar cultures or geographically closer countries.

Rieger, Wang, and Hens (2010: 37) conducted a study investigating the influence of time preferences, risk patterns, and behavioural biases on the behaviour of around 7000 investors from 50 countries, revealing notable discrepancies. The research revealed that investors hailing from Nordic and German-speaking countries demonstrated greater patience, whereas those from African nations displayed lower tolerance levels. When comparing decisions between Easterners and Westerners, it's essential to underscore the significance of cultural nuances, as cognitive cultural influences permeate nearly the entire risk decision-making process (Ackert et al., 2003; Fogel and Berry, 2006: 110). Moreover, the impact of cognitive cultural attributes on individual attitudes and associated concepts have progressively become a central aspect in economics and behavioural finance (Groves et al., 2008: 443; Hough and Ogilvie, 2005; Jahanshahi et al., 2017: 8). In essence, investigating the divergences in East-West decision-making through the lens of cognitive culture holds significant importance. Anglo-Saxon investors tend to tolerate losses well, whereas Eastern European investors exhibit a pronounced aversion to losses. Therefore, cultural factors play a pivotal role in shaping investors' financial choices.

2.5.9. Ethical Factors

Ethical factors encompass an additional array of external influences that can potentially impact investors' financial choices. The significance of ethical standards in investment has surged in recent times (Haines and Leonard, 2004: 10). A mounting number of investors now incorporate ethics into their stock trading decisions, distinguishing between companies that produce products harmful to humans and those that prioritize human welfare. Sectors such as tobacco, alcoholic beverages, and gambling industries find themselves especially susceptible to investors' ethical considerations. Investors attuned to ethical concerns tend to exclude stocks

associated with detrimental practices. Lincoln and Holmes (2011: 61) emphasized that individuals might encounter situations laden with moral complexities, and awareness of these issues shapes the process of investment decision-making. Making ethical choices at an individual level hinges on an understanding of the ultimate consequences from a personal perspective. Ferrell and Fraedrich (2021: 76) underscore that this understanding dictates the repercussions of investment choices.

An investor sensitive to ethical concerns often adopts a long-term perspective, considering the broader context, and possesses the capacity to monitor and gauge their progress towards ethical objectives (Nofsinger 2001: 1341). However, Lee and Selart (2014: 575) posit that holding ethical beliefs doesn't necessarily prevent individuals from making morally questionable decisions. Similarly, the influence of ethical considerations on financial markets, as argued by Goodman, Neamtiu, Shroff, and White (2014: 335), results in market inefficiencies due to the avoidance of certain stocks by conscientious investors. According to Masini and Menichetti (2013: 515), investment decisions should ideally hinge solely on financial gains; they suggest that while certain investors might treat ethical investing as a form of charitable contribution, their primary focus remains financial returns. Nevertheless, Webley et al. (2001: 30) presented opposing evidence, highlighting that personal values play a decisive role in the manner in which funds are allocated and ethical investors remain steadfast in their ethical investment choices, irrespective of performance. Other studies have demonstrated that many ethical investors blend ethical and conventional investments in their portfolios (Lewis, 2001; Lewis and Mackenzie, 2000; Mackenzie and Lewis, 1999; Webley et al., 2001). Consequently, the relationship between expected returns and personal values may not be straightforward. Furthermore, age has been identified as an influencer of ethical considerations. For instance, Matterson (2000: 4) found that 75-80 percent of investors aged 24-38 preferred ethical investment behaviours, compared to 73 percent of investors aged 40-60.

2.6 Portfolio Diversification

Diversification entails investing in a variety of assets to either minimize risk or maximize returns within a portfolio. It presents an opportunity for investors to expand from small firms into various market offerings (Hatem, Hajji and El-khatib 2019: 1). Modern Portfolio Theory (MPT) is a financial concept aimed at minimizing portfolio risk while maximizing the expected return. The pioneering work of Harry Markowitz (1952) introduced the theory of modern portfolios, laying the foundation for subsequent developments in the field. Markowitz initially developed the portfolio problem as a selection of assets based on mean-variance optimization.

He recognized that investors faced portfolio risk, prompting a crucial insight that stock risk should be assessed not only by individual variance but also by covariance. Furthermore, he advocated for constructing an optimal portfolio with perfectly negatively correlated assets, noting that numerous assets circulated with strong positive correlations. This insight laid the groundwork for the concept of diversification (Markowitz 1952 and 1959).

The exploration of diversification has garnered the focus of researchers in the field of management and emerged as a significant area of study in business. Among various aspects, researchers have delved into the precursors of diversification and its impact on financial performance (Mehmood, Hunjra and Chani 2019: 2). Financial management scholars often recommend investing in 10 to 15 securities to harness the benefits of diversification. Recent studies, such as that by Fragkiskos et al. (2014: 10), solidified the advantages of investing in a large number of securities. Manganelli (2010: 213) examined how financial market efficiency influences the diversification of output across industrial sectors and found that financial markets expedite the convergence of sector-specific output allocation toward optimally diversified benchmarks. Investigating The function of global diversification in mitigating systematic risks within financial securities portfolios, Kroch (2010: 21) concluded that international diversification can effectively reduce portfolio systemic risks, fostering relative return stability.

Milholland, Castro-Arellano, Suzán, Garcia-Peña, Lee, Rohde, Alonso Aguirre, and Mills (2018: 168) scrutinized the impact of industrial structure, currency risk, and country-specific factors on currency returns and their implications for international diversification strategies. Their findings suggested that international diversification benefits are primarily influenced by factors specific to individual countries rather than the structure of industries. Wang and Luo's research (2019: 775) focused on the Chinese stock market, revealing that holding one or two stocks subjects investors to substantial negative risk-adjusted returns. Consequently, Chinese investors can significantly benefit from diversification, especially with a longer investment horizon. Investigating international diversification's effects on portfolio risk by examining U.S. stock market indices, Cohen, Joutz, and Loungani (2011: 4865) concluded that diversifying across international stock indices reduces overall portfolio risk. Frahm and Wiechers (2011: 11) conducted an empirical study on diversifying portfolios of risky assets, analyzing monthly return data for the S&P 500 over five decades. Their findings indicated that the average degree of diversification in naively allocated 40-asset portfolios barely exceeded 60%. This suggests that both mutual fund managers and private investors can achieve better portfolio diversification through well-considered asset selection compared to naive allocation.

2.7 Investors' Decision Making

The realm of derivative trading encompasses a range of investment choices, including buying, selling, stock selection, holding duration, and trade size. This discussion focuses on two pivotal decisions within derivatives trading: buying and selling. These decisions are of paramount importance due to their interrelation with other choices and their significant influence on overall investments. Research has revealed that investors who sell assets below their initial purchase price usually anticipate their selling price to exceed other sellers' asking prices. However, the market's correction, alongside investors' expectations, ultimately dictates the selling price. It's noteworthy that investors incurring losses often conduct transactions at relatively higher prices compared to their peers. Notably, Coval and Shumway's study demonstrated that investors' risk propensity in the latter half of trading is influenced by gains or losses experienced in the initial phase, aligning with prospect theory.

Baule and Muenchhalfen's work sheds light on investors' preferred assets for purchase. While selling choices prioritize winning assets, buying decisions are associated with both prior successes and failures. The study suggests that buying choices might be influenced by an attention effect. Faced with an overwhelming array of listed assets, investors often choose assets that capture their attention, often stemming from past performance, whether positive or negative. Importantly, the research establishes that selling decisions are less attention-driven compared to buying choices among individual investors. High-attention assets, such as those with exceptionally high trading activity or abnormally high/low returns, tend to pique investors' interest more for purchasing than selling.

From a behavioural finance perspective, investor behaviours significantly impact both selling and buying decisions, thus affecting overall market returns. Kumar and Goyal's study delves into the influence of behavioural factors and psychological aspects on decision-making, highlighting the link between risk attitude and behavioural choices. This study underscores the departure from purely rational investment decisions when factors such as greed, fear, cognitive dissonance, heuristics, mental accounting, and anchoring become influential. These behavioural elements should be regarded as risk factors when making investment choices. In another exploration, Waweru, Munyoki, and Uliana's survey conducted among institutional investors on the Nairobi Stock Exchange highlights the significant impact of cognitive behavioural factors on the decision-making processes of these investors within the market. These factors encompass representativeness, overconfidence, anchoring, gamblers' fallacy, availability, loss aversion, mental accounting, and regret aversion.

Kirera and Mburugu's investigation aims to unravel the nexus between investor investment decision-making and their rationality within the Nairobi capital market. Findings indicate that economic conditions and frames of reference wield influence over investor behaviours. Malaysian investors exhibit partial rationality in their decision-making. Cianci's experiment involved substituting 78 graduates for real investors, revealing how investors react to negative and positive information presented sequentially or simultaneously. The results illuminated phenomena like multiple loss aversion, loss buffering, and gain savouring. The distinction between current and prospective investors was examined to determine how they assess information related to investments and how their status impacts their assessments.

In a different vein, Usman's study scrutinized the behaviour of investment-oriented business students through the lens of behavioural finance. Herd behaviour emerged as a conspicuous behavioural factor, characterizing the respondents' choices. The research highlighted the notion of "student behaviour," indicative of somewhat irrational decisions shaped by the learning process inherent in business education.

2.8 South African Derivatives Market

Derivatives trading holds significant popularity within the South African market, offering valuable tools to mitigate financial risks and diversify portfolios. An IMF working paper authored by Adelegan (2009: 3) highlights the emergence of the South African derivatives market as a means to engage in self-insurance as a safeguard against unpredictable capital flows and effectively handle associated risks posed by high asset price volatility. The objective was also to bolster the financial system's liquidity, risk management capabilities, and adaptability in the face of globalization. Therefore, the purpose of the African derivatives market lies in addressing the demand for "self-insurance" against unpredictable capital flows and risk management (Adelegan, 2009: 18). The recently enacted South African Financial Market Bill (2012) provides a definition of a derivative instrument as any financial tool or agreement that establishes both rights and obligations. deriving value from an underlying asset or product (Minister of Finance 2012: 8).

The term "derivative" derives from its nature as a financial instrument "derived" from the value of an underlying asset, be it physical or financial. This underlying asset could include equities, equity indices, bonds, foreign currencies, commodities, or even other derivatives (Yano, 2020; National Treasury 2009). The derivatives market provides a platform for trading these abstract products, with the shift towards electronic platforms obviating the need for a physical trading

location (Donohoe, 2015: 76). Derivatives encompass financial instruments whose value hinges on changes in the worth or valuation of underlying assets, such as stocks, bonds, loans, interest rates, currency exchange rates, and other financial instruments (as mentioned by Dodd 2008, Feed and World Bank 2012, Ruiz 2010, Vander Stichele 2010). These agreements come in various formats, including forwards, futures, options, swaps, and various combinations thereof, with the objective of achieving gains from fluctuations in the value of the assets they are based on.

Derivatives can be traded through Over-the-Counter (OTC) channels or organized exchanges, depending on their classification. OTC derivatives involve direct negotiations between two parties without the need for an exchange, while exchange-traded derivatives are standardized products traded on stock exchanges, which contributes to regulatory oversight (as noted by Dodd 2008, Feed n.d., Stulz 2004). The function of derivatives in the recent financial crisis, along with their association with crises like those in Mexico, East Asia, and the euro-zone, has garnered considerable attention. These instruments have been linked to the downfall of notable institutions such as Barings, LTCM, Enron, and Lehman Brothers (Feed and World Bank 2012; Fender and Gyntelberg 2008; Stulz 2004). Despite this, Warren Buffet's perspective distinguishes between OTC and exchange-traded derivatives, implying that the latter pose fewer risks (Rodrigues, Schwarz, and Seeger 2012). OTC derivatives account for a significant share of derivative contracts in developing countries, highlighting potential risks for their financial systems (Mihaljek and Packer 2010: 43).

The intricate nature of derivatives markets makes them inherently risky for the financial landscapes of developing countries (Wahl 2009: 2). Many believe that derivatives hold the potential to foster development in these countries (Feed and World Bank 2012: 2). For instance, derivatives can contribute to stabilizing the economic volatility in developing nations (Tiberiu 2007: 5). Indeed, many emerging nations, including those situated in Africa, continue to grapple with unstable macro-indicators that hinder economic growth and impede progress towards the Millennium Development Goals (MDGs) (Loayza, Rancière, Servén, and Ventura 2007: 2 UNCTAD 2009).

These MDGs consist of a range of development objectives established by the United Nations with a target completion date of 2015, encompassing alleviation of poverty, advancements in education, promotion of gender parity, enhancement of healthcare, and the fostering of environmental sustainability (United Nations Development Group 2003:3–4). Notably, most African countries, except South Africa and North African economies, lack well-established derivatives markets (MFW4A n.d.). The role of derivatives in Africa's financial system is

underscored by the emergence of a commodities and derivatives exchange in Botswana, poised to support pan-African trading (Goromonzi 2010: 11; MFW4A n.d.). Institutionalizing derivatives trading in Africa is expected to deepen financial markets through the introduction of new risk management tools (Bahgat 2002: 5).

Derivatives are anticipated to enhance financial markets, offering advanced price discovery mechanisms, hedging opportunities, and greater investment productivity, leading to heightened economic expansion (as mentioned in Şendeniz-Yüncü, Akdeniz, and Aydoğan 2007: 2). South Africa can pride itself on having the most vibrant and efficiently operating derivatives market on the African continent. This market encompasses a diverse range of products, including forwards, futures, options, and swaps linked to commodities, stocks, interest rates, and foreign exchange (as outlined by the Johannesburg Stock Exchange in available data). Notably, South Africa's agricultural commodities futures market has experienced significant growth and has become an essential risk management tool for regional producers (as indicated by MFW4A in available information).

The development of derivatives in South Africa not only enhances financial access, risk management, and market depth but also aligns with the challenges posed by globalization (Adelegan, 2009: 2). While derivatives markets hold the potential to facilitate effective price discovery and transparency, they also carry new risks that can impact financial systems and economies (Tsetsekos and Varangis, 2000: 88).

Prior to this study, Haiss and Sammer (2010) and Rodrigues et al. (2012: 25) both explored the connection between the development of derivatives markets and economic growth. While Haiss and Sammer (2010: 38) focused on the correlation between derivatives trading and growth in the United States, the studies conducted by Şendeniz-Yüncü et al. (2007: 2), Baluch and Ariff (2007), and Rodrigues et al. (2012: 25) examined various panels comprising both developed and developing countries. Specifically, Rodrigues et al. (2012: 25) investigated the impact of derivatives trading on economic growth and growth volatility across 45 different countries, including South Africa. However, the exploration of how derivatives trading influences economic growth remains insufficient in the context of Sub-Saharan Africa (SSA). Although South Africa was included in the investigations by Rodrigues et al. (2012) and Şendeniz-Yüncü et al. (2007), the connection between derivatives and growth has not been comprehensively studied within an exclusive emerging market framework, especially in any SSA context.

2.8.1 Functions of Derivatives Markets

Derivatives markets operate in a manner that complements capital markets (Dodd, 2008). Currently, many efforts to develop capital markets across Africa have exhibited inefficiencies. Numerous continental capital markets suffer from illiquidity, hampering their capacity to foster substantial economic growth and progress (Ewah, Esang, and Bassey, 2009; Ly, 2011). Despite the prerequisite of liquid underlying markets for the functioning of derivatives markets, derivatives hold the potential to enhance the efficiency and advancement of capital markets. Consequently, it has been recommended that the pursuit of derivatives market development should coincide with that of capital markets, as the evolution of both financial domains would incentivize growth (Chami, Fullenkamp, and Sharma 2009; Dodd, 2008).

2.8.2 The Development of Derivatives Markets on Economic Growth

The study carried out by Vo, Van Nguyen, Nguyen, Vo, and Nguyen (2020: 18) assessed the correlation between derivatives markets and economic growth in a group of countries. They employed the market value of outstanding exchange-traded derivative contracts relative to GDP as a gauge of derivative utilization. Vo et al. (2020: 20) established a positive connection between derivatives markets' development and economic growth, attributed to increased capital formation over time. This finding corroborates the discovery by Şendeniz-Yüncü et al. (2007: 2) that countries with well-operating derivatives markets experience superior growth compared to those lacking such markets. However, Baluch and Ariff (2007: 5) acknowledge that the impact of derivatives markets on economic growth hinges on their utilization, suggesting that derivatives' risk transfer function can contribute to growth. According to Baluch and Ariff (2007: 5), the liquidity of underlying markets stands as the pivotal driver for derivatives market efficacy. Developing countries are therefore advised to launch derivatives products on their most liquid financial markets.

Vo et al. (2020: 26) underline that studies empirically investigating the nexus between financial development and economic growth frequently reveal discrepancies in measurements of economic and financial development, as well as variations in how these measures are interpreted. Hsiao and Tsai (2018: 21), when examining the link between futures markets' existence and economic development in both developed and developing countries, employed the ratio of total value of stock index futures contracts to nominal GDP. They found that countries with medium-sized futures market values relative to their GDPs demonstrated a more pronounced positive correlation between futures market development and economic growth. Conversely, they suggest that the influence of futures market development on economic growth is less significant for countries with large or small futures market values

relative to their GDP. This underscores the importance of well-functioning financial markets for driving economic growth (Hsiao and Tsai, 2018: 21).

In a different vein, Haiss and Sammer (2010: 39) utilized the Bank of International Settlement (BIS) data on outstanding derivatives as a measure of derivatives usage. In contrast, Rodrigues et al. (2012: 25) employed a dummy variable to signal the institutionalization of derivatives trading. Haiss and Sammer (2010: 38) investigated the relationship between derivatives markets and the economic growth of the United States, revealing a weak connection between the two. Conversely, Rodrigues et al. (2012: 26) found that the presence of derivatives markets significantly contributed to per capita GDP growth in specific countries. Despite these divergent findings, both Haiss and Sammer (2010) and Rodrigues et al. (2012: 25) suggest pathways through which derivatives markets influence the economic development of nations. Interestingly, Haiss and Sammer (2010: 39) pose the question of who reaps the benefits of the welfare generated by derivatives. hinting that financial intermediaries like banks absorb the welfare effects of derivatives trading.

This aligns with Wahl's (2009: 1) contention that most derivatives instruments emerge from the prevailing system of deregulated international markets, often referred to as the "casino economy." This system, according to Wahl (2009: 2), primarily advocates for "profit/wealth maximization at all times," impeding meaningful development progress and exacerbating social inequalities. Wahl (2009: 2) underscores that only a minute portion of Africans, around 87,000 individuals, Profit from continent’s engagement with the worldwide market. As a result, Wahl (2009: 1) advocates for putting an end to this "gambling house." Nevertheless, derivatives persist as firmly entrenched instruments for financial and investment management in numerous emerging markets, such as South Africa. (Schwegler 2010). Agricultural commodities producers, benefiting from derivatives, effectively allocate resources for production, yielding positive payoffs (Gemech, Mohan, Reeves, and Struthers, 2011).

Derivative instruments are central to South Africa's financial landscape, prompting experts within the country's financial services industry to encourage increased usage. Numerous local and foreign institutional investors are already engaged in South African derivatives markets (Schwegler, 2010). In 2008, the overall derivatives trading activity in South Africa surged by nearly 56% compared to 2007 (Futures Industry Association, 2009). During the same period, the Johannesburg Stock Exchange (JSE) emerged as one of the world's top ten derivatives exchanges, boasting the largest number of single stock futures contracts traded globally. The JSE conducted the trading of 431.2 million single stock futures in 2008, marking a 62.4%

upswing from the previous year's figures (Futures Industry Association, 2009; Schwegler, 2010).

2.8.3 The Impact of Derivatives Trading on Economic Volatility

Economic instability can exert negative repercussions on a country's growth trajectory through various channels. In fact, uncertainties concerning the economic landscape can significantly dampen investors' readiness to undertake risks. This includes the capacity and inclination of banks to extend loans, as well as the willingness and ability of businesses to invest. In a similar vein, just as economic instability might dissuade companies from making investments, market volatility could discourage individuals from investing in their own human capital. As human capital declines, unemployment spreads and becomes detrimental to both growth and overall welfare (Stiglitz et al. 2006). The exploration of derivative trading's stabilizing influence involves examining its impact on volatility patterns. It's conceivable that derivatives trading could affect the volatility of underlying spot markets by either stabilizing and reducing their volatility, or potentially destabilizing and amplifying their volatility (Ray and Panda, 2011: 120).

A study conducted by Tiberiu (2007: 5) delved into the impact of utilizing derivative products on the macroeconomic volatility of countries that are members of Euronext, excluding Portugal. Tiberiu (2007: 5) posits that the utilization of derivative products yields a positive effect in curbing the volatility of investments and commercial transactions. Consequently, he acknowledges a significant correlation between the volume of traded derivative products in the market and the mitigation of economic instability in a country. Following this, Rodrigues et al. (2012: 25) briefly explored the consequences of the embedding of derivatives markets within the context of GDP fluctuations. Although a more thorough exploration of this vital facet of the connection between derivatives exchanges and volatility in economic growth is a subject for future research, Rodrigues et al. (2012: 25) do imply that the establishment of derivatives exchanges could potentially contribute to reducing GDP growth volatility.

2.9 Derivative Trading

In South Africa, most derivative trading occurs in two forms – through a broker, or over the counter. Over the counter, transactions are not regulated in South Africa. An investor can gain entry to the market through two methods: either via online trading or by contacting a financial institution or another entity over the telephone. Investors can use derivatives to hedge their portfolios. i.e., reduce risks by safeguarding a specific stock portfolio from a decline in market prices (Hassan, 2013: 11). The advantage for the investor is that the JSE regulates the trade. The investor, as a result, it possesses a degree of safeguarding against fraudulent activities

and unwarranted financial losses. Derivative contracts are traded either within an organized derivatives exchange or in the Over-The-Counter (OTC) markets (Srivastava, 2010: 11).

2.9.1. Exchange-Traded Derivatives Markets

A derivatives exchange denotes an orderly trading venue that formalizes and safeguards the trading of derivatives contracts, thus reducing the likelihood of defaults on transactions initiated by market participants. It functions to enhance market liquidity, facilitating smoother transactions between willing buyers and sellers (National Treasury, 2009: 18-19). Within such an organized exchange market, a derivatives exchange offers crucial features, including standardization and interchangeability, a centralized trading platform, management of clearing, settlement, and counterparty credit risk, as well as the imposition of restrictions on allowable open interest and mechanisms to curb excessive fluctuations during times of market turbulence (National Treasury, 2009: 18–19).

2.9.2 OTC Derivatives Markets

OTC markets lack the organization seen in traditional exchanges, as OTC trading relies on advanced telecommunications networks where market makers, rather than exchanges, offer liquidity to facilitate securities transactions among investors (Mishkin and Eakins, 2012: 358). Consequently, OTC derivatives are privately negotiated between the parties involved (National Stock Exchange of India, 2009). When contrasting OTC derivatives markets with their on-exchange counterparts, certain distinctive features emerge (Chavan, 2010; National Stock Exchange of India, 2009; Schinasi, Craig, Drees, and Kramer, 2000). Firstly, the decentralization of counterparty (credit) risk management within individual institutions is notable. There are no established centralized limits for individual positions, leverage, or margining. Secondly, there is a lack of formal rules for sharing risks and responsibilities. The absence of mechanisms to ensure market stability, integrity, and protection of collective market participant interests is also evident. Generally, OTC contracts lack regulatory oversight from a governing body.

The participants in derivatives markets are varied and encompass the following categories (Zimmermann and Gibson 1996; Stulz 2005). First, institutional investors, such as non-financial corporations, use derivatives to mitigate earnings fluctuations and reduce tax obligations. Second, banks and other financial intermediaries, while often serving as market makers for certain derivatives, also adopt positions to manage risks. Third, individuals are drawn to derivatives due to the potential for substantial rewards with relatively modest capital investments. In summary, the global derivatives market is progressively extending beyond the

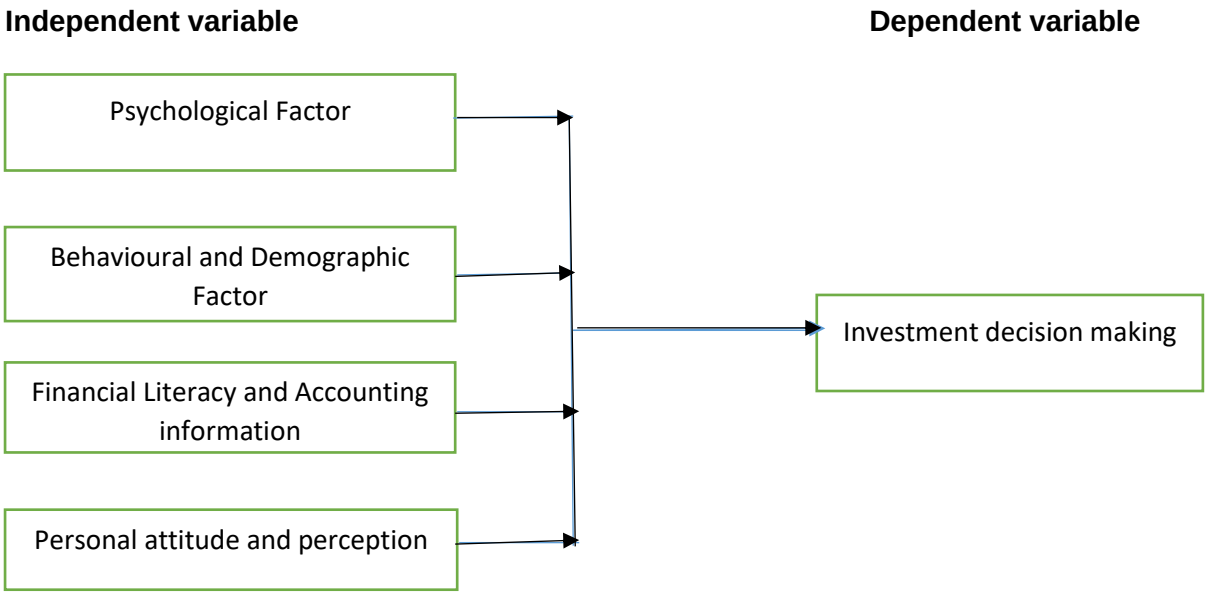
boundaries of developed economies. Developing countries worldwide are establishing local derivatives exchanges to bolster their competitiveness on the international stage. Derivatives enable countries, both developed and developing, to enhance economic performance by expanding their financial and risk management strategies. Therefore, derivatives markets play a pivotal role in the development of nations that have adopted them.

In Africa, the derivatives trend has yet to significantly impact most countries. Sub-Saharan African nations lack the necessary infrastructure for derivatives trading. Efforts are in progress to implement derivatives in these nations, aiming to foster broader continental development. Typically, derivatives and capital markets evolve in tandem; thus, derivatives could potentially stimulate the expected growth of African capital markets. The convergence of these markets could mutually reinforce faster and more substantial economic expansion across the continent. Moreover, domestic derivatives markets are likely to exert a positive influence on economic stability in these countries.

2.10 Conceptual Framework

The conceptual framework outlined the factors related to the study focus and the relationship between the independent. (Psychological factor, Demographic factor, financial literacy and accounting information, Personal attitude, and perception) and the variable under examination pertaining to investment decision-making within the derivative market in Johannesburg, South Africa. The study delved into how psychological factors exert both direct and indirect influences on investment decision-making, as the choice to invest is a blend of rational and irrational elements rooted in an investor's mindset. These variables can independently or collectively impact investment decision-making. Each variable's indicator distinctly showcases the extent to which it influences the process of investment decision-making.

Figure 2.1 Conceptual framework



Source: Researcher's Own Construct

Empirical Review

The process of human decision-making is intricate, influenced by a myriad of factors that shape the paths of action leading to distinct outcomes. This process can be perceived as an interplay between a problem requiring resolution and the individual tasked with solving it, all within a specific context (Narayan and Corcoran-Perry, 1997: 46). It's an art in itself to navigate complex scenarios that extend beyond personal resources and are impacted by a multitude of influences. The Prospect Theory and Theory of Planned Behaviour (TPB) were used to develop the hypotheses in the study. Investors exhibit diversity in various dimensions due to factors such as psychological attributes, demographic characteristics, educational background, gender, age, and ethnicity. Hence, achieving uniformity in decision-making becomes nearly impossible, given the varying importance of these factors. As outlined by Gill and Bajwa (2018:9), numerous psychological factors, including cognitive biases, wield sway over investors' behaviour in the financial market. These biases exert varying degrees of influence, with some playing a major role and others exerting more subtle effects on investor conduct. Gill and Bajwa (2018: 9) also note that these biases are sometimes labelled as heuristics (rule-of-thumb guidelines), beliefs, judgments, or preferences, and are categorized along cognitive or emotional lines by different scholars.

This study focuses exclusively on a behavioural factor known as psychological factors, alongside demographic factors, financial literacy, accounting information, personal attitudes, and risk perceptions, as underscored by Kahneman and Tversky (1979: 266), as pivotal in elucidating investors' decision-making within the derivative market. Naturally, a multitude of factors bear upon investors' decision-making processes, this research primarily homes on the key factors central to its objectives. The following section delves into an exploration of these central factors.

2.11.1. Psychological Factors and Investors' Decision

In the research conducted by Lim (2012: 4), an investigation was carried out into the correlation between psychological biases, specifically focusing on overconfidence bias, conservatism bias, herding behaviour, and regret, and the decision-making patterns of investors within the Malaysian stock market. The outcomes revealed that overconfidence, conservatism bias, and regret displayed notable positive effects on investors' decision-making processes. Interestingly, herding behaviour, on the other hand, was identified as lacking any influence on investors' decision-making. The majority of the findings from this study were in line with earlier research conducted in various other countries. Luu (2014: 8) conducted an analysis of the behavioural tendencies of individual investors in the Ho Chi Minh stock market. The study revealed that traits such as overconfidence, anchoring, herding, loss aversion, and regret aversion exerted a moderate influence on these investors, whereas market-related factors demonstrated the most substantial impact on their decision-making processes.

In the Islamabad Stock Market, Atif Kafayat (2014: 95) explored the potential influence of self-attribution bias, overconfidence, and over-optimism bias on investors' decision-making processes. The study's findings indicated a negative correlation between all these mentioned factors and investors' decision-making. Meanwhile, Pourjiban, Setayesh, and Janani (2014: 6) focused their assessment on the impact of investors' overconfidence bias within the Tehran Stock Exchange Market, and they discovered a significant connection between overconfidence bias and investment decisions. Qadri and Shabbir (2014: 40) conducted an empirical study in the Islamabad Stock Exchange, aiming to investigate the influence of overconfidence and the illusion of control on investors' decision-making. Their results revealed that overconfidence and the illusion of control had a positive and significant impact on investors' decision-making. Tripathy (2014: 70) delved into the role of psychological biases in the cognitive decision-making process of individual investors, particularly in the context of the Bhubaneshwar Stock Exchange. The outcomes indicated that these individuals exhibited susceptibility to psychological biases, including overconfidence, anchoring, regret, and loss

aversion, all of which had an effect on their decision-making. Lastly, Ton and Dao (2014: 16) argued that overconfident investors tend to believe they can achieve more significant gains in the market by relying on their emotions, even though this belief is unfounded.

In their research, these authors also discovered that a significant 70% of investors in the Vietnamese stock exchange exhibit overconfidence in their ability to manage their portfolios. Interestingly, even those investors who hold a self-assured belief that they possess exceptional knowledge about the opportune moments for trading and making quick returns from the stock market often find themselves unable to outperform the market, contrary to their presumptions. Babajide and Adetiloye (2012: 221) undertook an empirical investigation into the behavioural biases of investors in the Nigerian securities market. The study revealed compelling indications of the presence of overconfidence, loss aversion, framing, and status quo bias among Nigerian investors. Furthermore, a modestly negative correlation between these biases and stock market performance was established. As per Babajide and Adetiloye (2012: 221), behavioural finance illuminates how our human psychology shapes our financial choices, revealing the recurring and foreseeable errors that individuals tend to make when engaging in investments. According to Kliger, Van den Assem and Zwinkels (2014: 423), ‘behavioural finance entails examining how psychology impacts the actions of financial professionals and, consequently, the outcomes in markets. It constitutes the domain of knowledge that encompasses theories and experiments centered on the outcomes of investors' choices rooted in intuition or emotions. Shefrin and Statman (2011: 42) define behavioural finance as ‘a rapidly growing area that deals with the influence of psychology on the behaviour of financial practitioners.

Subash (2012: 39) In a survey conducted across various states in India, an overconfidence bias was identified. It was observed that investors hailing from the southern state of Kerala in India are particularly susceptible to overconfidence in their belief that they can surpass market performance. Nguyen and Pham (2021: 7) state that limited attention and overconfidence cause investors naivety which results in the strategic incentives of informed market participants. Ghani Dehkrdi, Jafari Dehkordi and Peikfalak (2020) studies shown that most people tend to be overconfidence, so they frequent investment and are confident about the timing of entering and leaving their market positions. Likewise, Prosad, Kapoor, Sengupta, and Roychoudhary (2017: 1312) Investigated overconfidence and disposition effects in the Indian stock market between the years 2006 and 2013. The study utilizes bivariate and trivariate vector auto regression (VAR) models, along with associated impulse response functions, to analyze the Indian equity market, using data from the NIFTY 50 index and individual security returns. The study yields three significant conclusions. First, it identifies the

existence of biases, including overconfidence and the disposition effect, within the Indian equity market during the sample period. Second, the study reveals that the influence of these biases can be distinctly observed in the behaviour of 20 specific companies within the index. Lastly, it underscores that among these biases, overconfidence holds a more prominent role.

Lowies et al. (2016: 53) discovered that the influence of anchoring and adjustment significantly shapes the decisions made by property fund managers. Ishfaq and Anjum's study (2015: 4) suggested a positive impact of anchoring on risky investment choices. Abraham et al.'s research (2014: 217) demonstrated that the presence of anchoring and adjustment bias affects the investment decisions of listed property fund managers in South Africa, potentially leading to judgment errors and missed opportunities for gains. Likewise, Murithi (2014: 65) identified that anchoring plays a role in influencing the decisions of individual investors in Kenya. Singh and Sikarwar (2015) study on regret aversion identifying disappointment as a crucial element, investors tend to lean towards stocks that offer dividends, as such dividends act as a safeguard against unfavorable outcomes. The majority of prior research has highlighted the positive and significant influence of psychological factors on investors' decision-making. This perspective is evident in studies conducted by Qadri and Shabbir (2013), Qureshi, Rehman, and Hunjra (2012), Lim (2012), Bashir et al. (2013), and Wamae (2013). However, it's worth noting that the latter three studies also found instances where specific psychological factors had no noteworthy impact on decision-making. Up to this point, there is no established evidence indicating that psychological factors exert a negative and significant influence on investors' decision-making.

Gigerenzer and Gaissmaier (2011: 468) asserted, in their study, that cognitive and emotional biases hold a significant position in the process of decision-making. They posited that (a) both individual investors and organizations frequently rely on basic psychology in a flexible manner and (b) disregarding certain information can lead to more accurate judgments compared to incorporating and weighing all available information. Brighton and Gigerenzer (2015: 1773), along with Todd and Brighton (2016: 15), maintained that humans are not always compelled to employ intricate cognitive strategies to achieve impartial decisions. In specific contexts, psychological factors (both cognitive and emotional) suffice for making sound decisions. This implies a favorable correlation between psychological aspects (both cognitive and emotional) and financial choices, including those related to investment decision-making. Additionally, Goetzmann and Peles (1997: 206) uncovered corroborating evidence supporting the substantial influence of psychological factors (both cognitive and emotional) in investment decision-making. They concluded that past experiences shape future choices. Hence, this study proposes the initial hypothesis as stated below.

H_1: Psychological Factor influences investment decision making.

2.11.2. Behavioural and Demographic Factor and Investment Decision

Examining the impact of behavioural elements on investment decision-making performance in the Colombo Stock Exchange, Kengatharan and Kengatharan (2014: 13) conducted a study. Commencing with established theories in behavioural finance, the study formulated hypotheses that were subsequently scrutinized. These hypotheses were put to the test through a questionnaire disseminated to individual investors active in the Colombo Stock Exchange. Employing the Statistical Packages for Social Science (SPSS), the collected data underwent analysis, revealing that four behavioural factors—namely, Herding, Heuristic, Prospect, and Market—directly influence the investment choices of individual investors. In a parallel investigation, Anthony and Joseph (2017: 110) delved into the sway of behavioural elements on investment decisions. The study considered five specific behavioural factors—overconfidence bias, representative bias, regret aversion, mental accounting, and herd behaviour—as influencing investor behaviour. The research focused on a sample of investors from Kerala, utilizing the analytical hierarchy process (AHP) methodology to gauge the strength of these behavioural factors in impacting investment decisions. The findings indicated that overconfidence bias and regret aversion carried significant influence among Kerala investors, while herd behaviour played a comparatively less substantial role in shaping their decision-making processes.

Raut, Das, and Mishra (2018: 27) delved into the behaviours exhibited by individual investors participating in the Indian stock market. To analyze the data collected from 396 individual investors across India, this study employed structural equation modeling (SEM). The findings indicated that investors are significantly influenced by factors such as herding, information cascades, anchoring, representativeness, and overconfidence, while contagion did not yield a significant result. In contrast, Paul and Bajaj (2012: 2279) determined that the majority of existing equity investors possess a moderate level of awareness regarding the equity market. Furthermore, they observed that gender and age of existing equity investors were not significantly correlated with their level of awareness about the equity market. However, there was a noteworthy association between occupation, income, and the level of awareness concerning the equity market. Consequently, the study concluded that the decision of retail investors to invest in the stock market is influenced by their occupation and income. To encourage greater participation of retail investors in the equity market, it is crucial to enhance

awareness among them. Nevertheless, demographic factors continue to exert a significant impact on investors' decisions.

Hifza et al. (2011: 150) conducted a study that highlighted the influence of age on risk-taking attitudes, both directly and indirectly. This phenomenon regarding the impact of age on investors' risk tolerance has been reaffirmed by Kabra, Misha, and Dash (2010: 311), who explored the factors shaping investor behaviours in relation to risk across various age groups and genders. Kabra et al. (2010: 311) discovered that both age and gender are determinants of an investor's propensity for risk-related investments. Similar trends have been noted in other research, indicating a negative correlation between age and risk-taking behaviour (e.g., Garling et al. 2009; Gilliam, Chatterjee, and Zhu 2010; Faff, Hallahan and McKenzie 2009; Hira et al. 2007; Sadiq and Ishaq, 2014). Rana, Murtaza, Noor, and Rehman (2011: 70) proposed that individuals with higher levels of financial education exhibit more rational and efficient risk preferences, perceiving risk through a logical lens compared to those lacking such education. This idea aligns with the viewpoint of Abreu and Mendes (2010), who argued that inadequate financial education can lead to suboptimal financial choices.

Gärling et al. (2010: 27) emphasized that individuals without a clear understanding of the risks associated with financial products tend to invest in products that do not match their financial capabilities. Multiple studies have investigated the influence of education on investment decision-making (e.g., Courchane and Zorn 2005; Farzana et al. 2012; Grable and Lytton, 1998; Hallahan et al. 2003; Sung and Hanna 1996). For instance, Farzana et al. (2012: 21) delved into demographic factors shaping investment choices and identified education and occupation as pivotal influencers.

Moreover, the study by Alquraan, Alqisie, and Al Shorafa (2016: 162) focused on the impact of behavioural finance elements on the investment choices made by individual stock investors within the Saudi Stock Market. Utilizing primary data and employing methods like Multiple Linear Regression and ANOVA, the study explored the significance of factors such as loss aversion, overconfidence, risk perception, and herd behaviour. The findings indicated that behavioural finance factors had a substantial impact on individual investors' stock investment decisions, with loss aversion, overconfidence, and risk perception holding significant sway. However, the effect of herd behaviour was deemed insignificant. Demographic variables like gender, age, income, and experience did not significantly differentiate investor decisions, except for education, which was found to be a significant influencer. Consequently, the hypotheses were proposed as follow:

H2: Behavioural and Demographic factor influences investment decision making.

2.11.3. Financial literacy and accounting information and investment decision

Lodhi (2014: 70) asserts that there exists a positive correlation between financial literacy and risk-taking, demonstrating that an individual's financial literacy enhances their capacity for taking risks. In his study conducted in Karachi, Pakistan, Lodhi (2014: 70) examined the influence of financial literacy, experience, utilization of accounting information, the significance of financial statement analysis, and the age of investment decisions on individuals. His empirical findings emphasized the significance of financial literacy and accounting information in reducing information asymmetry, thereby enabling investors to engage in more daring investments.

According to Seth, Patel, and Krishnan (2011: 2), an investor must possess financial literacy to comprehend the importance of budgeting, effective cash flow management, and the allocation of assets to attain financial objectives. As Kashif Arif (2015: 2427) notes, their study scrutinized the financial literacy levels of individual investors and the factors impacting their investment decisions. The findings revealed that the financial literacy score fell below 50%, indicating a low level of financial literacy. The anticipated sufficient level of financial literacy, set at a minimum of 50%, was not met through the analysis. Therefore, it can be concluded that the financial literacy of individuals at KSE (Karachi Stock Exchange) falls below the expected standard.

Botha (2013: 109) undertook an analysis of the financial literacy levels among final-year diploma students across various academic disciplines. The investigation specifically examined students pursuing diplomas in finance-related fields as well as those in non-finance-related fields. Employing a quantitative research methodology, the study employed self-administered questionnaires to collect data through a survey. The research revealed that final-year diploma students exhibit a limited degree of financial literacy. Notably, students in finance-related programs demonstrated slightly better performance than their counterparts in non-finance disciplines. Among the demographic variables, language and funding source (government or family-paid) were identified as the two factors influencing the extent of financial literacy.

In a parallel vein, Louw, Jaco, and Merwe (2013: 11) conducted an assessment of the financial literacy requirements among third-year students at a South African university. The study encompassed two primary facets: evaluating components of students' socioeconomic surroundings and their familiarity with financial behaviours and appraising their personal financial knowledge. The participant pool comprised 424 students from faculties including Arts,

Economic and Management Sciences, and Natural Sciences, who completed the administered questionnaires. The findings indicated that while students had limited familiarity with financial practices, they displayed a commendable level of proficiency in general financial literacy questions. This trend could be attributed to the fact that 60% of respondents hailed from the Faculty of Economic and Management Sciences. However, the study also identified notably deficient knowledge levels, ranging from low to extremely low, pertaining to financial planning and investment strategies, banking and tax-related issues, and legal concerns. Importantly, the outcomes of this study align with the conclusions drawn by Kotze and Smit (2008: 40).

Lusardi and Mitchell (2011: 514) developed a tool for assessing financial literacy, with a primary focus on understanding where individuals obtain the information, they use for making financial decisions and how they plan for retirement. This tool also evaluates an individual's knowledge and comprehension of financial literacy concepts and principles crucial for effective financial decision-making. Additionally, Lusardi and Mitchell (2011: 45) explored respondents' risk preferences and their ability to differentiate between varying levels of risk concerning expected returns.

Financial literacy and knowledge indicators can serve as inputs for models centered on financial education, potentially elucidating differences in financial outcomes such as savings, investment, and debt behaviour (Lyons, Yunhee, and Erik 2006: 121). Dharmaja, Gnani, Ganesh, and Santhi (2012: 2249) concluded that a significant majority of respondents are influenced by accounting information from companies, with recommendations being the least influential category. Elankumaran and Ananth (2013: 149) conducted an investigation and identified the main influential factors, which include information asymmetry, objective knowledge, high returns, and low risk. Al-Tamimi and Al Anood Bin Kalli (2009: 503) assessed the financial literacy level of individual investors in the UAE and the factors impacting their investment decisions. Their findings revealed that financial literacy in the UAE falls short of the necessary level. Although UAE investors display relatively good knowledge about the benefits of diversification, they exhibit lower knowledge levels regarding the types of financial market indices in the UAE.

Frydman, Barberis, Camerer, Bossaerts and Rangel (2014:910) undertook an empirical survey of the individual investor behaviour. The research employed various variables, including accounting information, subjective/personal factors, neutral information, advocate recommendations, and personal financial needs. The study aimed to determine the factors that exert significant influence on investors and those with the least impact. The findings

revealed that accounting information significantly influences investors, while personal financial needs have the least impact.

According to Baker and Ricciardi (2014), investors primarily prioritize expectations about the future, giving particular attention to earnings projections and historical data. Conversely, research conducted by Lee and Tweedie (2020) exposed the challenges the general public faces in comprehending financial reporting within the corporate sector. Rastogi (2014: 88) provided evidence indicating that individuals predominantly gauge risk using measures such as price and earnings volatility. In contrast, Ramya and Bhuvaneshwari (2017: 64) compared the performance of individuals with that of professional fund managers and noted that the former exhibit significant skill in their investment decision-making.

Ikeobi and Arinze (2016: 148) characterized individuals as "investors" rather than "traders," emphasizing their long-term orientation and limited interest in short-term gains. Furthermore, Baker and Ricciardi (2014) highlighted that investors primarily rely on fundamental or technical analysis as their primary source of information. Consequently, the study concluded that financial literacy enables investors to comprehend the received accounting information and utilize it effectively for investment purposes.

H_3: Financial literacy and accounting information influences investment decision making.

2.11.4. Attitude and risk perception and investment decision

Ainia and Lutfi (2019: 410) conducted a study aimed at investigating the relationship between investors' risk perception and their decision-related attitudes, which provide insights into their preferences for perceived risk across a series of decision-making scenarios. The authors also sought to identify the factors influencing these choices, which, in turn, impact risk perception. In a similar vein, Deb and Singh (2018: 410) posit that risk perception plays a pivotal role in shaping behaviour concerning potentially hazardous risk sources and their consequences. They observed that the connection between risk perception and behaviour arises from the fact that the same predictor variables influence both of these factors. Holzmeister, Huber, Kirchler, Lindner, Weitzel and Zeisberger (2020: 3980) Sought to elucidate risk perception by delving into the risk landscape through a multifaceted lens encompassing instinctive and intricate decision-making processes, personal expertise, and environmental information assimilation. The study directed its attention towards risk perception within the realm of behavioural finance, adopting an approach that scrutinizes the behavioural facets of risk assessment through the conduits of laboratory experiments and questionnaire instruments. Moreover, the author

underscored the role of risk tolerance in shaping perception, noting that investors' comfort levels with their investments are influenced by their perception of risk. Deb and Singh (2017: 99) proposed that risk perception depends on past experiences where the author concluded with an observation where the loss of an individual visualized more on pessimistic which is the behaviour of availability bias.

Riaz, Hunjra and Azam (2012: 791) revealed the importance of psychological factors which affect investment decision-making by mediating the role of risk perception. The authors also concluded that investors' behaviour depends on the available information and how much the investors are prone to taking risk while making decisions. Sachse, Jungermann and Belting (2012: 440) Examined risk perception as akin to an investment commodity, encompassing the inherent attribute of risk across all investment alternatives, with a significant number of investors asserting their lack of awareness concerning these risks during their investment deliberations. Additionally, Subash (2012: 3) scrutinized the influence exerted by emotions such as fear, greed, and anticipation on the landscape of investment decisions. Where the author also tried to show how psychological factors affect decision-making under uncertainty and concluded that the degree of baseness separated the behavioural pattern of young and experienced investors. When financial literacy is linked to an individual's subjective norms and financial perceptions, including attitudes such as risk preferences, social preferences, and time preferences, it is expected to influence their financial behaviour. The intention behind financial behaviour represents the final stage in one's financial conduct, as noted by Ajzen (2011: 1113).

As outlined by Kennedy (2013: 103), these approaches highlight those changes in behaviour stem from a combination of attitudes, social norms, perceived behaviour control, and behavioural intentions. The objective of offering financial literacy is to assist individuals in cultivating positive and advantageous financial behaviour, a concept aligned with Ajzen's Theory of Planned behaviour. This model acknowledges that knowledge and behaviour can potentially influence each other through an underlying and unobserved feedback mechanism (Ajzen, 2011: 1113). For instance, financial knowledge acquired through experience may become intertwined with future behaviour via attitudes and perceptions. The study suggests that there is an impact of personal attitude and perception on investors' investment decisions.

H_4: Investors Attitude to Risk perception influences investment decision-making.

2.11.5. Risk Minimisation and Return Maximisation

Risk can be managed by diversification of the portfolio. Diversification stands as a strategy geared towards mitigating risk by distributing investments across a wide array of asset categories (Shalka, 2011: 19). Through diversification, the aim is to establish a scenario where, at any given moment, the value of certain holdings could decline while others might rise, resulting in an overall stable position. The objective of diversification is to alleviate the impact of unsystematic risk occurrences within a portfolio, effectively leveraging the positive performance of certain investments to offset the negative performance of others. This underscores the necessity for securities in the portfolio to exhibit imperfect correlation for the advantages of diversification to materialize. In general, theories and frameworks related to portfolio optimization can be applied both at the level of individual assets and asset classes, and these models are not limited to particular types of investors. However, the practice of achieving diversification through portfolio optimization has predominantly been embraced by asset managers rather than the average individual investor. It is commonly observed that individuals tend to invest in assets with which they are highly familiar. To illustrate, Diyarbakirlioglu (2010: 77) conducted an investigation into the domestic ownership of the world's five largest stock markets and discovered that individual investors often do not engage in international diversification. Harelimana (2017: 19) with reference to a study titled "The Influence of Stock Diversity on Mitigating Investment Risks," Allah (2009) aimed to discern various stock categories, assess the role of the Khartoum market in providing investors with informative cues for prudent decision-making, and ascertain the risks inherent in financial investments. The primary objective was to investigate the role of stock diversity in risk reduction. The study concluded that a negative correlation exists between diversification and risk levels.

In the same manner, Tang (2004: 157) found that naïve Diversification has been demonstrated as effective in risk reduction. A study by Ahuja (2015: 111) revealed that to eliminate 95% of diversifiable risk on average, a portfolio size of 20 is required from an infinite stock population. Adding 80 more stocks (total of 100) reduces an additional 4% of risk. While this relationship remains consistent across different investment horizons and market conditions, the number of stocks needed for the same risk reduction varies based on population size. In a separate investigation, Zulkifli, Basarudin, Norzaid, and Siong (2010: 30) examined the optimal number of stocks for diversification. Utilizing Ahuja's simplified approach, they found that 13 stocks suffice for a well-diversified portfolio, supporting the notion that controlled diversification reduces unsystematic risk while aiming for high returns.

Berger, Hassan, and Zhou (2010: 32) undertook research focused on Russian banks from 1999 to 2006, aiming to analyze the connection between diversification strategies and the risk-

return trade-off in the banking sector. They discovered that the relationship between bank performance and diversification strategies is non-monotonic, suggesting that the performance of banks is not linearly linked to their diversification approach. Additionally, the influence of focus indices on bank performance was found to be nonlinearly connected to risk levels and foreign ownership. Their study's conclusion concurs with the idea that diversification involves spreading investment across multiple assets, companies, and markets to mitigate risk. It also aligns with the notion that investors gain advantages from diversification when their investments are not perfectly positively correlated. Furthermore, the study agrees that diversifying within the same industry may not reduce risk as effectively as diversifying across different industries. Lastly, the researchers support the idea that diversifying across various assets results in a more diversified portfolio than concentrating investments in a single asset.

2.12. Research Gaps

Substantial various research studies have delved into investors' behaviour, particularly concerning the factors that influence their decisions within stock markets (Aregbeyen and Mbadiugha, 2011; Shiller, 2000; Shleifer, 2000). These investigations have demonstrated the intricate interplay between financial judgments and both internal and external behavioural facets (Jamshidinavid et al., 2012: 44). Beyond psychological and demographic factors, external elements such as social, cultural, political, environmental, and ethical factors also play a pivotal role in shaping investors' financial choices (Byrne and Brooks, 2008; Floros, 2008; Kliger and Levy, 2008; Lepori, 2009; Shive, 2010). Aregbeyen and Mbadiugha's study (2011: 208), for example, scrutinized multiple social, economic, psychological, and cultural aspects influencing Nigerian capital market investors. They found that while all factors exerted an influence on investment decisions, social and economic factors held the greatest impact, thus highlighting the multifaceted nature of these determinants.

Similarly, Ton and Dao (2014: 125) examined psychological factors' impact on investor decision-making in the Vietnam Stock Exchange, identifying five factors with significant decision-related effects. Yet, comprehensive exploration of decision-making in emerging economies remains scarce. For instance, Kouseret et al. (2012: 17) scrutinized behavioural influences on investors in Pakistan, while Kadariya (2012: 19) investigated Nepali stock market investors. In Turkey, Kiyilar and Acar (2009: 56) explored behavioural influences, while Baghdadabad et al. (2011: 11085) studied Malaysian investors. Moreover, Yahyazadehfar et al. (2011: 648) investigated factors impacting Iranian stock exchange decisions, revealing political, psychological, economic, and internal factors' varied influences. Similarly, Alquraan,

Alqisie, and Al Shorafa (2016: 162) analyzed Saudi investors' stock decisions, and Fares and Khamis (2011) studied Jordanian investors.

Research on investors' behaviour spans various countries, including Sri Lanka (Cooray, 2003), Bangladesh (Rashid and Nishat, 2009), Greece (Merikas et al., 2008), Iran (Masomi and Ghayekloo, 2011), Pakistan (Kaleem et al., 2009), and India (Geetha and Ramesh, 2012; Jain and Mandot, 2012). In South Africa, studies on psychological factors in derivatives investment remain limited, with a focus on risk management rather than the derivative market itself (Dickason, 2017: 26). This study, however, emphasizes the significance of psychology factors, including overconfidence, anchoring, regret aversion, representativeness, and accounting information, in the process of making investment decisions. Furthermore, it delves into the South African context, particularly the Johannesburg Stock Exchange, filling a research gap in exploring these factors' combined influences.

2.13 Chapter Summary

This section has delivered an in-depth exploration in the realm of behavioural finance, providing insight into the intricate interplay of psychological and behavioural factors that impact investors' decision-making processes. This groundwork paves the way for the establishment of the theoretical framework and the subsequent development of hypotheses outlined in Chapter Three. The segment extensively surveyed the literature, with a particular emphasis on how psychological factors shape investors' choices. Subsequently, the discussion centered on scrutinizing the primary behavioural elements that have demonstrated their sway over investors' decision-making tendencies. These factors were categorized into two groups: internal factors and external factors. Internal factors encompass psychological and demographic elements, while external factors encompass social, cultural, political, and environmental aspects. It has been established that all these factors influence investors' decision-making. But in this study, the factors were narrowed down to behavioural (psychological) factor which is at the centre of the study.

Numerous empirical investigations have yielded substantial evidence illustrating the impact of these elements on investors' conduct. Research has indicated that cognitive and emotional elements such as overconfidence, representativeness, herding behaviour, anchoring, cognitive dissonance, aversion to regret, and mental accounting, financial literacy, and accounting information collectively shape investors' decision-making dynamics (Mitteness, Sudek and Cardon, 2012; Reymen, Andries, Berends, Mauer, Stephan and Van Burg, 2015; Haasnoot, van Aalst, Rozenberg, Dominique, Matthews, Bouwer, Kind and Poff, 2020).

Furthermore, additional research has demonstrated that factors like age, educational background, and income levels, family size, and gender also contribute to the decision-making process (Beugelsdijk and Frijns, 2010; Chang et al., 2007; Kourtidis et al., 2011; Lee and Selart, 2014; Ozorio et al., 2013). The study also reviews the literature on portfolio diversification as a technique to minimise investment risk and maximise the expected return of individual investors. The chapter explores and review the South African derivative market, its functions and its impacts on economic growth, its impacts on economic volatility and how it's been traded.

The next chapter discusses the theoretical review and hypothesis development of the study which is used in this research.

CHAPTER THREE
THEORETICAL REVIEWS AND FRAMEWORK

3.1. Introduction

This chapter explores and reviews various financial theories related to the financial market and an examination of behavioural finance primarily inquiries into the factors that the research aims to explore. To comprehensively address this, it's essential to review conventional finance theories and their fundamental assumptions. This step holds significance as it serves as the starting point upon which behavioural finance has been constructed by challenging the core assumptions of these theories. Subsequently, the study will delve into the scrutiny of behavioural finance theories. This theoretical review provides the necessary support for the current research. It initiates with the theoretical overview and then progresses to the foundational theory for the study. The study has embraced the perspective of theories employed to substantiate and elucidate the relationship between the variables under investigation.

3.2. Financial Theory Related to Financial Markets

3.2.1 Traditional Finance Theory

In traditional finance theory, investors are generally portrayed as rational individuals seeking to maximize their wealth. They construct their investment strategies based on fundamental financial principles while considering risk-return factors (Gatti, 2023: 377). The traditional theory posits that individuals tend to avoid risk, focusing on maximising their personal benefit and thinking of themselves as rational and logical investors (Jakhar, 2019: 58). Yet, when it pertains to making investments, investors emotional dispositions, established thought processes, and psychological factors shape their perception of the world and influence their decision-making (Pompian, 2006: 3-5). However, there are a lot of arguments and counter-arguments about behaviour of small investors in the derivatives market that researchers have come up with. For instance, Gupta and Ahmed (2016: 50) has confirmed that psychological factors do exert an influence on investor decision-making in the context of the Indian Stock market. Mitroi and Oproiu (2014: 153) identified that behavioural biases impact the connection between risks and returns, leading to the conclusion that high risk is not necessarily correlated with high returns, which contradicts traditional finance theory. Bakar and Yi (2016: 320) contend that behavioural finance research has consistently shown that individual investors do not always act rationally; rather, their decisions are influenced by their psychological emotions.

Traditional finance theory predominantly seeks to grasp financial markets by employing mathematical models that assume the rationality of investors. Throughout its history, the field of finance has operated under the assumption that individuals consistently make logical and impartial decisions, portraying individual investors as prudent decision-makers who carefully weigh economic choices. A rational investor is characterized by their ability to promptly adjust their beliefs when confronted with new information and make choices that align with normative standards. This conventional finance framework, established in the 1960s, was built upon theories like Modern Portfolio Theory (MPT), Capital Asset Pricing Model (CAPM) and the Efficient Market Hypothesis (EMH) are two prominent theories that advocate for the idea of rational investors and efficient markets. These theories posit that financial markets function in a stable and efficient manner, and that stock prices adhering to predictable patterns while the broader economy tends toward equilibrium.

This study will primarily focus on the most impactful theory that has influenced the financial landscape for an extended period: the efficient market hypothesis.

3.2.2. The Efficient Market Hypothesis

Before delving deeper into the subject, it's important to establish some key definitions of the Efficient Market Hypothesis (EMH). According to Damodaran (2019: 1177) the notion of market efficiency can be simplified as follows: it suggests that asset prices in financial markets comprehensively reflect all accessible information. EMH posits that markets are efficient in the sense that individual investors cannot consistently achieve superior performance or outperform the market because prices already incorporate all forms of information. This theory is often colloquially referred to as per the random walk theory, indicating that prices have an equal likelihood of increasing or decreasing, making them unpredictable. Essentially, in an "efficient" market, there are numerous rational, profit-maximizing participants actively compete, trying to predict future values of securities, and where vital current information is easily accessible to all participants, ensuring that prices reflect the latest information quickly (Damodaran 2019, Karz, 2012: 2).

In an efficient market, competition among informed investors results in prices of individual securities consistently reflecting all available information, whether from past events or anticipated future developments (Xu 2021: 1). Consequently, EMH contends that all stocks are accurately priced based on their intrinsic attributes, knowledge of which is equally shared among market participants (Xu 2021: 4). Furthermore, the efficiency emphasized by EMH pertains to information, where financial markets combine all types of information into stock

prices, and the market does not retain historical memory, with new information causing random fluctuations in share prices. Under this premise, arbitrageurs (investors) act to reduce the price of an overpriced asset or raise it if underpriced, bringing it in line with its true value (Petros, 2012: 2).

EMH serves as a cornerstone for maintaining the rational functioning of financial markets (Singh, 2012: 7). It assumes that individual investors are completely rational, motivated by the objective of maximizing their expected utility (Mostovyi 2018), with emotions and psychology playing no role in their behaviour (Ball, 2009: 11). Asnawi, Pratama, Kurniawan, and Rodjana (2023) assert that the Efficient Market Hypothesis (EMH) possesses a distinctive characteristic, wherein investors' expected profits impact their trading behaviours, and consequently, their overall returns. Nevertheless, despite its success in explaining market behaviour and widespread acceptance, EMH fails to satisfy proponents of behavioural finance (Ton and Dao 2014: 16). Lo and MacKinlay (1999: 6), for instance, contend that a thorough evaluation of EMH should consider market efficiency alongside investors' preferred risk approaches; thus, EMH lacks clear vindication. According to Xu (2021), other elements including investor preferences, information structures, business conditions, etc., should be taken into account to make EMH practically applicable. Nevertheless, EMH is assessed through various auxiliary hypotheses, where acceptance or rejection of these sub-hypotheses determines the overall extent of market efficiency. A unified hypothesis fails to specify which aspects of EMH are upheld and which are not (Xu, 2021). EMH comes in three versions.

3.2.3. The Theoretical Foundations of the EMH

EMH relies on three fundamental assumptions that form the basis of its theoretical framework: Firstly, it assumes investors to be rational, making logical assessments of securities. Second, even if there are irrational investors, their erratic trading actions are random and offset each other, leaving prices unaffected. Third, in cases where investors exhibit similar irrational behaviours, rational arbitrageurs enter the market and neutralize their impact on prices (Colin-Jaeger and Delcey 2020: 98). Thus, the central premise of the Efficient Market Hypothesis lies in the swift and efficient integration of information into asset prices at any given moment, rendering it impossible to predict future price movements, as posited by the random walk theory. Market information comes in various forms, both public and private, leading to the categorization of market efficiency into three versions:

3.2.4. Three Versions of the EMH:

There exist three versions of market efficiency, which revolve around the inclusion of non-public information into market prices, encompassing the weak, semi-strong, and strong forms.

3.2.4.1. The Weak Form efficiency in the context of past information suggests that when investors believe that the market fully integrates all publicly available historical data, including prices, trading volume, historical financial statements, news, and narratives, the market is considered efficient in its weak form (Mustafa and Ahmed 2020: 272). If all participants in the financial market have access to this information, abnormal profits would not be achievable. Consequently, to an analyst, all historical information loses its significance because past prices are already incorporated into current prices. Essentially, one must ponder: What relevance does historical and outdated information hold for an investor, and how does it factor into the share market's pricing dynamics? Nonetheless, Abushamala (2011: 247) established that the weak efficiency form does not apply to the Palestine Exchange (PEX).

3.2.4.2. The Semi-strong Form of market efficiency implies that the financial market is efficient in a manner similar to the Strong Form. This implies that the prices of financial assets already incorporate all publicly available information. Consequently, investors cannot identify undervalued securities, and no individual investor can achieve abnormal profits by leveraging this information. At this level of efficiency, all market participants have easy access to current information. As a result, market prices inherently encompass all presently available information, including balance sheets, income statements, dividends, earnings, and more.

3.2.4.3. In the Strong Form market efficiency, prices are expected to encompass all forms of information, whether it's publicly available or private (Damodaran 2019, Singh, 2012: 7). This form hinges on the fundamental assumption that no investor can achieve superior profits, even with early access to insider information. Consequently, prices should consistently align with underlying fundamentals (Beechey et al., 2000: 2). However, the practical reality of financial markets lends more support to the weak and semi-strong forms of efficiency, rather than attaining complete efficiency in the strong form. This observation is derived from the performance of professional investment managers. As a result, share prices reflect the entirety of available information, spanning both public and private realms. Consequently, investors are unable to consistently secure abnormal returns by relying on private information, mainly because share prices react swiftly and impartially to new information. Therefore, the opportunities for individuals to exploit new information are exceedingly limited.

3.2.5. There are problems and limitations of EMH

According to the Efficient Market Hypothesis (EMH), if one investor manages to be consistently profitable, it implies that all investors, across the entire spectrum, should also be profitable, although this assumption doesn't always hold true (Bergen, 2011: 65). Additionally, the EMH asserts that no investor should have the ability to outperform the market or achieve better annual returns than what all investors and funds collectively attain through their best efforts. This notion aligns with the common belief held by many market experts, suggesting that the most optimal investment strategy involves placing all investing funds in an index fund. Such a fund would naturally rise or fall in tandem with the overall corporate profitability or losses. However, these challenges mentioned above have given rise to various limitations within the EMH framework, including bounded rationality, the limits of arbitrage, and constraints imposed by subjective utility functions.

Here, we first outline the traditional finance theories that uphold the concept of investor rationality, followed by an examination of criticisms aimed at their assumptions, as articulated by scholars in the field of behavioural finance.

3.2.6. Modern Portfolio Theory (MPT)

The Modern Portfolio Theory (MPT) focuses on achieving maximum returns relative to a specific level of investment risk or reducing risk while intelligently selecting different quantities of assets (Massahi, Mahootchi, and Khamseh, 2020). Markowitz (1952: 78) introduced this theory as part of his portfolio selection concept, aiming to isolate risks in relation to expected gains. It formulated the portfolio selection challenge as a decision that encompasses the average and the dispersion (variance) of a portfolio comprising multiple assets. Markowitz's theory suggests that investors can potentially optimize their anticipated returns while minimizing the fluctuation in returns by spreading their investments across assets with varying price movements in different markets. Researchers have explored the advantages of diversification strategies in portfolio investment based on MPT principles (e.g., Eun and Resnick, 1994; Singh, 2012). Within Modern Portfolio Theory (MPT), the risks linked to a specific security are assessed in relation to fluctuations in the market portfolio's values (Wang 2023).

MPT allows for creating portfolios aimed at maximizing anticipated returns at the investor's preferred risk level. However, it also asserts that higher returns are directly linked to higher risk (Singh, 2012: 10). Minimizing portfolio risk involves choosing securities with low risk. The degree of uncertainty within a portfolio hinges on whether individual asset returns are correlated or display a combination of positive and negative movements (Sumnicht and

Swisher, 2009: 16). Diversification, i.e., allocating resources to different asset types simultaneously, helps mitigate this type of risk. Despite its utility, MPT has faced criticism. Certain individuals contend that it is "explanatory rather than directive and depends on assumptions that may not consistently hold true" (Curtis 2004: 16). Assumptions like no taxes or transaction costs, unlimited ability to buy securities, and investors' actions not affecting the market have been challenged. The most significant criticism centers on the assumption of rational investor behaviour, contradicted by numerous studies in behavioural finance (Firat and Fettahoglou, 2011: 155). This raises doubts about MPT's proposition that investors possess a clear concept of expected returns, given the inherent bias in their return expectations.

3.2.7. Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM), originally formulated by Sharpe (1964) and further developed by Lintner (1965: 22), emerged from the notion that security prices are determined by expected returns sufficient to compensate for potential risk. It establishes a connection between an individual security's expected rate of return and its measure of systematic risk, often referred to as non-diversifiable risk. As mentioned earlier, Investors face two distinct categories of risks: diversifiable (also known as unsystematic) and non-diversifiable (or systematic). Unsystematic risk encompasses the portion of a portfolio's risk that can be reduced by increasing the size of the portfolio. Creating a well-diversified portfolio effectively eliminates risks that are specific to individual securities, such as business or financial risks (Norsiman et al 2019). Conversely, systematic risk is associated with overall market or economic movements and is commonly known as market risk. This component of overall risk cannot be eliminated through diversification of a portfolio (Bai 2023).

However, the model hinges on certain foundational assumptions, which have also drawn criticism. These assumptions include: (a) all investors possess risk-averse attitudes and can be summarized solely by the mean and variance of returns, with a single-period time horizon; (b) no taxes or market imperfections exist; (c) no transaction costs are incurred, and all investors have access to all relevant, freely available information; (d) assets can be infinitely divided and are easily tradable; (e) All investors hold uniform expectations regarding return distributions.; (f) There is unrestricted borrowing and lending at risk-free interest rates (Krause 2001: 4).

Fama and French (2004: 34) argue that CAPM's appeal lies in its ability to provide robust, satisfying predictions regarding risk assessment and the relationship between risk and return.

Therefore, it is commonly used to evaluate portfolio performance and to predict risks for portfolio enhancement (Period 2004: 9). Despite its widespread application, research has revealed CAPM's limitations under various conditions, its lack of precision, and its failure to accurately forecast asset values (Taylor 2005: 7). The model is beset by theoretical weaknesses in defining the market portfolio and empirical shortcomings in explaining realized returns. Consequently, Potisawang, (2019) contend that the model is fundamentally flawed both in theory and practical utility, offering little practical value.

3.2.8. Arbitrage Pricing Theory

Introduced by Stephen Ross in 1976, the Arbitrage Pricing Theory (APT) was developed as an alternative to the Capital Asset Pricing Model (CAPM). APT seeks to establish a connection between expected returns and associated risks by utilizing a range of variables that link returns to sequential indexes (Yang 2019:1). This theory aims to forecast patterns in portfolio returns concerning individual asset returns through a sequential combination of various macroeconomic variables (Ross, 1976: 11). Essentially, APT posits that a security's price is influenced by several factors, which can be categorized into two groups: macroeconomic and company-specific factors (Groenewold and Fraser, 1997: 10). In doing so, it attempts to capture some of the non-market forces that cause securities to move together (Petros, 2012: 13). APT challenges the assumptions of CAPM with a simpler arbitrage argument and the potential advantage of being a multifactor model (Cagnett, 2002: 43).

However, the strength and weakness of APT lie in its generality and versatility (Zhu et al 2021, Daniel and Titman, 1997: 25). Although the model offers a sensible structure for explaining returns and risks, and the foundational factors seem credible, it does not specify which factors are precisely correct, and these factors can evolve over time (Huberman and Wang, 2005). Furthermore, due to its multifactor nature, APT demands a larger dataset (Bodstrom and Hamalainen 2019: 1). While some empirical studies have celebrated APT's success (for example, Liu and Abbeed 2021, Groenewold and Fraser, 1997), others have argued that this success may be more attributed to shortcomings in the testing methodologies employed rather than the model's inherent robustness (Bodstrom and Hamalainen 2019: 1).

3.2.9. Criticisms of the Traditional Finance Theories

Traditional finance theories have faced criticism for their foundational premises regarding investor rationality and market efficiency, which have been scrutinized through empirical research. These conventional theories have been faulted for largely disregarding the potential influence of human behaviour in the investment process. Additionally, they have been faulted

for presuming that financial markets remain stable and efficient, resulting in stock prices adhering to a "random walk" pattern and the broader economy gravitating towards a state of overall equilibrium (Al-Hamdooni 2023: 2). Empirical evidence has highlighted numerous market anomalies that defy explanation within the framework of efficient market theories. These anomalies encompass excessive volatility and deviations in returns from the expectations of traditional finance theories. Excessive volatility can be interpreted as price fluctuations occurring without apparent cause or attributed to factors such as animal spirits or mass psychology (James 2019: 1). This concept characterizes the empirical observation that stock returns exhibit greater volatility than can be justified by their fundamental values (Haritha and Rishad 2020: 1) Irregularities in returns call into question the assumptions of conventional financial theories.

3.3. Behavioural Finance

The emergence of behavioural finance can be attributed to imperfections in the market. According to Zindel, Zindel, and Quirino (2014: 11), behavioural finance encompasses three domains: financial expertise, economics, and cognitive psychology, which all play a role when investors make financial choices. behavioural finance combines individual behaviour and market phenomena, integrating insights from both psychology and finance in its analysis (Fromlet 2001: 65). Numerous theories have emerged to elucidate the diverse irrational behaviours exhibited by investors in financial markets, drawing heavily from the principles of cognitive psychology. These theories are elaborated upon below.

3.3.1. Emergence of Behavioural Finance

behavioural finance is a relatively modern discipline that aims to integrate insights from behavioural and cognitive psychology with traditional economics and finance to shed light on the reasons behind individuals' less-than-optimal financial decisions. Although economists have been contemplating financial behaviours for centuries, the formal inception of behavioural economics occurred with the pioneering work of Daniel Kahneman and Amos Tversky when they published a paper on prospect theory and individuals' approach to economic risk in 1979. Subsequently, in 1980, Richard Thaler expanded upon Kahneman and Tversky's research, as noted by Barberis in 2018, with his publication titled "Toward a Positive Theory of Consumer Choice." Thaler has since become one of the most renowned figures in this field, authoring influential books such as "Nudge: The Gentle Power of Choice," "Quasi-Rational Economics," "The Winner's Curse: Paradoxes and Anomalies of Economic Life," and "Advances in behavioural Finance Volumes I and II." Furthermore, in 2002, Kahneman and Tversky were awarded the Nobel Memorial Prize in Economics, and Kahneman went on to

write the bestselling book "Thinking, Fast and Slow" in 2011. Additionally, finance professors Brad M. Barber and Terrance Odean from the University of California emphasize in their article, "The Courage of Misguided Convictions," that behavioural finance incorporates "observable, systematic, and uniquely human departures from conventional models of financial markets." Before delving deeper into this subject, it is essential to provide a definition of behavioural finance.

3.3.2. Behavioural Finance Definition

behavioural finance explores human behaviour within the context of finance. Specifically, it investigates how psychology influences decisions in the realm of finance, impacting individuals, corporations, and financial markets (Nofsinger 2001: 1341). According to, Baker, Filbeck, and Ricciardi, (2019: 50) behavioural finance delves into the psychological factors influencing financial practitioners' behaviour and the subsequent repercussions on markets. It is a scientific field that delves into theories and experiments focused on understanding the outcomes when investors make choices based on intuition or emotions. Shefrin (2000: 68) offers a definition of behavioural finance as a rapidly evolving field that examines how psychology affects the behaviour of financial practitioners. This field has surfaced as a novel strategy in response to critiques directed at conventional finance theories. Its objective is to clarify financial market occurrences by easing the assumptions of efficient market theories. Essentially, behavioural finance suggests that certain market occurrences become more understandable when one takes into account that investors aren't entirely rational and that human biases impact their investment choices (Kumari, Goyal. Kumar 2022: 2). Hence, Kahneman and Tversky (1979: 266) suggested that principles from the social sciences can clarify the efficiency of financial markets and explain disparities, booms, and crashes.

behavioural finance seeks to comprehend the psychological biases inherent in financial markets. It represents a movement within the financial realm that concentrates on understanding how human behaviour and investor psychology influence investment decisions and market prices (Shiller, 2002: 22). While various definitions of behavioural finance exist, there is a notable convergence among them. Redawati and Rizani (2023: 1) defines behavioural finance as the study of how humans interpret information and make informed investment decisions. This perspective is echoed by Ricciardi and Simon (2000: 3), who propose that behavioural finance aims to dissect the key human factors that underlie finance and investing. Similarly, Al-Tamimi (2006: 227), in alignment with Kiyilar and Acar (2009: 459), highlights that behavioural finance concentrates on how investors interpret data to inform their decisions. Sewell (2011: 2) characterizes it as a psychological examination of investors and

their impact on the market, striving to elucidate the reasons behind market underperformance (Agarwal and Panwar, 2014: 5).

3.3.3. Behavioural Finance Theory

As stated by Sahoo and Sahoo (2022: 15) behavioural finance is the examination of how human psychology, encompassing thoughts, emotions, and attitudes such as confidence, shapes financial decisions and behaviours. behavioural finance delves into the realm of psychological factors and challenges the concepts of market efficiency and the rationality of investors. Shiller (2007: 54) asserts that behavioural finance delves into the examination of how psychology shapes the behaviour of financial practitioners and its subsequent repercussions on the market. behavioural finance takes into account both individual behaviour and market dynamics simultaneously. It incorporates findings from both psychology and finance in its analytical framework (Venezia 2018: 1). Numerous theories have been employed to elucidate the diverse instances of irrational behaviour exhibited by investors in financial markets, and these theories draw extensively from the insights provided by cognitive behavioural theories in psychology.

behavioural finance emerged as a growing field in financial research after the 1990s (Helen and Simon, 2000: 19). Scholars note that the evolution of financial studies underwent a transformation from the dominance of the efficient market hypothesis to the emergence of behavioural finance theory. This shift occurred during the 1970s, coinciding with a notable alignment between the prevailing theoretical paradigms of that era and the practical data influenced by changes in resources and stock systems (Robert Merton, 1973: 3). Individuals play a pivotal role in behavioural studies in both psychology and behavioural finance. Charles Mackay (1841: 103) elucidated crowd psychology and behaviour in financial markets in his book "Memoirs of Extraordinary Popular Delusions and the Madness of Crowds." This underscores the relevance of diverse studies and their interconnected influence on modern-day finance across centuries and decades.

behavioural finance entails the examination of psychological factors influencing investor behaviour and financial analysts. It acknowledges that investors do not always act rationally, as they have limitations and are susceptible to inherent biases. The primary distinction between behavioural finance and traditional finance, such as Modern Portfolio Theory and the Efficient Market Hypothesis (Helen and Simon, 2000), lies in their contrasting assumptions. Traditional finance assumes rational investors, efficient markets, and portfolio construction based on mean portfolio theory and expected portfolio returns. In contrast, behavioural finance

recognizes the role of emotional influences on investors, the cognitive processes at play when making investment decisions, and the influence of investment trends followed by other investors when making decisions effectively.

3.3.3.1. Prospect Theory

Tversky and Kahneman (1992: 431) introduced the prospect theory in their study in 1992 marking a significant milestone in the establishment of the field of behavioural finance. The theory posits that individuals exhibit diverse emotional responses when it comes to gains and losses. It contends that the emotional distress experienced from potential losses outweighs the happiness derived from equivalent gains (Trepel, Fox, and Poldrack, 2005: 39). Yang (2019: 45) also posits that there is an irrational inclination among individuals to exhibit greater reluctance when taking risks with gains compared to losses. This perspective on risk concerning financial gain diverges significantly from the one focused on losses, as suggested by Ricciardi (2004: 52). The theory asserts that losses are perceived as more significant than equivalent gains, and people's perception of the value of money changes when it is in their possession. Prospect theory also seeks to elucidate why investors tend to retain losing stocks, suggesting that individuals often take greater risks to avoid losses than to achieve gains. Chandra and Kumar (2011: 129) applied this theory in the context of India and discovered that investors tend to hold onto high-risk stock positions, akin to gamblers who, while on a losing streak, increase their bets and frequency in an attempt to recover their losses.

Furthermore, Jagongo and Mutswenje (2014: 4) employed this theory in their research and concluded that despite individuals' rational desires to earn returns on the risks they undertake, they tend to assign higher value to possessions than they would typically be willing to pay for those items. According to Waweru, Hoque, and Uliana (2003: 679), decision-making patterns are influenced by perspectives such as regret aversion, loss aversion, and mental accounting. McDermott (2001: 52) suggests that this theory posits a two-phase decision-making process: an editing phase that considers framing effects and an evaluative phase that pertains to the selection process influenced by subjective value and perceived probability. Barberis and Thaler (2003: 78) argue that prospect theory has emerged as one of the most influential decision-making theories in recent years and has found applications in various contexts. In the present context, prospect theory was instrumental in understanding why retail investors opt to retain losing stocks while selling their winning stocks, driven by the belief that today's losers may outperform today's gainers in the future. The theory was well-suited for this study as investors often make the mistake of chasing market trends by investing in options that receive significant attention or publicity.

3.3.3.2. Cognitive Bias Theory

Cognitive theory submits that an individual's behaviour is shaped by their own cognitive processes. Therefore, thoughts and self-perception play a significant role in determining both behaviour and emotions (Chick 2019: 495) The origins of this theory can be traced back to Le Bon and Merunka (2006: 399), who observed irrational behaviour and described how to market influences affect an individual's decision-making process. It draws heavily from cognitive psychology, which involves the study of how people gather, process, and store information to comprehend their surroundings. In simpler terms, it investigates how individuals think, perceive, remember, and learn. This scientific discipline primarily focuses on an individual's understanding of how their environment shapes their behaviour. Cognitive psychology is a broad field with diverse applications, but in this research and discussion, we will narrow our focus to aspects relevant to understanding financial decision-making.

Cognitive biases are closely linked to how individuals arrive at financial decisions and can offer valuable insights into the elements influencing the decision-making process. According to Nofsinger (2007: 296), biases play a significant role in shaping people's investment decisions, while Hirshleifer (2001: 1537) asserts that flaws in reasoning and personal preferences arise from simplification processes, self-deception, and instinctive decision-making.

Bonyandi (2019: 91) contend that individuals often fail to learn from their mistakes because they tend to attribute their successes to themselves but ascribe failures to external factors. Many researchers have explored cognitive biases, and these biases can be explained by psychological simplifications, both cognitive and emotional. Examples of such studies include Kusumawardani and Yuliyanti (2023), who examined the self-attribution bias, and Gubaydullina, Hein, and Spiwoks (2011), who investigated the status quo bias. Additionally, Jain, Walia and Gupta (2019) employed the loss aversion bias in their research and according to Jain et al (2021: 1) numerous studies have been carried out to investigate how dissenter biases, including representativeness, overconfidence, and herding, affect investors' decision-making. Financial literacy (Byrne and Brooks 2008;), anchoring, accounting information, information availability, mental accounting, and regret aversion (for example, Ates 2004; Daniel, Hirshleifer and Teoh, 2002).

3.3.3.3. Heuristic Theory

The heuristic theory, pioneered by Kahneman and Tversky (1984: 341), marked a significant shift in the examination of human judgment and decision-making. It proposed that when making judgments in uncertain situations, people often rely on simplified heuristics instead of intricate algorithms. This concept gained widespread acceptance not only in psychology but also in various other disciplines including economics, law, medicine, business, and political science. It posed a challenge to the idealized models of judgment and provided a cognitive explanation for human errors without invoking the notion of motivated irrationality (Moreira 2018: 1).

Kahneman and Tversky (1979: 266) identified three general-purpose heuristics—availability, representativeness, and anchoring and adjustment—that serve as the basis for many intuitive judgments made in uncertain conditions. These heuristics were regarded as simple and efficient because they relied on basic mental calculations. Essentially, heuristics were like rules of thumb that simplified decision-making, especially in complex and uncertain scenarios, by reducing the complexity associated with assessing probabilities and predicting values (Kahneman and Tversky, 1979: 114).

Representativeness pertains to the similarity of an event to its parent population. In the financial market, it's evident when investors favor "hot" stocks over underperforming ones. Anchoring involves using initial values as reference points, biasing estimations towards these starting values. In the financial context, investors often reference their initial purchase price when making decisions. Availability bias occurs when readily available information is overly relied upon. In finance, this bias is seen when investors prefer local financial companies, they are familiar with, despite principles of portfolio diversification (Waweru et al., 2008: 29).

Scholars like Waweru et al. (2008: 29) added two more factors to the heuristic theory—Gambler's fallacy and Overconfidence. Overconfidence is observed when investors and analysts exhibit excessive confidence in their knowledge and skills, even in areas they know well (Lin, Ho and Chih 2018: 73). It can enhance others' perceptions of one's abilities, potentially leading to faster promotion and longer investment durations (Oberlechner and Osler, 2004: 7). The "law of small numbers" is the idea that a limited sample size can accurately reflect the characteristics of a larger population, leading to the Gambler's fallacy (Areiqat, Abu-Rumman, Al-Alani, and Alhorani, 2019: 10). This behaviour explains investor overreactions, particularly in the financial market, where it manifests as inaccurate predictions regarding market reversals (De Bondt, 2018: 61). In the Johannesburg derivative market, the heuristic theory forms the basis for understanding anchoring, overconfidence, and representativeness biases.

3.3.3.4. Portfolio Diversification Theory

Harry Markowitz introduced portfolio theory in 1952 (Markowitz, 1952: 78). In his definition, a portfolio comprises a collection of securities. Since most securities involve uncertain returns and inherent risk, it becomes crucial to determine which portfolio to invest in. Markowitz argues that investors should base their portfolio decisions solely on expected returns and standard deviations. To do this, investors must estimate the expected return and standard deviation for each portfolio and then select the best one based on these two criteria. The expected return can be seen as a measure of the potential reward associated with a portfolio over the holding period, while the standard deviation serves as a measure of the risk linked to the portfolio (Markowitz, 1991: 91). Portfolio risk, in this context, can be defined as the variance within a portfolio, indicating the potential for loss or the level of risk an investor is willing to tolerate in pursuit of higher returns. Diversification is a key strategy that emphasizes the importance of managing portfolio risk. Furthermore, it is currently the sole factor employed to elucidate the advantages of a portfolio over an individual stock (Fransiska, Rahmawati, Saputra, Yovita, and Pandin, 2023: 1). Given the possibility of creating countless portfolios from a collection of securities, the challenge lies in identifying the optimal portfolio.

The Efficient Set Theorem posits that an investor will select their most suitable portfolio from a group of portfolios that (i) offer the highest expected return across different risk levels and (ii) provide the lowest risk while varying the expected return. This set of portfolios that meets both conditions is commonly known as the efficient set, which is also referred to as the efficient frontier. The process begins by identifying the feasible set, which encompasses all possible portfolios composed of a given number of securities. The investor then selects an optimal portfolio by plotting their indifference curve alongside the efficient set. The objective is to choose the portfolio positioned at the northwest extremity of the indifference curve. This specific portfolio corresponds to the point where the indifference curve barely touches the efficient set. In essence, the investor's ideal portfolio can be found at the point where their indifference curves intersect with the efficient set (Reilly and Brown, 2009: 3).

3.4. Research Hypotheses

H_0: All independent variabless (Psychological factors, Behaviour and demographic factors, financial literacy and accounting information, Investor attitude to Risk perception) altogether influence the dependent variable (Investors decision-making).

H_1: Psychological Factor influences investment decision-making.

H_2: Behavioural and Demographic factor influences investment decision-making.

H_3: Financial literacy and accounting information influence investment decision-making.

H_4: Investors' Attitude to Risk perception influences investment decision making.

3.5. Chapter Summary

In summary, this chapter has provided an overview of financial theory related to the financial market, which is brought together and discussed in detail. This chapter digs into the theories pertinent to the financial market, drawing from a comprehensive literature review and theoretical perspectives that support the variables under investigation. The theoretical review underscores the importance of psychological elements in influencing investors' decision-making processes.

In the following chapter, we will dig into the research methodology utilized in this study, along with the rationale for its selection.

CHAPTER FOUR

RESEARCH METHOD

4.1 Introduction

In this chapter, we turn our attention to the research methodology applied throughout this study. We will delve into the description, identification, and discussion of the methodological approaches employed to execute this research. Furthermore, we will explore the underlying philosophy guiding our research techniques. The chapter will shed light on the specific frameworks within which empirical research was conducted. We will provide insights into the decision-making process that led to the selection of strategies, approaches, procedures, and techniques best suited for this study. Additionally, we will elucidate the methodology for selecting our sample, which encompasses individuals from the stock exchange, individual investors, and institution officials. Furthermore, we will scrutinize the research's rigor and comprehensiveness, emphasizing the critical aspects of data validity and reliability.

4.2. Research Design

Study designs encompass the strategies and procedures that research studies follow for the collection, analysis, interpretation, and reporting of data to achieve their analytical objectives (Creswell and Plano Clark, 2007: 47). According to Fouché, Delport, and De Vos (2011: 40), study designs hold significance as they provide essential guidance to researchers, aiding them in making methodological decisions and interpretations that are logically sound for their research endeavors. Creswell and Plano Clark (2011: 55) delineate three primary study design categories: qualitative, quantitative, and mixed methods.

The research design serves as a blueprint that outlines the type of data required, the methodologies employed for data collection and analysis, and how these components work together to address the research questions. As articulated by Dannels (2018: 15), a research design is essentially a plan that specifies how the research will be conducted, identifying the key actors or elements involved, as well as the study's location. Importantly, the research design section serves as an integral part of the research methodology, bridging the conceptual research problems with practical and achievable empirical research. Fouché et al. (2011: 102) emphasize the significance of study designs in helping researchers make logical methodological decisions and interpretations in their studies. This includes defining the specifics of what or who should be investigated, encompassing the components of analysis, population parameters, sample types, and required time measurements.

4.3. Research Approach (Mixed-Methods)

For this study, a mixed-method approach was employed. As per Creswell (2014: 22), mixed methods research, as a methodology, has been in existence for approximately 25 years. The significance and value of study designs combining both qualitative and quantitative methods have gained increasing recognition over time (Östlund, Kidd, Wengstrom and Rowa-Dewar, 2011: 370). According to Flick (2016: 140), researchers have progressively moved to mixed-method practices to enlarge the scope and advance the analytic power of their studies. Venkatesh, Brown, and Bala (2013: 21) state that mixed methods research is an approach that integrates quantitative and qualitative research methods within a single research investigation. Such an approach can contribute to the development of a comprehensive understanding of various phenomena of interest that may remain incomplete when relying solely on one research method. According to Palinkas, Horwitz, Green, Wisdom, Duan, and Hoagwood (2015: 535), the underlying reasoning behind this is that mixed methods research has the capacity to harness the inherent strengths of both qualitative and quantitative research frameworks. Flick (2016: 140) goes on to affirm that mixed-method studies exhibit efficacy in various aspects, including sampling, data collection, and data analysis. McCusker and Gunaydin (2014: 1) elaborate that qualitative research is deemed suitable for exploring facets of social life, employing methods that generate textual data rather than numerical data for analysis.

On the other hand, quantitative methods measure percentages or numbers. In addition, Harrison, Reilly, and Creswell (2020: 480) assert that mixed methods research can yield more comprehensive and lucid responses to inquiries involving complex phenomena. It is worth noting that mixed methods research has been categorized as the third methodological paradigm, following the initial two paradigms represented by quantitative and qualitative methods respectively. Despite the interchangeable usage of the terms 'mixed methods' and 'multimethod' in the fields of social and behavioural sciences, it's important to recognize that there exist fundamental conceptual distinctions between the two (Venkatesh, Brown, and Bala, 2013: 22). McCusker and Gunaydin (2014: 2) explain that research that acts on the strengths of both quantitative and qualitative methods is now recognised as indispensable in numerous fields of research. Having a proper understanding of such methodologies and a systematic combination of the relevant techniques can guarantee rigor. Mixed methods research combines both quantitative and qualitative research methodologies which can be employed either simultaneously (concurrently, with both qualitative and quantitative phases occurring concurrently) or sequentially (one phase conducted first, followed by the other), To gain a deeper comprehension of a phenomenon under investigation (Venkatesh, Brown and Bala, 2013: 23).

4.3.1. Reasons for Choosing Mixed Method Research

According to Sparkes (2015: 3), the benefits of a mixed-method approach are that it compensates for limitations and enhances the quality of conclusions by harnessing the complementary advantages of both methods, resulting in more robust and precise interpretations. Venkatesh, Brown, and Bala (2013: 24), States that mixed methods research can simultaneously tackle both confirmatory and exploratory research inquiries. Even though while both qualitative and quantitative methods can arguably be applied to investigate similar research inquiries, qualitative methods have traditionally found greater usage in the social sciences and various other fields for exploratory research purposes. They are employed to develop a deep comprehension of a phenomenon and to inductively formulate new theoretical insights. (Punch, 2013: 301; Venkatesh, Brown and Bala, 2013: 24). It employs triangulation, thereby enhancing the validity of a study which seeks to authenticate and align quantitative and qualitative data, serving as a complement through the fusion of methods. This combination allows for a more complete and comprehensive understanding of the studied phenomenon to emerge, so it generates new perceptions.

Mixed methods can also assist in highlighting the similarities and differences among aspects of a phenomenon. However, the same study stated that the growing interest in and adoption of mixed methods designs have been driven by practical factors, bearing in mind the need for cost-effective research and the increasing competition for research funding (Östlund et al. 2011: 370). Data collection involves the collection of numerical information using instruments and textual information through interviews, ensuring that the final database encompasses both methods (Bowen, Rose and Pilkington, 2017: 66). The benefits of a mixed-method approach in research are complement, entirety, growth, extension, validation, offset, and variety (Venkatesh et al., 2013: 25). Terrell (2012: 260) proposes that there exist two separate phases for data collection (quantitative and qualitative), and it allows flexibility in the sequence of collecting either type first. Priority can be assigned to one or both data types. Nonetheless, during the interpretation process, data from both phases are amalgamated and synthesized. The research is driven by a theoretical perspective, a conceptual structure, and/or a specific idea.

The use of triangulation as a procedural or methodological analogy facilitates the incorporation or integration of qualitative and quantitative findings and assists the researcher to present their theoretical propositions and their findings. Mixed methods using triangulation can also enhance comprehension of the connections between theory and empirical results, challenge theoretical assumptions, and contribute to the formulation of a new theory (Östlund et al.,

2011: 370). The study focuses on individual investors as the target population, and Institution officials (market participants) from the selected Stock Exchange.

4.3.2. Selection of Stock Exchange

This study selects Johannesburg Stock Exchange as an illustrative example within the research. A derivative is traded under the umbrella of the JSE (Hassan 2013: 11). Other investment managers' trade derivatives in South Africa under the umbrella of Johannesburg Stock Exchange, such as Prudential Investment Managers, Afri-focus securities limited, Sanlam Investments, etc. All these investment managers are trading under the umbrella of JSE. Johannesburg Stock Exchange is located in Johannesburg, South Africa. The survey's sample size generally pertains to the quantity of units selected from the gathered data. For this study, the population was selected from a specific Stock Exchange. In qualitative research, the sample size is determined by the extent of the sample. The research required a specific number of focus group participants, a certain level of depth in individual interviews, or a particular amount of ethnographic observations, as indicated by Unite for Sight (2013: 1). In accordance with these guidelines, the selection of participants was made conveniently, encompassing market officials and individual investors. Participants were chosen through a convenience sampling approach, which is useful for recruiting individuals from hidden populations that may not be accessible through other sampling methods. This method ensured that the selected stock exchange represented not only the stock market but also a broader range of participants, but the participant of the market was included in the interview discussions. Questionnaires were distributed to stock exchange officials and investors and data were collected.

4.4. Sampling Design

The population for the study will be investors who invest in the derivatives market in the Johannesburg Stock exchange market and the market officials. For the qualitative, the study will be targeting 25 participants from both investors and Market officials for interviews while for quantitative, the study will be targeting 500 participants such as (investors and market officials). A mixed-method (quantitative and qualitative approach) descriptive study approach was used for this study. To accomplish the qualitative aspect of the study, the researcher conducted interviews and discussions to gather information from the participants. The researcher made visits to the Stock exchange on various days and weeks, armed with open-ended questions, to engage with investors and institutional officials. The researcher organised an interview meeting with investors and officials on suitable dates to gather information on the

topic. The quantitative facet of the research entailed administering surveys to investors thru the JSE Official, who collects the questionnaires for the researcher when it has been completed by their investors. The researcher employed a variety of quantitative and qualitative instruments to enhance data clarity and prevent any potential confusion in the records. It's often impractical, unrealistic, or cost-prohibitive to study an entire target population. In such cases, it is compulsory to draw a sample (Keith, 2017: 83).

According to Herek (2012: 1), typically researchers are unable to observe every person in the study's entire population directly. As an alternative, they collect data from a group of individuals, treating it as a sample to make observations and draw conclusions about the entire population. Therefore, sampling entails the selection of a subset of individuals from a statistical population to infer the characteristics of the entire population. Representative samples were drawn concerning Key factors in this study, including age, gender, and their years of investment experience. Non-probability sampling is employed to grasp the units that will serve as representatives of the population's interest. The constituents within the population are selected and samples are selected from the JSE market in Johannesburg. The unit of analysis is the Market Officials and Investors. Two (2) interviews (Investors and market Officials) and the questionnaire will be from investors and market officials (JSE Official). This will aid in the following aspects: the gathering of data during the study's evaluation phase. Identifying the most influencing factors will help to develop a framework for effective risk management to maximise investors' return.

Convenience sampling was used for this study following the study of Etikan, Musa and Alkassim (2016: 3). The choice of convenience sampling is that it is appropriate or applicable to both qualitative and quantitative studies. Quantitative methods are envisioned to accomplish the breadth/width of understanding while qualitative methods are used to achieve the depth of understanding. According to Etikan and Bala (2017: 201) and McEwan (2020: 240) and according to Guetterman (2015: 1), sampling can occur at various points, whether during data collection or in the process of interpreting and reporting data. It is evident that the variation in sampling strategies between quantitative and qualitative studies stems from the distinct objectives of each research approach. Participants will be selected, and a convenience sampling approach will be used. From the JSE market 500 individual investors and officials will be selected targeting one questionnaire each. Simple random sampling will help to ensure the sample accurately reflects the whole population without favouring any specific group and to minimize selection based on biased factors, Price (2013: 1) notes that a convenience sample falls under the category of non-probability or opportunistic sampling. This means it is chosen without a structured, probability-based selection method. Essentially, a convenience

sample is not considered a comprehensive representation of all potential population units, unlike a census or a rigorously designed scientific sample. One significant drawback of this approach is its potential to yield lower-quality data and a lack of intellectual rigor. In this study, the researcher employed this sampling method to select interview participants.

Etikan, Musa and Alkassim (2016: 3) state that convenience sampling is cost-effective, straightforward, and involves participants who are readily accessible. Consequently, it becomes essential for the researcher to outline the distinctions between this type of sample and one that is randomly chosen. It is important to clarify which participants might be excluded during the selection process and which ones could be overrepresented in the sample. The primary drawback of convenience sampling lies in its potential for bias. Also, another significant issue associated with convenience sampling is the challenge posed by outliers. (i.e., cases that arise that are not part of the study) (Etikan, Musa and Alkassim 2016: 3). While convenience sampling is often present in many qualitative studies, a more deliberate and cautious approach to sample selection is warranted. As noted by Koerber and McMichael (2008: 463), although convenience sampling may not be suitable for every circumstance, it can yield an acceptable sample in many cases. One potential drawback of this approach is the researcher's familiarity with the subject matter or population, which might lead to unwarranted generalizations. In this study, the researcher opted for snowball sampling, a method where the researcher actively selects participants to address research questions. The initial participants (JSE Officials) were asked to identify additional willing participants (Investors), following the guidance of Strydom (2011b: 233).

As per Quinlan (2011: 214) and Creswell (2012: 784), the process of selecting participants should continue until data saturation is achieved or until no further individuals with similar characteristics to the participants can be identified. Additionally, convenience sampling entails collecting data from individuals (both JSE Officials and Investors) who are readily accessible to the researcher, as highlighted by Stratton (2021). McDaniel and Gates (2010: 76) and Malhotra (2010: 377) assert that convenience sampling is generally considered a cost-effective and time-efficient approach when compared to other sampling methods. Furthermore, Blackstone (2016: 4) emphasizes that convenience sampling is particularly suited for exploratory research.

4.5 Population and Sample

According to Sarmah and Hazarika (2012: 60), sample size is determined by choosing the sample size refers to the quantity of observations or replicates to be incorporated into a statistical sample. In empirical research, it holds a critical role when the aim is to draw

conclusions about a population based on the sample. The sample size refers to the number of individuals extracted and drawing definitive conclusions from the target population's participation in a study is a key objective (Berndt and Petzer, 2011: 182; Majid, 2018: 4). Qualitative samples typically comprise a limited number of participants to yield in-depth insights into the studied phenomenon, as noted by Creswell (2012: 662). According to Thomson, Rhoda, Tatem, and Castro (2020: 10), the appropriateness of a qualitative sample depends on its ability to effectively address the study's research question. Consequently, the ultimate size of qualitative samples is determined upon achieving data saturation, as indicated by Etikan and Bala (2017).

On the other hand, quantitative samples, conversely, are generally significantly larger than their qualitative counterparts. Casteel and Bridier (2021: 54) emphasize that quantitative samples should mirror the population's characteristics to enable researchers to generalize their findings to the broader population (Strydom, 2011b: 226). Due to time constraints, random sampling of the target population was not feasible in this study. Consequently, non-probability sampling methods were applied in both the qualitative and quantitative phases. During the qualitative phase, the snowball sampling method was employed, where JSE Officials identified willing investors who, in turn, identified additional participants. Subsequently, the quantitative phase used the convenience sampling method, facilitating easy access to data from both investors and JSE market officials. Additionally, the sample depended on the willingness of JSE Officials to permit their investors to participate in the study.

The sample size for both the qualitative and quantitative segments of this study encompasses 525 investors involved with the Johannesburg Stock Exchange, including institutional officials. Out of these 525 investors, 25 were selected for interviews in the qualitative phase. This qualitative sample size was determined when no new insights emerged from the data, falling within the range of previous studies with sample sizes of six (Guest, Bunce, and Johnson, 2006: 64), ten (Xiao, Tang, and Shim, 2009: 55), and 15 to 18 (Constantine, Anderson, Berkel, Caldwell, and Utsey, 2005; Teddlie and Yu, 2007) participants, effectively addressing the research inquiry, rendering the qualitative sample deemed sufficient. In contrast, the quantitative phase involved a sample of 500 investors, a size consistent with previous studies that included around 200 (Archuleta, Dale, and Spann, 2013: 23), 300 to 400 (Flynn and Goldsmith, 1999; Nabi, Roskos-Ewoldsen, and Dillman Carpentier, 2008), and 500 (Markovich and DeVaney, 1997; Joo, Durband, and Grable, 2008) participants, making it suitable for the study's objectives.

4.6 Data Collection Method

Invitation letters were composed and dispatched to the JSE financial market, outlining the study's objectives and ensuring the confidentiality of their involvement. Furthermore, a letter containing informed consent was provided and signed by the JSE Official representing the researched stock exchange, as well as the participants engaged in the research process. A list of investment companies operating under the umbrella of JSE was sent to the researcher to contact them directly for the study. The study used a mixed-method approach i.e., questionnaires and interviews were employed for data collection from specifically selected respondents, comprising individual investors and investments companies operating under the umbrella of JSE (market participant). The identified investors and investment company official were informed that they had the right to refrain from answering any questions that made them feel uncomfortable.

The study primarily draws upon two data sources: primary and secondary. The secondary data, which formed the foundation of the literature review, was gathered from textbooks, journals, articles, prior research, and online sources. The primary data was gathered from the field through questionnaires and interviews which constituted the opinions of individual investors, and stockbrokers of the selected stock exchange (investment companies). The interview were open-ended questions, which constituted a component of the unprocessed data that underwent analysis. The question was sent through a link, and some of the investors give a detailed response while most of the respondents gives short responses to the questions. The responses were analysed for gaining insight and comprehending the context of each participant was a crucial step. Following this process, the collected data were systematically organized in preparation for analysis. Specifically, for the qualitative interview portion of the study, a minimum of three officials from investment entities operating under JSE were chosen. As for the investors, the snowball sampling technique was employed, wherein the initial investors were asked to identify additional participants willing to engage in the interview discussions of the study. The subsequent sections cover both qualitative and quantitative data collection methods.

4.6.1 Data Collection Instrument

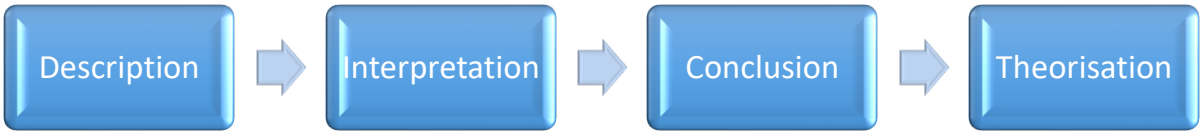
Given the study's mixed-method approach, the research employed surveys and interviews as tools for data collection. The quantitative structured questionnaire link was sent to the investment companies to be distributed to their individual investors to complete. The qualitative interviews were structured and there were no supplementary questions generated

for the interview. The interviews aimed at individual investors, and stockbrokers of the stock exchange while focusing on research objectives which were directed towards finding out the factors affecting their behaviour in the market and the degree of how they are influenced by these factors and the most influencing factors on investor's decision making in the derivative market. From these, a framework is developed and presented in the conclusion chapter to guide investor in effective risk management to maximise investors' return in the South African derivatives market.

4.7. Mixed Method-Data Analysis

This section encompasses the examination of data, encompassing both the qualitative and quantitative data collected during this study. Data analysis involves employing reasoning to comprehend the gathered data, as explained by Zikmund and Babin (2013: 68). As depicted in Figure 4.1 below, the data analysis process typically comprises four stages: description, interpretation, drawing conclusions, and developing theories, as outlined by Quinlan, Babin, Carr, Griffin, and Zikmund (2015: 322).

Figure 4.1: The Four stages of data analysis



Source: Quinlan et al. (2015: 332).

In the description phase, the researcher provides an account of the data by outlining what is evident in the data collected for the study. Subsequently, in the interpretation stage of data analysis, the researcher offers their interpretation of the data's significance. After interpreting the data, the researcher then derives minor assumptions from the data, which contribute to the overall conclusion of the study. Subsequently, during the data analysis's theorization stage, the researcher revisits their literature review and evaluates how their findings correlate with or deviate from the theories presented therein, as explained by Quinlan et al. (2015: 332). All quantitative data were collected and processed using the Statistical Package for Social Science (SPSS version 27) for statistical analysis. Descriptive statistics, such as tables and bar graphs, were generated to illustrate the central tendencies and variations for each gathered variable. According to Van den Berg (2017: 5), SPSS is described as software utilized for the editing and analysis of various types of data, including data arising from scientific research. Ultimately, SPSS serves as a potent tool for conducting intricate statistical

procedures in quantitative analysis, as emphasized by Pallant (2007: xiii) and Quinlan et al. (2015: 318). All quantitative responses were converted into pie and bar charts. An independent statistician was engaged to assist in performing the statistical analysis.

A mixed-method approach, encompassing both quantitative and qualitative methods, was employed in the data analysis. All qualitative data as collected by the researcher were given to the statistician in the same manner as quantitative data for analysis. For qualitative analysis, the software package NVivo 10 was used. This is a software package used worldwide by qualitative researchers for qualitative data analysis. The data collected from interviews, observations, videotapes, and audiotapes were coded using NVivo 10. This software application facilitates various advantages, including allocating more time for analysis and discovery, minimizing administrative tasks, ensuring systematic data examination to avoid overlooking critical details, exploring information and identifying nuanced relationships that are challenging to discern manually, substantiating findings rigorously with supporting evidence, and effectively managing all materials within a single project file while maintaining compatibility with different languages (QRS International n.d.). The answers to the questions were assigned numeric codes and entered into SPSS (version 27) for the purpose of conducting statistical analysis.

Analysing qualitative data is a demanding, repetitive, and challenging task, as noted by Buchanan and Jones (2010: 3) and Nelson, Groom, and Potrac (2014: 182). Neill (2011: 11) and Taylor (2014: 185) assert that qualitative data analysis entails the process of organizing, structuring, and assigning meaning to the extensive amount of gathered data. In this study, data collection followed a descriptive approach where the aim was not to alter behaviours but rather to measure performance, time, and treatment. The researcher subsequently performed thematic analysis and interpreted the primary source data, transforming the coded text into thematic categories while working with the raw materials.

4.8 Factor Analysis

In this research, Factor Analysis was utilized to discern the key factors influencing the behaviour of small investors in the derivatives markets of South Africa. The goal was to assess construct validity, elucidate variations among observed variables, and identify any correlated variables to reduce data redundancy. As suggested by Mwiti (2013: 13), variables with factor loadings exceeding 0.3 were deemed most significant and influential. Factor analysis, a frequently employed statistical method in psychology and the social sciences, was highlighted by Goretzko, Pham, and Bühner (2021: 3511). The significance of conducting factor analysis

lay in summarizing the information from numerous original variables into a smaller set of factors while preserving essential information. Consequently, these newly derived variables were intended to represent the underlying fundamental constructs inherent in the original variables, as explained by Taherdoost, Sahibuddin, and Jalaliyoon (2022: 380).

The subsequent procedure was put into practice for the examination of the qualitative data collected in this study:

Organising data

The initial phase of qualitative data analysis involves the structuring and readiness of the data, as emphasized by Creswell (2012: 407). In this regard, transcriptions were created for all the interviews. meticulously organized, and arranged seqentially, from Participant 1 through Participant 20. As recommended by Opoku and Nketsia (2021: 47), it is imperative for the researcher to arrange the data into readily accessible segments. Once the qualitative data have been systematically arranged, the researcher can proceed to the next phase: familiarization.

Familiarisation

Both the processes of transcribing and organizing the data mark the commencement of the familiarization stage, as indicated by Opoku and Nketsia (2021: 46). Essentially, this entails the researcher listens to the recordings, carefully reads and reviews the transcripts, generates memos, and compiles data summaries before commencing the formal analysis, as underscored by Van der Merwe, Du Plessis, Nel, and Jooste (2015: 44). Moreover, during this familiarization process, the researcher not only comprehends the breadth, depth, and richness of the data but also sets in motion the processes of abstracting and conceptualizing it, in accordance with Kiernan and Hill (2018: 252).

Themes

The coded data are subsequently employed to discern themes or emerging ideas, as described by Van der Merwe (2009: 10). Themes are comprehensive information units created by amalgamating multiple codes to encapsulate a shared concept, as elucidated by Creswell (2012: 414). Schurink et al. (2011: 410) emphasize the importance of "winnowing" the data down to a small, manageable set of themes when dealing with extensive qualitative datasets. According to Creswell (2013: 560), a research study typically benefits from having five to seven themes, which often serve as the primary findings in the qualitative study and are often employed as headings in the findings section (Creswell, 2013: 560). Lacey and Luff (2001: 25) propose that the themes derived from the data can mirror the identified concerns that

prompted the study's initiation, potentially validating the study's significance and offering avenues for further exploration. Alternatively, it is also conceivable to integrate theoretical concepts into the analysis after emergent themes have been identified in the data (Clarke, Braun, and Hayfield, 2015: 60). In the end, thematic analysis can introduce additional dimensions of intricacy to qualitative data analysis. As proposed by Creswell and Plano Clark (2011), researchers can build a theoretical model using the themes (similar to grounded theory) or mold the themes into an all-encompassing depiction (similar to phenomenology). Advanced qualitative studies go beyond theme identification, description, and interpretation, striving to elucidate intricate connections between themes (Creswell, 2013: 560).

Ensuring rigour

Reliability and validity represent critical aspects in all research, even in the realm of qualitative studies. Given the common critique that qualitative research can be subjective and less reliable, it becomes paramount for qualitative researchers to establish the rigor of their studies, as highlighted by Lacey and Luff (2001: 26). In conventional research, reliability is typically demonstrated by showcasing that the study's methods can be reproduced and yield consistent results (Bulawa, 2014: 85; Zikmund and Babin, 2013: 78). However, when it comes to qualitative studies, replicating a study's methods externally may not be an appropriate gauge at all, as noted by Lacey and Luff (2001: 26). Consequently, Mügge (2016: 56) suggests that qualitative research can achieve reliability by adhering to two key principles. First, conducting internal checks is essential, involving a thorough examination of the qualitative data and its interpretation (Lewis and Ritchie, 2003: 358), ensuring the study's robustness. Second, the researcher must provide comprehensive details concerning the research techniques and procedures employed in the study (Delport and Fouché, 2011: 66).

In contrast, validity primarily centers on data interpretation. In quantitative research, if the findings accurately represent when a study's findings align with reality, it is deemed valid (Parasuraman, 1991; Malhotra, 2010). In contrast, qualitative studies operate on the premise that there can be multiple interpretations of reality (Creswell, 2012; Quinlan et al., 2015). Therefore, the traditional method of establishing validity in quantitative research is not applicable to qualitative studies. Instead, the validity of qualitative research is demonstrated by the degree to which a narrative seems to faithfully and accurately depict the gathered data (Lacey and Luff, 2001: 27).

Furthermore, triangulation offers an alternative means of demonstrating reliability and validity (Tracy, 2013: 184). Triangulation involves collecting and analyzing data from various sources

to acquire a more thorough grasp of the investigated phenomena (Lacey and Luff, 2001: 27). As Gunasekare (2016: 44) notes, triangulation entails scrutinizing data from various sources and leveraging it to formulate a cohesive rationale for the study's identified themes. Furthermore, these themes are established by merging information obtained from participants' varied viewpoints, thereby enhancing the study's validity (Creswell, 2013: 565).

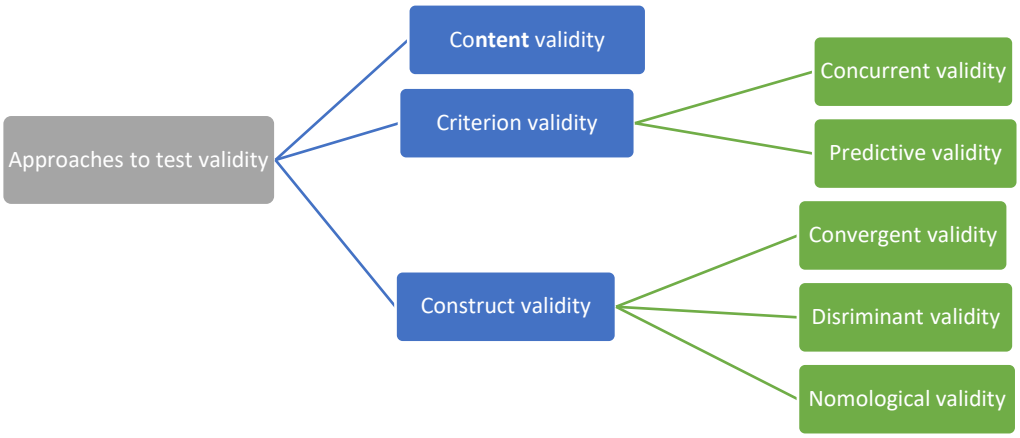
4.9 Validity

Effective research scales should exhibit both consistency and accuracy. Reliability pertains to the scale's consistency, while validity is linked to its accuracy (Zikmund and Babin, 2013: 303). To enhance confidence in research data, methodological triangulation is employed, developing novel approaches to comprehend a phenomenon, unearth distinctive discoveries, question or integrate theories, and achieve a more lucid comprehension of the issue (Rotenberry and Kass, 2016: 134). Methodological triangulation utilizes multiple qualitative and quantitative methods. Results from interviews are cross-referenced to confirm validity and reliability, evaluated based on four criteria: credibility, applicability, consistency, and objectivity. The assessment of human behaviour conforms to the widely acknowledged positivist perspective or the empirical-analytic approach to comprehending reality (Osuagwu, 2020: 50). Within this paradigm, behavioural research requires valid and reliable measurement instruments (Drost, 2011: 105).

Internal validity addresses the reasons behind study outcomes and helps reduce unanticipated factors influencing those outcomes (Bernstein, 2018: 116). To ensure internal validity, the study checked the internal consistency and validity of its instruments to minimize measurement errors. The analysis material drawn from critical interviewee views and respondent situations validated the procedures and results, targeting issues related to the research questions. Question construction was straightforward to maintain clarity, and instructions were devoid of complexity.

External validity, as explained by Drost (2011: 120), relates to a study's capacity to generalize findings to other individuals, settings, and times. It distinguishes between generalizing to well-defined target populations and generalizing across populations. This study seeks to ensure generalizability by applying its findings to different people and situations, while also ensuring that the study conditions represent the relevant situations and time-frame. McDaniel and Gates (2010: 256) identify three approaches for testing the validity of a scale: content validity, criterion validity, and construct validity, as illustrated in Figure 4.2.

Figure .4.2. Approaches to test validity



Source: McDaniel and Gates (2010: 256)

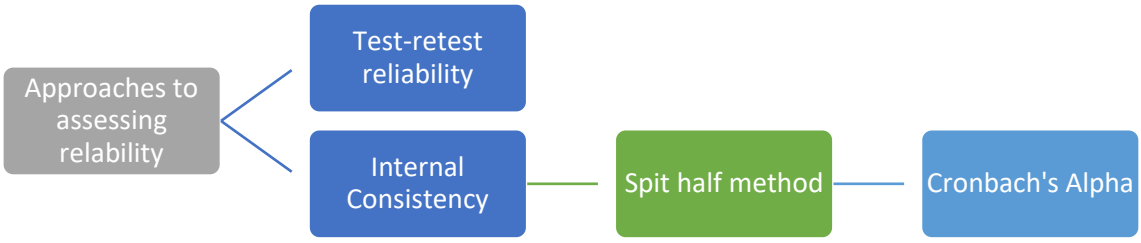
4.10 Reliability

Reliability, as described by Zikmund and Babin (2013: 301), pertains to the measure of a scale's internal consistency. In essence, it signifies the extent to which a scale yields consistent results when repeatedly measured. According to Roberts et al. (2006: 43) and Drost (2011: 106), reliability entails the repeatability of study results or measurements across different circumstances, involving different individuals, occasions, conditions, and ostensibly alternative instruments measuring the same entity. In simpler terms, reliability denotes the consistency and stability of measurement. Achieving consistent results in quantitative research, as noted by Zohrabi (2013: 259), is comparatively straightforward since the data consists of numbers. However, in qualitative research, obtaining identical results is challenging due to narrative and subjective data. In this study, reliability was ensured by meticulously documenting decisions made throughout the research process to enhance credibility and reliability. Precise and accurate themes were developed to narrate the data, extracted from interview transcripts and authenticated via coding to ensure consistency.

Reliability signifies that the study's results can be consistently replicated. This was ensured by employing a thorough interview guide, the creation and maintenance of an empirical data database, and the adoption of formal computerized analysis techniques. Only data originally collected for this study were employed to address the research questions. Ensuring the stability of measures is crucial in estimating measurement reliability, and this study diligently considered this aspect. Utilizing computers, recording procedures, and monitoring materials played a pivotal role in estimating and evaluating measure stability. Consequently, the research design, particularly the in-depth interview discussions, contributed to increased

validity and reliability. These discussions explicitly explained various research processes and phases, enhancing research reliability. Malhotra (2010: 318) suggests that Reliability can be evaluated by establishing the correlation between scores obtained from multiple administrations of the scale. A stronger correlation indicates the scale's consistency in producing results, indicating reliability (Shukla, 2008: 84). Figure 4.3 presents different methods that can be utilized to assess reliability.

Figure 4:3: Approaches for Assessing Reliability



Source: Shukla (2008: 84)

4.11 Trustworthiness

Considerable diligence was invested in establishing trustworthiness within this study. Thematic analysis using Nvivo 10 (QSR International. n.d.) was selected for the qualitative analysis, enabling the comprehensive evaluation of trustworthiness (validity) and consistency (reliability) in this research. Loh (2013: 1) emphasizes the importance of addressing trustworthiness, narrative truth, verisimilitude, and utility to ensure the quality of any narrative study. The approach adopted was systematic and meticulously executed to uphold rigor in this research. In terms of credibility, this study endeavored to faithfully portray the phenomenon under investigation (Ady, 2018: 90; Cope, 2014: 89). The qualitative analysis involved conducting interviews and holding focus group discussions, leading to the emergence of thematic patterns such as the Influence of psychological factor (Cognitive and emotion), demographic factor, financial literacy and accounting information, investor personal attitude and perception (Regret /loss aversion and risk tolerance) and most significant factor in general in derivative market. The proximity of the two methods (focus group discussion and interviews) As emphasized by Nyumba et al. (2018: 23) and Flynn, Albrecht, and Scott (2018: 2), this serves as an indicator of the degree of authenticity and credibility (rigor and trustworthiness).

4.12 Chapter Summary

Even though non-probability sampling is associated with several limitations arising from the subjective process of sample selection can be advantageous, particularly when randomization is infeasible, especially in the case of a very large population. According to Etikan, Musa, and Alkassim (2016: 2), Convenience sampling and purposive sampling are both non-probability sampling methods employed by researchers to choose a subset of participants from a population. It can be of use when there are limited resources, time, and workforce, and when the study does not aim to produce findings that can be generalized to the entire population. In essence, the methodology chapter delved into the empirical (experiential) study, setting the benchmark for evaluating and concluding the research's quality. Consequently, this chapter revolved around the research methodology employed in this study. It elucidated the essential research processes, detailed the data collection instruments, offered a summary of the techniques used to evaluate reliability and validity, and outlined the procedures governing the administration and coordination of the research instruments. Additionally, it offered insights into the sampling technique employed, and it summarized the questionnaire and interview approaches used to ensure the credibility and consistency of the empirical findings. The next chapters present the empirical analysis and the interpretation of the results of the statistical study findings derived from the data collected through the questionnaires and interview inquiries.

CHAPTER FIVE

ANALYSIS AND INTERPRETATION

5.1. Introduction

This chapter presents the examination and interpretation of the statistical results derived from the quantitative questionnaire in the study. The targeted respondents were individual investors in South Africa who traded under the umbrella of the Johannesburg Stock exchange (JSE). Particularly in Johannesburg, a total of 414 valid responses were obtained by distributing questionnaires to investors via online social media, email, and in-person interactions. All respondents were aged 18 or older and held various occupations. To provide insights into the respondents, an analysis of their profiles is portrayed through pie charts and graphs, offering a concise representation of this study. The data obtained from the responses were analyzed using SPSS (version 27®), aligning with the research objectives.

5.2. Respondent Profile and Background Information

This section details the Respondent Demographic Profile

5.2.1. Gender

Figure 5.1 reflects the gender of the respondents.

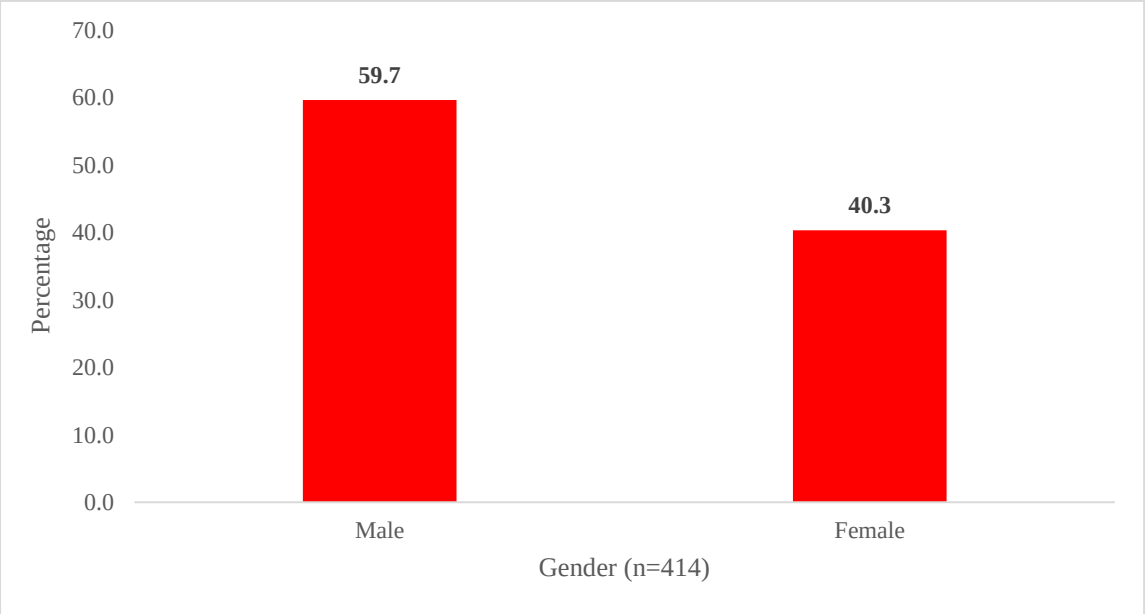


Figure 5.1: Gender of the respondents

The data in Table 5.1 shows that more than half (59.7%) of the respondents were males while females constitute 40.3% of them.

5.2.2 Age Group

Figure 5.2 shows the respondents' age group distribution.

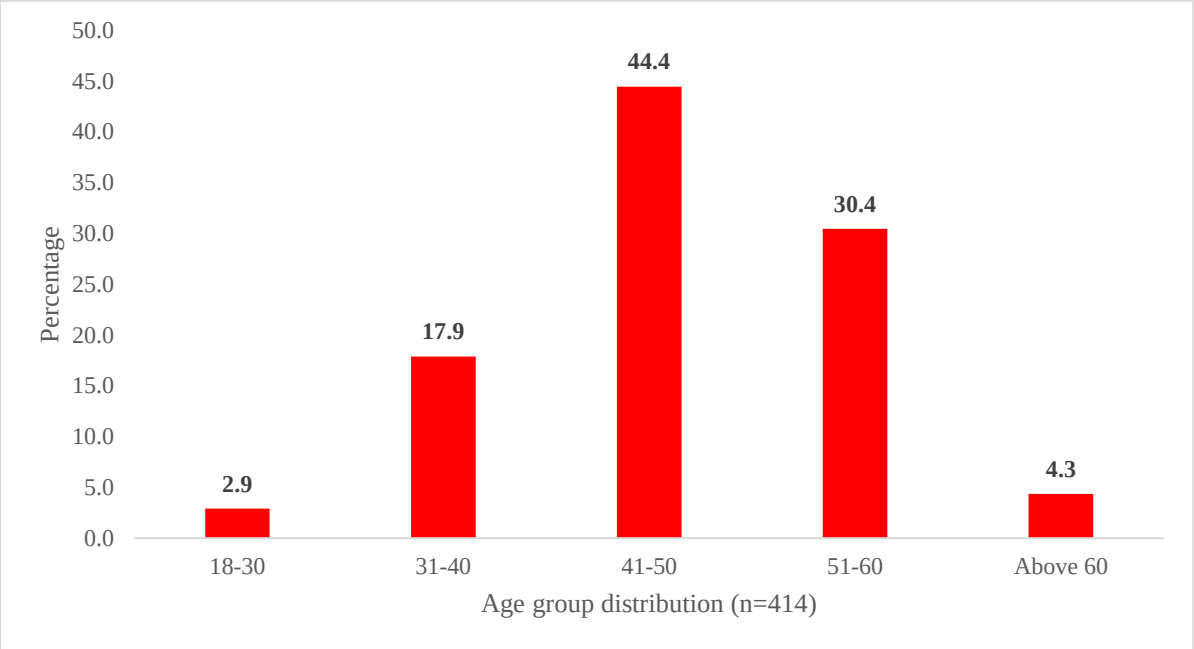


Figure 5.2: Age group distribution of the respondents

The data in Figure 5.2 shows that nearly half 44.4% respondents fell within the age range of 41-50 years, while 30.4% were in the 51-60 years age bracket, 17.9% were 31-40 years of age, 4.3% were above 60, and 2.9% within 18-30 years of age. The analysis suggests that of the respondents a good proportion (92.7%) fall within 31-60 years. This reflects the active years of employment in South Africa.

5.2.3. Marital Status

Figure 5.3's pie chart illustrates the marital status of the participants.

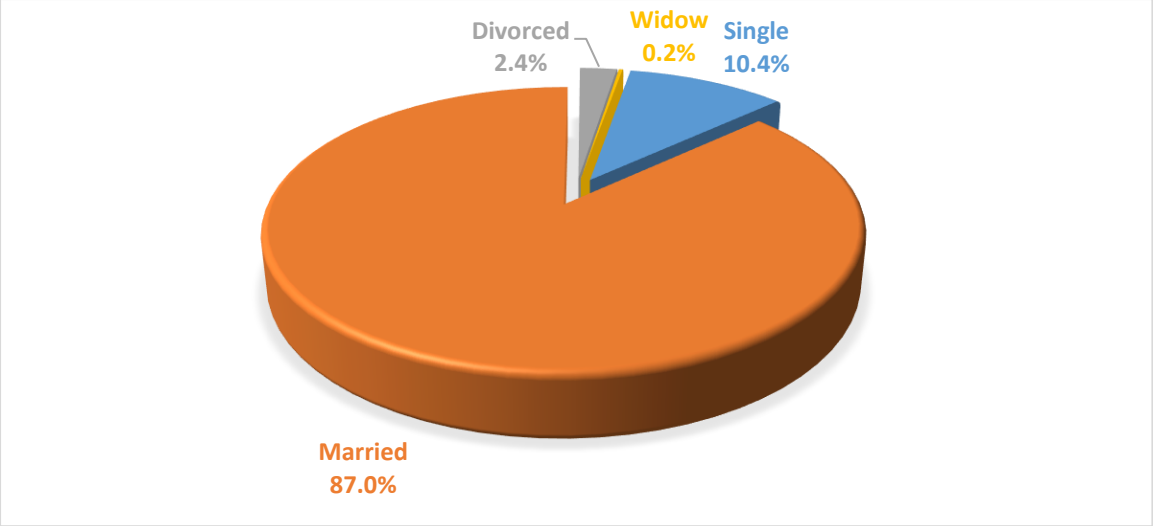


Figure 5.3: Marital status of the respondents (n=414)

The data in Figure 5.3 shows that most 87% of the respondents were married, 10.4% were single, 2.4% divorced, and less than 1% widowed.

5.2.4 Race

Figure 5.4 shows the race of the respondents.

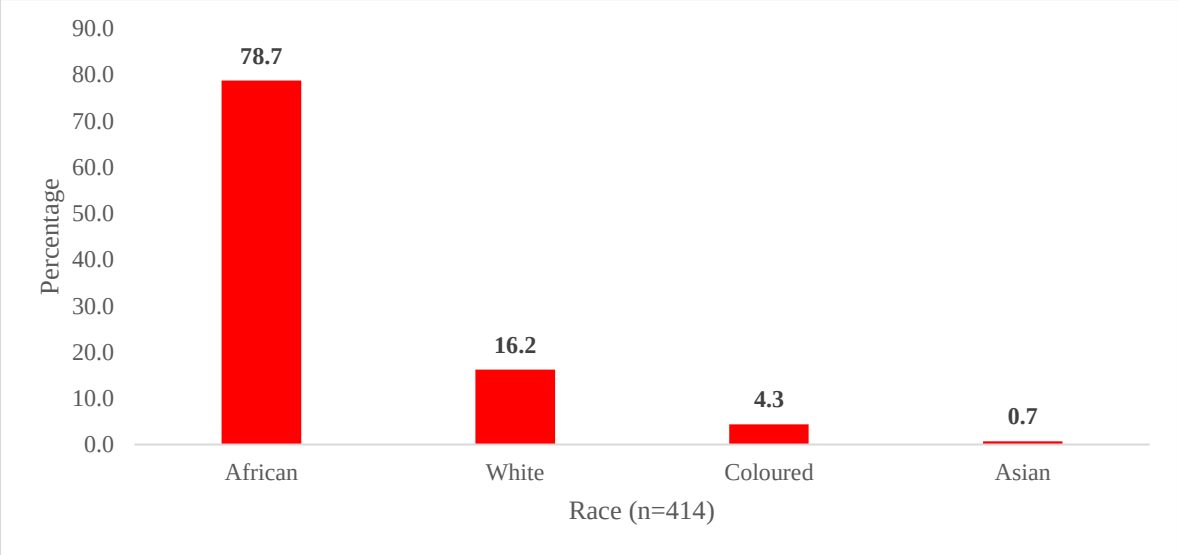


Figure 5.4: Race of the Respondents (n=414)

The data in Figure 5.4 shows that 78.7% of the respondents were African, followed by White (16.2%), Coloured (4.3%), and Asian (0.7%). This again appears to be a reasonable reflection of the racial distribution of the South African population.

5.2.5 Nationality

Table 5.1 reflects the nationality of the respondents.

Table 5.1: Respondents' Nationality

		Frequency	Percent
Nationality	South African	201	48.6
	Non-South African	213	51.4
	Total	414	100.0

The data in Table 5.1 shows that more than half (51.4%) of the respondents were Non-South African citizens while South African citizens constitute 48.6% of them.

5.2.6 Educational Level

Figure 5.5 depicts the information on the respondents' educational levels.

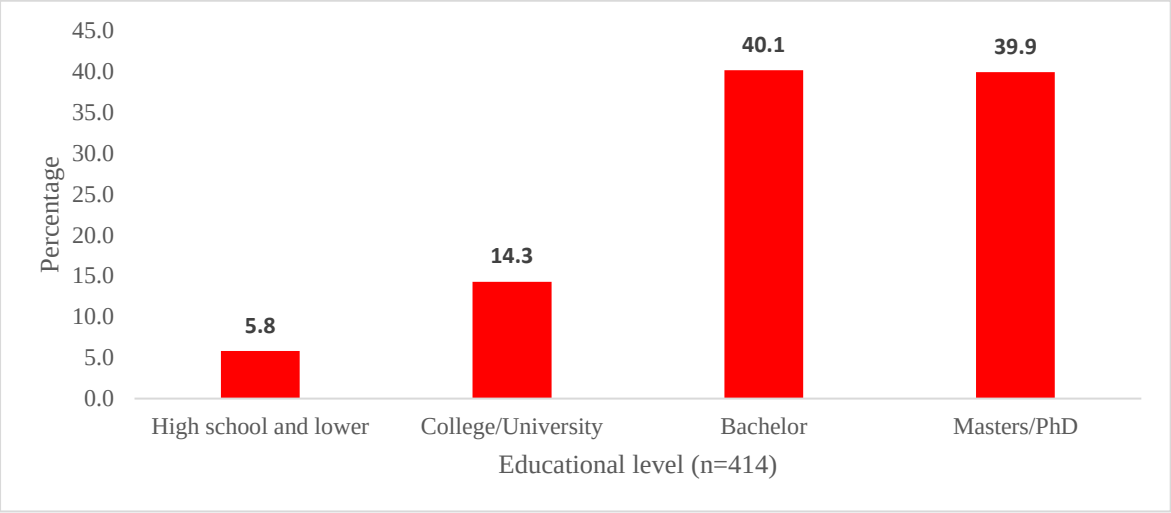


Figure 5.5: Respondents' Educational Level

From the data in Figure 5.5, 40.1% of respondents hold a Bachelor's degree qualification, 39.9% holds Master/PhD, 14.3% had a College/University qualification, and 5.8% had Higher School and lower qualification.

5.2.7. Years of Experience in the Market

The number of years the respondents have had in the investment market is given in Table 5.2.

Table 5.2: Respondents' years of experience in the market

		Frequency	Per cent
Experience in the market	Less than 3yrs	51	12.3
	3-5yrs	71	17.1
	6-10yrs	140	33.8
	More than 10yrs	151	36.5
	No experience	1	.2
	Total	414	100.0

The information in Table 5.2 indicates that 36.5% of the participants possess over 10years of experience in the market, 33.8% have had between 6-10 years of experience, 17.1% have accumulated 3-5 years of experience, and 12.3% have less than 3 years of experience. In total, the majority of respondents possess a minimum of 3 years of market experience.

5.2.8. Investing in more than One Securities Market

The number of respondents who invested in more than one securities market is given in Table 5.3.

Table 5.3: Respondents investing in more than one security market.

		Frequency	Per cent
I invest in more than one securities market	Yes	232	56.0
	No	182	44.0
	Total	414	100.0

The data in Table 5.3 show more than half 56% of the respondents invested in more than one securities market while 44% of them did not.

5.2.9. Occupation Type

Figure 5.6 depicts the information on the respondents' occupation types.

Figure 5.6: Respondents' occupation type

From the data in Figure 5.6, more than half 52.9% of respondents indicated private organization employed, 31.9% indicated self-employed, 13.5% indicated government employed, 1.4% were unemployed and 0.2% indicated None-Government organization.

5.2.10 Annual Income

The data in Figure 5.7 reflects the respondents' annual income.

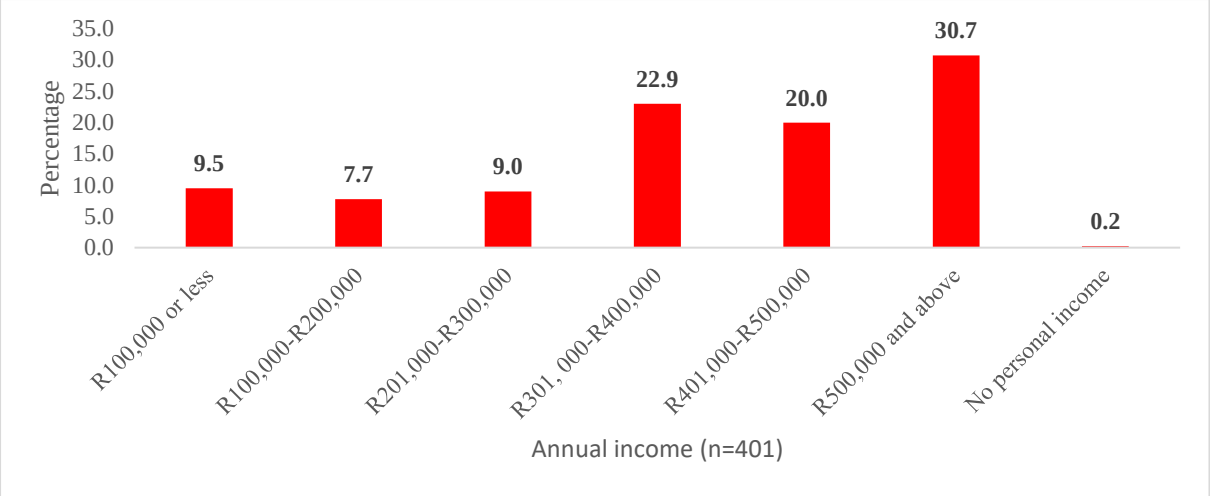


Figure 5.7: Respondents' Annual Income.

From the data in Figure 5.7, 30.7% of respondents earn R500, 000 and above annually, 22.9% earn between R301,000-R400, 000 annually, and 20% earn between R401, 000-R500, 000. On average, most (73.6%) of the respondents earn R301, 000 and above annually. It's

noteworthy that thirteen of the participants did not reveal their annual income while less than 1% did not earn any personal income.

5.3. Basic Information on Investors' Behaviour

This section details the basic information on the respondents' investment behaviour.

5.3.1. Factors Affecting Investment Decisions

The factors affecting the respondents' investment decision is given in Table 5.4

Table 5.4: Factors affecting respondents' investment decisions.

Factors	Responses n(%)			
	Yes	No	I don't know	Total
Do you think psychological factors affect investment decisions?	392 (94.7%)	19 (4.6%)	3 (0.7%)	414(100%)
Does demographic factor affect investment decisions?	349 (84.3%)	31(7.5%)	34(8.2%)	414 (100%)
Do you think accounting information affects investment decisions?	230 (55.6%)	47 (11.4%)	137 (33.1)	414 (100%)

The data in Table 5.4 show that most of the respondents think psychological factors (94.7%), demographic factors (84.3%), and accounting information (55.6%) affect their investment decisions. Overall, there was more support for psychological factors affecting investment decisions than demographic and accounting information.

5.3.2. The Effect of Financial Literacy on Investment Decisions

The data in Table 5.5 provides information on the impact of financial literacy on investment choices.

Table 5.5: Respondents description on the effect of financial literacy on investment

		Frequency	Percent
Describing the effect of financial literacy on investment decisions	Strong effect	382	95.5
	Low effect	18	4.5
	N	400	100.0

As shown in Table 5.5, most (95.5%) described the impact of financial literacy on investment choices is observed to be substantial. This implies that many of the respondents considered financial literacy critical on investment decisions. It is worth noting that not all of the 414 respondents provide response to the question in Table 5.5.

5.2.3. The Effect of Investor's Personal Attitude on Investment Decisions

Figure 5.8 depicts the effects of an investor's personal attitude on investment decisions.

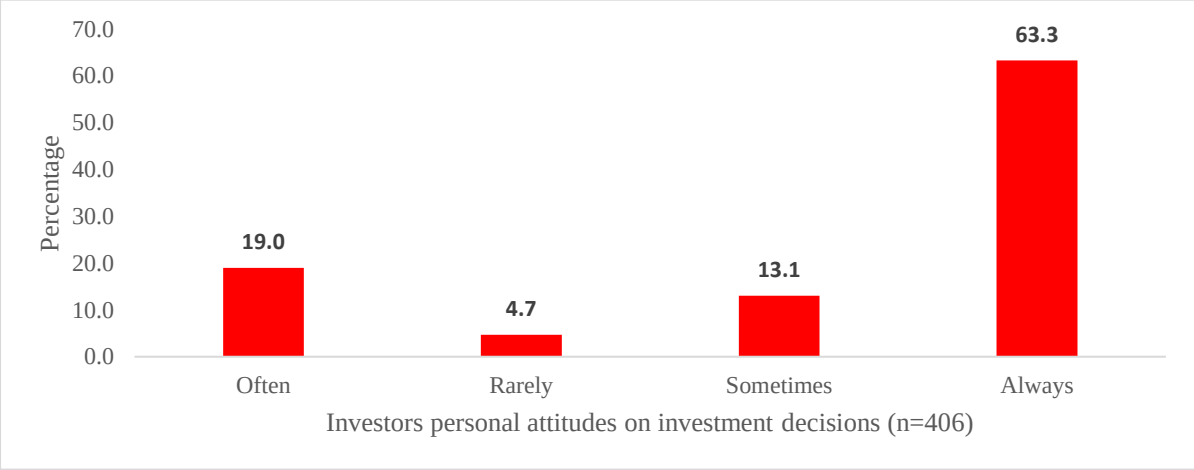


Figure 5.8: Response to investor's personal attitude effect on investment decision

The data in Figure 5.8 show that most (63.3%) of the respondents believed that an investor's personal attitude always affects the investment decision. It is worth noting that not all the 414 respondents provided their responses.

5.3.4. Influence of Investors' Risk Perception on Investment Decisions

The data in Table 5.6 provides information on the influence of investors' risk perception on investment decisions.

Table 5.6: Respondents' view on the influence of investors' risk perception on investment decisions

		Frequency	Percent
Do you think investor risk perception influences investment decisions?	Yes	375	90.6
	No	8	1.9

	Slightly	14	3.4
	Maybe	17	4.1
	Total	414	100.0

As shown in Table 5.6, most (90.6%) of the respondents think that investors' risk perception influences their investment decisions.

5.3.5. Factors Affecting Investment Decisions in the Derivatives (Financial) Market

Table 5.7 highlights the information on the most influencing factors that affect investment decisions in the derivatives (financial) market according to the respondents.

Table 5.7: Most influencing factors affecting investment decisions in the derivatives market

		Frequency	Percent
Factors	Accounting Information	18	4.3
	Accounting Information, Risk Perception	10	2.4
	Demographic Factors	18	4.3
	Demographic Factors, Accounting Information, Personal Attitude	1	.2
	Demographic Factors, Accounting Information, Personal Attitude, Risk Perception	1	.2
	Demographic Factors, Accounting Information, Risk Perception	1	.2
	Demographic Factors, Financial Literacy	2	.5
	Demographic Factors, Financial Literacy, Accounting Information, Personal Attitude, Risk Perception	6	1.4
	Demographic Factors, Financial Literacy, Accounting Information, Personal Attitude, Risk Perception, and other Factors	1	.2
	Demographic Factors, Financial Literacy, Accounting Information, Risk Perception	1	.2
	Demographic Factors, Financial Literacy, Personal Attitude, Risk Perception	3	.7

	Demographic Factors, Financial Literacy, Risk Perception	1	.2
	Demographic Factors, Personal Attitude, Risk Perception	2	.5
	Demographic Factors, Risk Perception	8	1.9
	Economy	1	.2
	Financial Literacy	47	11.4
	Financial Literacy, Accounting Information	2	.5
	Financial Literacy, Accounting Information, Personal Attitude, Risk Perception	1	.2
	Financial Literacy, Other Factors	1	.2
	Financial Literacy, Personal Attitude, Risk Perception	5	1.2
	Financial Literacy, Risk Perception	75	18.1
	Other Factors	4	1.0
	Personal Attitude	18	4.3
	Personal Attitude, Risk Perception	13	3.1
	Psychological Factors	2	.5
	Psychological Factors, Financial Literacy, Accounting Information, Risk Perception	1	.2
	Risk Perception	171	41.3
	Total	414	100.0

As shown in Table 5.7, most (41.3%) of the respondents indicated that risk perception is the most influencing factor that affects investment decisions in the derivatives (financial) market, followed by financial literacy. It is also worth noting that the combination of risk perception and financial literacy accounts for 18.1% of the responses. This implies that both risk perception and financial literacy are critical factors affecting investment choices in the financial derivatives market.

5.3.6. Most Important Factors for Investment Decisions

The data in Table 5.8 ranked the most important factors for an investment decision according to the respondents.

Table 5.8: Most important factors for investment decisions

		Frequency	Percent
Factors	Accounting Information	17	4.1
	Accounting Information, Risk Perception	3	.7
	Demographic Factors	15	3.6
	Demographic Factor, Financial Literacy, Accounting Information, Personal Attitude	1	.2
	Demographic Factors, Financial Literacy, Personal Attitude	1	.2
	Demographic Factors, Financial Literacy, Risk Perception	3	.7
	Demographic Factors	1	.2
	Financial Literacy	32	7.7
	Financial Literacy, Accounting Information	5	1.2
	Financial Literacy, Accounting Information, Risk Perception	3	.7
	Financial Literacy, Personal Attitude	1	.2
	Financial Literacy, Personal Attitude, Risk Perception	1	.2
	Financial Literacy, Risk Perception	9	2.2
	Personal Attitude	8	1.9
	Psychological Factors	42	10.1
	Psychological Factors, Accounting Information, Personal Attitude, Risk Perception	2	.5
	Psychological Factors, Accounting Information, Risk Perception	3	.7
	Psychological Factors, Demographic Factors	2	.5
	Psychological Factors, Demographic Factors, Accounting Information	1	.2
	Psychological Factors, Demographic Factors, Accounting Information, Personal Attitude	2	.5
	Psychological Factors, Demographic Factors, Accounting Information, Risk Perception	8	1.9
	Psychological Factors, Demographic Factors, Financial Literacy	3	.7

	Psychological Factor, Demographic Factor, Financial Literacy, Accounting Information, Personal Attitude	1	.2
	Psychological Factor, Demographic Factor, Financial Literacy, Accounting Information, Personal Attitude, Risk Perception	5	1.2
	Psychological Factor, Demographic Factor, Financial Literacy, Accounting Information, Risk Perception	2	.5
	Psychological Factor, Demographic Factor, Financial Literacy, Personal Attitude	1	.2
	Psychological Factor, Demographic Factor, Financial Literacy, Personal Attitude, Risk Perception	4	1.0
	Psychological Factor, Demographic Factor, Financial Literacy, Risk Perception	8	1.9
	Psychological Factor, Demographic Factor, Personal Attitude	2	.5
	Psychological Factor, Demographic Factor, Personal Attitude, Risk Perception	23	5.6
	Psychological Factor, Demographic Factor, Risk Perception	3	.7
	Psychological Factor, Financial Literacy	1	.2
	Psychological Factor, Financial Literacy, Accounting Information	1	.2
	Psychological Factor, Financial Literacy, Accounting Information, Personal Attitude	1	.2
	Psychological Factor, Financial Literacy, Accounting Information, Personal Attitude, Risk Perception	1	.2
	Psychological Factor, Financial Literacy, Accounting Information, Risk Perception	13	3.1
	Psychological Factor, Financial Literacy, Personal Attitude	20	4.8
	Psychological Factor, Financial Literacy, Personal Attitude, Risk Perception	48	11.6

	Psychological Factor, Financial Literacy, Risk Perception	71	17.1
	Psychological Factor, Personal Attitude	1	.2
	Psychological Factor, Personal Attitude, Risk Perception	8	1.9
	Psychological Factor, Risk Perception	13	3.1
	Psychological Factors	1	.2
	Psychological Factors, Financial Literacy, Accounting Information, Personal Attitude, Risk Perception	1	.2
	Risk Perception	22	5.3
	Total	414	100.0

The data in Table 5.8 show that more than 17.1% of the respondents ranked psychological factors, followed by financial literacy, and risk perception as the most important for an investment decision.

5.3.7. Priority for Investment

The data in Table 5.9 provides information on the respondents' priority for investment.

Table 5.9: Respondents' priority for investment

		Frequency	Percent
Priority for investment	Profit maximization	358	86.5
	Risk minimization	48	11.6
	None	7	1.7
	I don't know	1	.2
	Total	414	100.0

The data in Table 5.9 show that 86.5% of the respondents prioritized profit maximization, 11.6% prioritized risk minimization and seven of them claimed not to prioritize investment.

5.3.8. Description of the Respondents as an Investor

Table 5.10 provides information on the statements that best describe the respondents as an investor.

Table 5.10: Description of respondents as an investor

		Frequency	Percent
Which statement is true about you as an investor?	Willing to take substantial risks expecting to earn a substantial return	99	23.9
	Willing to take average risk expecting to earn average returns	196	47.3
	Willing to take above average risk expecting to earn above-average returns	114	27.5
	Not willing to take any risks	5	1.2
	Total	414	100.0

The data in Table 5.10 indicates that 47.3% of the respondents describe themselves as "Willing to take average risk expecting to earn average returns, followed by 27.5% who see themselves as "Willing to take above average risk expecting to earn above-average returns. The data also show that the five of the respondents were not willing to take any risks.

5.3.9 Self-description as an Investor

Table 5.11 provides information on the respondents' description of themselves as an investor.

Table 5.11: Respondents' description of themselves as an investor

		Frequency	Percent
Respondents' description of themselves as an investor	Active	105	25.4
	Active, Conservative	3	.7
	Active, Methodical	2	.5
	Active, Passive	4	1.0
	Conservative	79	19.1
	Methodical	48	11.6

	Methodical, Moderate	1	.2
	Moderate	132	31.9
	Optimistic	1	.2
	Passive	36	8.7
	Passive, Methodical	1	.2
	Passive, Moderate	1	.2
	Play safe	1	.2
	Total	414	100.0

The data in Table 5.11 show that 31.9% of the respondents described themselves as a moderate investor, 25.4% saw themselves as an active investor, 19.1% saw themselves as conservative, 11.6% saw themselves as methodical, 8.7% saw themselves as passive, and 0.2% each saw themselves as passive and play safe. Some of the respondents also described themselves in a combination of each of the aforementioned attributes.

5.4. Reliability Test

Prior to delving into the study's findings, this section places emphasis on the research instrument's reliability. The internal reliability of the component variables constituting psychological factors, behavioural factors, demographic factors, impact of financial literacy on investment choices, influence of personal attitude and perception on individual investors' investment decisions, factors impacting investment choices in the derivatives market, and guide to manage risk and maximise return was tested using Cronbach's Coefficient Alpha.

Table 5.12: Reliability test for the research instrument

Sections	Items	Dimensions	Cronbach's alpha
A	5	Psychological factors influencing investment decision	0.821
B	5	Behavioural factors influencing investors' decisions.	0.716
C	4	Demographic factors influencing investors' decisions.	0.807

D	5	Influence of financial literacy on investment decisions	0.685
E	4	Influence of accounting information on investment decisions	0.775
F	5	Influence of personal attitude and perception on individual investors ' investment decisions	0.576
G	5	Factors influencing investment decisions in the derivatives market	0.500
H	5	Guide to manage risk and maximise return	0.723
Total	38		0.820

Hair *et al.* (2006: 190) note that an alpha of 0.70 and above is regarded as acceptable. The data in Table 5.12 shows that the Cronbach's alpha coefficient for psychological factors (α=0.821), behavioural factors (α=0.716), demographic factors (α=0.807), accounting information (α=0.775), and guide to manage risk and maximise return (α=0.723) all exceeded the recommended threshold of 0.70, signifying that the instrument is adequately reliable. However, Cronbach's alpha coefficient for financial literacy (α=0.685), personal attitude (α=0.576), and factors influencing investments in the derivatives market (α=0.500) were below the recommended value of 0.70. This may be attributable to the level of inconsistency in how the respondents answered the sessions. In summary, the Cronbach's alpha coefficient for the amalgamation of all the items was determined to be favorable (α=0.820). This indicates that the questionnaire is a dependable tool for gauging the research constructs.

5.5 Section Analysis

This section details the responses gathered from the respondents in each session of the research questionnaire. The data were scrutinized in accordance with each research objective. Affirmative statements (strongly agree and agree) were consolidated as agreement, whereas negative statements (disagree and strongly disagree) were consolidated as disagreement. The mean value was employed to illustrate the extent of agreement and disagreement. A one-sample t-test was utilized to ascertain whether there is substantial concurrence or dissent with each statement. The average agreement score was assessed

against the central score of '3' to establish whether it significantly differs from '3'. The outcomes are succinctly presented in the subsequent sections.

5.5.1. Psychological Factors Influencing Investment Decision

This section explores small investors and investigates the psychological factors influencing their investment decision using factor analysis. The section, therefore, addresses the research objective One stated as: to explore small investors and investigate the psychological factors influencing their investment decision.

Table 5.13 details the scoring pattern of the respondents on psychological factors influencing investment decisions.

Table 5.13: Respondents' Scoring Pattern on Psychological Factors Influencing Investment Decision

Psychological factors:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**T**	**D.f.**	**p-value**
I stick with a consistent investment strategy even if the stock market is volatile.	P1	22 (5.3)	54 (13)	5 (1.2)	192 (46.4)	141 (34.1)	3.91 (1.161)	68.504	413	.000
I have a high level of self-confidence in my investment decision	P2	19 (4.4)	24 (5.8)	10 (2.4)	293 (70.8)	68 (16.4)	3.89 (0.907)	87.198	413	.000
I feel satisfied with my investment decision in the last year (including selling, buying, choosing stocks, and deciding the stock volume).	P3	24 (5.8)	73 (17.6)	24 (5.8)	198 (47.8)	95 (22.9)	3.64 (1.180)	62.864	413	.000
I can handle difficult situations in the stock market.	P4	10 (2.4)	53 (12.8)	18 (4.3)	231 (55.8)	102 (24.6)	3.87 (1.003)	78.598	413	.000
I rely on my investment decision on the past returns of the stock as an indicator of future returns.	P5	10 (2.4)	33 (8)	22 (5.3)	271 (65.5)	78 (18.8)	3.90 (0.878)	90.492	413	.000

As indicated in Table 5.13, a substantial majority (80.5%) of the participants demonstrated significant agreement with the statement 'I stick with a consistent investment strategy even if the stock market is volatile ($p<0.001$). There was significant agreement by most (87.2%) of the respondents on the statement 'I have a high level of self-confidence in my investment decision ($p<0.001$). There was significant agreement by most (70.7%) of the respondents on the statement 'I feel satisfied with my investment decision in the last year (including selling, buying, and choosing stocks, and deciding the stock volume)' ($p<0.001$). There was significant agreement by most (80.4%) of the respondents on the statement 'I can handle difficult situations in the stock market' ($p<0.001$). There was significant agreement by most (84.3%) of the respondents on the statement 'I rely on my investment decision on the past returns of the stock as an indicator of future returns ($p<0.001$).

On average, the statement with the strongest agreement is the first statement (P1) which stated, "I stick with a consistent investment strategy even if the stock market is volatile" ($M= 3.91$; $SD= 1.161$; $t (413) = 68.504$, $p< 0.001$).

5.5.2. Identifying Behavioural and Demographic Factors Influencing Investment Decision

This section identifies the behavioural and demographic factors that influence investors' decisions. The section, therefore, addresses research objective two stated as: To identify the behavioural and demographic factors that influence investors' decisions.

5.5.2.1 Behavioural Factors Influencing Investment Decision

Table 5.14 details the scoring pattern of the respondents on behavioural factors influencing investment decisions.

Table 5.14: Respondents' scoring pattern on behavioural factors influencing investment decision.

Behavioural factors:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**t**	**Df**	**p-value**
Investors have some level of tolerance for investment risks	B1	7 (1.7)	9 (2.2)	2 (0.5)	231 (55.8)	165 (39.9)	4.30 (0.744)	117.520	413	.000
Investors are usually happy with	B2	5 (1.2)	15 (3.6)	8 (1.9)	273	113 (27.3)	4.14 (0.725)	116.267	413	.000

the returns on their investment.					(65.9)					
After a prior loss, I become more risk-averse.	B3	4 (1.0)	17 (4.1)	0 (0)	247 (59.7)	146 (35.3)	4.24 (0.739)	116.706	413	.000
Other investors' decisions of chosen stock types have an impact on my investment decisions.	B4	6 (1.4)	22 (5.3)	2 (0.5)	241 (58.2)	143 (34.5)	4.19 (0.811)	105.087	413	.000
I am attracted to the affordable market price.	B5	5 (1.2)	13 (3.1)	40 (9.7)	298 (72)	58 (14)	3.94 (0.685)	117.185	413	.000

As shown in Table 5.14, the majority of respondents demonstrated significant agreement on the statement 'Investors have some level of tolerance for investment risks' (95.7%), 'Investors are usually happy with the returns on their investment' (93.2%), and 'After a prior loss, I become more risk-averse' (95%). There was significant agreement by most of the respondents on the statement 'Other investors' decisions of chosen stock types have an impact on my investment decisions (92.7%), and 'I am attracted to the affordable market price' (86%). On average, the statement with the strongest agreement is the first statement (B1) which was stated as "Investors have some level of tolerance for investment risks" ($M=4.30$; $SD=0.744$; $t(413)=117.520$, $p<0.001$). This implies that respondents considered investors' level of tolerance as the most significant behavioural factor influencing investment decisions.

5.5.2.2 Demographic Factors Influencing Investment Decision

Table 5.15 details the scoring pattern of the respondents on demographic factors influencing investment decisions.

Table 5.15: Respondents' scoring pattern on demographic factors influencing investment decision.

Demographic factors:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**t**	**Df**	**p-value**

Increase income level raises my interest in financial investment	D1	11 (2.7)	19 (4.6)	2 (0.5)	266 (64.3)	116 (28)	4.10 (0.836)	99.901	413	.000
My family structure will affect my investment decision	D2	16 (3.9)	25 (6)	20 (4.8)	301 (72.7)	52 (12.6)	3.84 (0.860)	90.862	413	.000
My income level affects the maturity date of the investment I make.	D3	16 (3.9)	41 (9.9)	28 (6.8)	232 (56)	97 (23.4)	3.85 (1.013)	77.365	413	.000
Investor’s educational levels affect their investment decisions	D4	17 (4.1)	15 (3.6)	4 (1.0)	258 (62.3)	120 (29)	4.08 (0.899)	92.410	413	.000

As shown in Table 5.15, there was significant agreement by most of the respondents on the statement ‘Increase income level raises my interest in financial investment’ (92.3%), ‘My family structure will affect my investment decision (85.3%), ‘my income level affect the maturity date of the investment I make (79.4%), and ‘Investor’s educational levels affect their investment decisions (91.3%). On average, the statement with the strongest agreement is the first statement (D1) which was stated as “Increase income level raises my interest in financial investment” ($M=4.10$; $SD=0.836$; $t(413)=99.901$, $p<0.001$). This implies that respondents considered the increased income level as the most significant demographic factor influencing investment decisions.

5.5.3 Determining the Influence of Financial Literacy and Accounting Information on Investment

This section identifies the financial literacy and accounting information influencing the investment. The section, therefore, addresses research objective three stated as: To determine the influence of financial literacy and accounting information on investment decisions.

5.5.3.1. Influence of Financial Literacy on Investment

Table 5.16 details the scoring pattern of the respondents on the influence of financial literacy on investment decisions.

Table 5.16: Respondents' scoring pattern on the influence of financial literacy on investment decision

Influence of financial literacy:		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean (SD)	T	Df	p-value
I am knowledgeable about investing	FL1	4 (1)	17 (4.1)	2 (0.5)	292 (70.5)	99 (23.9)	4.12 (0.694)	120.946	413	.000
Investors' have sufficient information regarding investment tools.	FL2	13 (3.1)	218 (52.7)	4 (1)	158 (38.2)	21 (5.1)	2.89 (1.108)	53.124	413	.000
Investors are all financially literate when it comes to investment decision-making.	FL3	48 (11.6)	212 (51.2)	6 (1.4)	136 (32.9)	12 (2.9)	2.64 (1.138)	47.237	413	.000
I pay close attention to financial news.	FL4	8 (1.9)	13 (3.1)	6 (1.4)	344 (83.1)	43 (10.4)	3.97 (0.646)	124.911	413	.000
I rely on my previous experience in the market for the next investment	FL5	5 (1.2)	25 (6)	0 (0)	282 (68.1)	102 (24.6)	4.09 (0.768)	108.320	413	.000

As shown in Table 5.16, there was significant agreement by most of the respondents on the statement 'I am knowledgeable about investing' (94.4%), 'I pay close attention to financial news (93.5%), and 'I rely on my previous experience in the market for the next investment (92.7%). This implies that knowledge about investment, close attention to financial news and previous experience in the market are critical financial literacy that influences investment decisions. On the contrary, there was significant disagreement by most of the respondents on the statement 'Investors have sufficient information regarding investment tools (55.8%), and Investors are all financially literate when it comes to investment decision-making (62.8%). This implies that respondents do not think investors have sufficient information regarding investment tools. This can be supported by those who do not believe investors are financially literate enough when it comes to investment decisions. On average, the statement with the strongest agreement is the first statement (FL1) which was stated as "I am knowledgeable about investing" ($M= 4.12$; $SD= 0.694$; $t (413) = 120.946$, $p< 0.001$).

5.5.3.2. Influence of Accounting Information on Investment Decision

Table 5.17 details the scoring pattern of the respondents on the influence of accounting information on investment decisions.

Table 5.17: Respondents' scoring pattern on the influence of accounting information on investment decision.

Accounting information:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**T**	**Df**	**p-value**
I study the financial statement of the firm to make an investment decision	A1	4 (1)	15 (3.6)	1 (0.2)	264 (63.8)	130 (31.4)	4.21 (0.711)	120.502	413	.000
The firms' condition as revealed by Financial statements matters to investors when investing.	A2	4 (1)	13 (3.1)	1 (0.2)	282 (68.1)	114 (27.2)	4.18 (0.677)	125.622	413	.000
The past performance of the firm's stock affect the decision-making of investors.	A3	5 (1.2)	15 (3.6)	12 (2.9)	276 (66.7)	106 (25.6)	4.12 (0.725)	115.550	413	.000
I believe that my skill and knowledge of the derivative market can help me to outperform in the market	A4	0 (0)	23 (5.6)	11 (2.7)	267 (64.5)	113 (27.3)	4.14 (0.710)	118.441	413	.000

As shown in Table 5.17, there was significant agreement by most of the respondents on the statement 'I study the financial statement of the firm to make an investment decision' (95.2%), and 'The firms' condition as revealed by Financial statements matters to investors when investing' (95.3). There was also significant agreement on the statement 'Past performance of the firm's stock affects the decision-making of investor's (92.3%), and 'I believe that my skill and knowledge of the derivative market can help me to outperform in the market (91.8%). On average, the statement with the strongest agreement is the first statement (A1) which was stated as "I study the financial statement of the firm to make an investment decision" ($M=4.21$; $SD=0.711$; $t(413)=120.502$, $p<0.001$). This implies that respondents considered the financial statement of the firm as the most significant accounting information influencing investment decision.

5.5.4. The Influence of Personal Attitude and Perception on Investment Decisions

This section aims to understand the influence of personal attitude and perception on an individual's investors' investment decisions. The section, therefore, addresses research objective four stated as: To understand the influence of personal attitude and perception on individual investors' investment decisions.

Table 5.18 details the scoring pattern of the respondents on the influence of personal attitude and perception on individual investors' investment decisions.

Table 5.18: Respondents' scoring pattern on the influence of personal attitude and perception on investment decision.

Influence of personal attitude and perception of individual investors:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**T**	**Df**	**p-value**
I regularly invest on my own	PA1	5 (1.2)	35 (8.5)	20 (4.8)	304 (73.4)	50 (12.1)	3.87 (0.774)	101.604	413	.000
I tend to reduce risk through portfolio diversification	PA2	4 (1)	14 (3.4)	0 (0)	272 (65.7)	124 (30)	4.20 (0.694)	123.210	413	.000
When my investment does not produce the results that I hope for, I will consult with financial experts before taking any further action	PA3	17 (4.1)	42 (10.1)	161 (38.9)	137 (33.1)	57 (13.8)	3.42 (0.985)	70.674	413	.000
I buy hot stocks and avoid stocks that perform poorly	PA4	16 (3.9)	14 (3.4)	6 (1.4)	318 (76.8)	60 (14.5)	3.95 (0.801)	100.287	413	.000
I would increase the sum of my stock market holdings if in the last month the aggregate trading volume in the stock market was higher than usual.	PA5	15 (3.6)	100 (24.2)	168 (40.6)	116 (28)	15 (3.6)	3.04 (0.901)	68.610	413	.000

As shown in Table 5.18, there was significant agreement by most of the respondents on the statement ‘I regularly invest on my own (85.5%), ‘I tend to reduce risk through portfolio diversification (95.7%), and I buy hot stocks and avoid stocks that perform poorly (91.3%). Nearly half (46.9%) of the respondents agreed with the statement ‘When my investment does not produce the results that I hope for, I will consult with financial experts before taking any further action. On the contrary, 40.6% of them were neutral with the statement ‘I would increase the sum of my stock market holdings if in the last month the aggregate trading volume in the stock market was higher than usual. On average, the statement with the strongest agreement is the second statement (PA2) which was stated as “I tend to reduce risk through portfolio diversification” ($M=4.20$; $SD=0.694$; $t(413)=123.210$, $p<0.001$).

5.6. Relationship Between Socio-Demographic Variables Constructs

The relationship between the participants demographic characteristics (gender, age, marital status, race, and nationality, Educational Level, Years of experience, occupation type and annual income) and the constructs influencing investment decisions (psychological, behavioural, demographic, financial literacy, accounting information, and personal attitude) was conducted using a one-way Analysis of Variance (ANOVA). The results are summarised in Table 5.18. The ANOVA value calculated for gender reveals a statistically significant variance among the respondents concerning financial literacy ($P=0.027$). It was found that the mean value measured for the male respondents ($M=3.60\pm0.549$) was higher when compared to those measured for the females ($M=3.46\pm0.653$). This suggests that males agree more to financial literacy influencing investment decisions. No statistically significant differences were found in the influence of psychological, behavioural, demographic, accounting information, and personal attitude ($P>0.05$).

Concerning age groups and their impact on investment decisions, the obtained ANOVA value indicates that there was no statistically significant difference observed in terms of psychological factors, financial literacy, and personal attitude ($P>0.05$). On the contrary, the ANOVA values indicate there were the statistically significant difference for behavioural ($P=0.02$), demographic ($P=0.011$), and accounting information ($p<0.006$). It was found that the highest agreement for behavioural factors was measured for respondents within 51-60 years ($M=4.24\pm0.381$) while those within 60 and above years had the highest agreement for demographic ($M=4.26\pm0.277$) and accounting information ($M=4.49\pm0.326$). Regarding the marital status of the respondents, the ANOVA value suggests that there is no statistically significant difference in relation to demographic factors, and persona attitudes ($P>0.05$). There

were, however, statistically significant differences measured for psychological factors ($p<0.001$), behavioural ($P=0.007$), financial literacy ($P=0.043$), and accounting information ($P=0.006$). It was found that the highest agreement for psychological ($M=4.20 \pm 0.000$), behavioural ($M=4.20 \pm 0.000$), and accounting information ($M=4.50 \pm 0.000$) were measured for respondents who are widows while those who are married had the highest agreement for financial literacy ($M=3.56 \pm 0.573$).

With regards to the respondents' race, the ANOVA value suggests that there is no statistically significant difference concerning financial literacy ($P>0.05$). However, there were statistically significant differences measured for psychological factors ($P=0.003$), behavioural factors ($P=0.019$), demographic factors ($P=0.027$), accounting information ($p<0.001$), and personal attitude ($p<0.001$). It was found that White respondents had the highest level of agreement for psychological ($M=4.17 \pm 0.554$), behavioural ($M=4.21 \pm 0.503$), and accounting information ($M=4.45 \pm 0.332$). On the other hand, Asian respondents had the highest agreement for demographic factors ($M=4.08 \pm 0.382$) while Africans had the highest agreement for personal attitude ($M=3.77 \pm 0.449$). Regarding the respondents' nationality, the ANOVA value suggests that there is no statistically significant difference concerning behavioural factors, demographic factors and the level of agreement ($P>0.05$). However, there were statistically significant differences measured for psychological factors ($P=0.020$), financial literacy factors ($P=0.002$), and personal attitude ($p<0.001$). It was found that South African nationals had the highest level of agreement for psychological ($M=3.94 \pm 0.787$) and financial literacy ($M=4.25 \pm 0.540$) while non-South African nationals had the highest for personal attitude ($M=3.80 \pm 0.496$).

Regarding the respondents' education level, the ANOVA value suggests that there is no statistically significant difference concerning financial literacy ($P>0.05$). However, there were statistically significant differences measured for psychological factors ($p<0.001$), behavioural factors ($p<0.001$), demographic factors ($P=0.016$), accounting information ($p<0.001$), and personal attitude ($p<0.001$). It was found that respondents who hold Masters/PhD qualifications had the highest level of agreement for psychological ($M=3.97 \pm 0.831$), behavioural ($M=4.23 \pm 0.458$), and demographic factors ($M=4.07 \pm 0.636$), and accounting information ($M=4.24 \pm 0.512$). Respondents with College/University level qualifications had the highest agreement for personal attitude ($M=3.80 \pm 0.486$). For the respondents' years of experience in the investment market, the ANOVA value indicates that there is no statistically significant difference concerning demographic factors and personal attitudes and their level of agreement ($P>0.05$). However, there were statistically significant differences measured for psychological factors ($p<0.001$), behavioural factors ($P=0.003$), financial literacy ($P=0.009$),

and accounting information (P=0.004). It was found that respondents with more than 10 years of experience in the investment market had the highest level of agreement for psychological (M=3.97 ± 0.831), behavioural (M=4.23 ± 0.458), and demographic factors (M=4.05 ± 0.675), and accounting information (M=4.24±0.556). On the other hand, respondents with no experience had the highest agreement for behaviour (M=4.60±0.000), and financial literacy (M=4.00±0.000).

For the respondents in more than one securities market, the ANOVA value indicates that there is no statistically significant difference with respect to psychological factors, behavioural factors, demographic factors, financial literacy, personal attitudes and their level of agreement (P>0.05). However, there were statistically significant differences measured for accounting information (P=0.002). It was found that respondents with more than one securities market had the highest level of agreement (M=4.23±0.509). There were no statistically significant differences with respect to respondents' occupational type (P>0.05). For the respondents' annual income, the ANOVA value indicates that there is no statistically significant difference with respect to demographic factors, personal attitudes, and their level of agreement (P>0.05). However, there were statistically significant differences measured for psychological factors (p<0.001), behavioural factors (p<0.002), financial literacy (p<0.001), and accounting information (p<0.001). It was found that respondents with higher annual income earning between R501, 000 and above had the highest level of agreement for psychological factors (M=4.00±0.784), behavioural factors (M=4.22±0.422), and financial literacy (M=4.12±0.624) while those who earn between 401,000-R500, 000 had the highest agreement for accounting information (M=4.24±0.424).

Table 5.19: Association between constructs and respondents' socio-demographic variables

Socio-demographic	**Psychological**	**Behavioural**	**Demographic**	**Financial literacy**	**Accounting information**	**Personal attitude**
	M±SD	M±SD	M±SD	M±SD	M±SD	M±SD
Gender						
Male	3.83±.768	4.17±.447	4.00±.683	3.60±.549	4.19±.513	3.72±.517
Female	3.84±.821	4.16±.588	3.92±.771	3.46±.653	4.12±.590	3.66±.499
Sig.	0.768	0.901	0.278	0.027**	0.221	0.257
Age group						
18-30	3.82±0.924	3.83±0.975	3.88±0.962	3.67±0.936	3.88±0.787	3.97±.306

31-40	3.71±0.979	4.06±0.632	3.73±1.001	3.52± 0.734	4.07±0.732	3.65± .700
41-50	3.86±0.755	4.18±0.493	3.99±0.619	3.58± 0.568	4.14±0.509	3.73± .417
51-60	3.87±0.713	4.24±0.381	4.05±0.647	3.45± 0.480	4.23±0.434	3.67± 0.502
60 and above	4.07 ±0.647	4.09 ±0.276	4.26 ±0.277	3.76± 0.671	4.49±0.326	3.50± 0.546
Sig.	0.413	0.020**	0.011**	0.157	0.006***	0.096
Marital status						
Single	3.37±1.057	3.98±0.671	3.82±0.745	3.51± 0.749	3.94±0.667	3.68± 0.564
Married	3.92±0.708	4.20±0.474	3.98±0.715	3.56± 0.573	4.20±0.515	3.70± 0.486
Divorced	3.24±1.289	3.82±0.643	4.10±0.766	3.24± 0.506	3.85±0.784	3.64± 1.001
Widow	4.20±0.000	4.20±0.000	4.75±0.000	2.20± 0.000	4.50±0.000	3.40± 0.000
Sig.	0.000***	0.007***	0.324	0.043**	0.006***	0.920
Race						
African	3.78±.805	4.18±.418	4.02±.567	3.53± 0.586	4.14±0.521	3.77± 0.449
White	4.17±.554	4.21±.503	3.75±1.160	3.65± 0.573	4.45±0.332	3.41± 0.612
Coloured	3.66±0.991	3.80±0.931	3.82±0.954	3.78± 0.808	3.44±0.860	3.47± 0.662
Asian	3.73±0.642	4.13±0.231	4.08±0.382	3.33± 0.611	4.00±0.00	3.13± 0.462
Sig.	0.003***	0.019**	0.027**	0.243	0.000***	0.000**
Nationality						
South African	3.94±.787	4.17±.508	3.98±.821	3.52± .592	4.25±.524	3.59± .503
Non-South African	3.76±.782	4.15±.508	3.96±.610	3.56± .601	4.08±.556	3.80± .496
Sig.	0.020**	0.701	0.791	0.527	0.002***	0.000***
Education level						
High school or lower	3.05±1.286	3.63±1.095	3.58±1.100	3.31± 0.994	3.47±0.971	3.19± 0.897
College/University	3.85±0.697	4.08±0.485	3.96±0.609	3.63± 0.604	4.18±0.531	3.80± 0.486

Bachelor	3.83±0.600	4.21±0.371	3.94±0.751	3.51± 0.564	4.18±0.422	3.70± 0.456
Masters/PhD	3.97±0.831	4.23±0.458	4.07±0.636	3.58± 0.542	4.24±0.512	3.72± 0.455
Sig.	0.000***	0.000***	0.016**	0.108	0.000***	0.000***
Experience in the market						
Less than 3yrs	3.49±1.102	4.02±0.758	3.93±0.709	3.52± 0.815	3.93±0.747	3.67± 0.797
3-5yrs	3.63±0.934	4.06±0.658	4.02±0.567	3.37± 0.574	4.08±0.576	3.66± 0.368
6-10yrs	3.86±0.605	4.14±0.432	3.89±0.818	3.53± 0.535	4.20±0.417	3.68± 0.475
More than 10yrs	4.05±0.675	4.28±0.340	4.03±0.687	3.64± 0.553	4.24±0.536	3.74± 0.478
No experience	3.40±0.000	4.60±0.000	4.75±0.000	4.60± 0.000	4.00±0.000	4.00± 0.000
Sig.	0.000***	0.003***	0.318	0.009***	0.004***	0.764
Investing in more than one securities market						
Yes	3.88±0.803	4.19±0.525	3.94±0.817	3.58± 0.581	4.23±0.509	3.66± 0.561
No	3.80±0.770	4.14±0.484	4.01±0.573	3.50± 0.614	4.07±0.578	3.74± 0.434
Sig.	0.286	0.340	0.310	0.212	0.002***	0.130
Occupational type						
Government employed	4.12±0.903	4.20±0.659	4.10±0.614	3.56± 0.623	4.24±0.632	3.71± 0.462
Private organisation	3.76±0.838	4.13±0.538	3.90±0.802	3.58± 0.607	4.17±0.529	3.70± 0.578
Self-employed	3.86±0.631	4.21±0.357	4.03±0.610	3.49± 0.556	4.14±0.508	3.69± 0.401
Unemployed	3.87±0.468	3.97±0.612	4.08±0.342	3.27± 0.836	3.63±0.891	3.70± 0.562
Non-governmental organisation	3.60±0.000	4.20±0.000	5.00±0.000	3.60± 0.000	4.25±0.000	4.00± 0.000
Sig.	0.051	0.517	0.124	0.537	0.125	0.976
Annual income						
R100,000 or less	3.21±1.185	3.84±0.975	3.74±0.991	3.34± 0.973	3.72±0.912	3.59± 0.683

R100,000-200,000	3.66±0.848	4.07±0.486	3.82±0.684	3.83±0.659	3.94±0.809	3.74±0.795
R201, 000-300,000	3.84±0.751	4.29±0.304	3.83±0.797	3.71±0.606	4.18±0.696	3.86±0.565
R301, 000-400,000	3.94±0.530	4.18±0.425	4.00±0.544	3.49±0.477	4.23±0.411	3.70±0.364
R401,000-500,000	3.84±0.722	3.19±0.422	3.94±0.837	3.45±0.537	4.24±0.424	3.67±0.514
R501,000 and above	4.00±0.784	4.22±0.422	4.12±0.624	3.56±0.478	4.23±0.340	3.65±0.420
No personal income	4.00±0.000	4.00±0.000	4.00±0.000	2.00±0.000	4.00±0.000	4.00±0.000
Sig.	0.000***	0.002***	0.058	0.000***	0.000***	0.313

*** = p < 0.001 ; ** = p < 0.05.

5.7 Most significant factors influencing investment decisions in the derivative market

This section aims to identify from the perspective of the respondents, the most significant factors impacting investment decisions in the derivative market. The section, therefore, addresses research objective five stated: To identify the most significant factors that could influence investment decisions in the derivatives market.

Table 5.20 details the scoring pattern of the respondents on the most significant factors influencing investment decisions in the derivative market.

Table 5.20: Respondents' scoring pattern on the most significant factors influencing investment decisions in the derivative market.

Most significant factors influencing investment decisions in the derivatives market:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**T**	**Df**	**p-value**
I forecast the change in stock prices in the future based on	F1	3 (0.7)	92 (22.2)	101 (24.4)	192 (46.4)	26 (6.3)	3.35 (0.919)	74.260	413	.000

the recent stock prices										
I believe that I am less likely than many others to suffer from bad events.	F2	16 (3.9)	57 (13.8)	6 (1.4)	249 (60.1)	86 (20.8)	3.80 (1.041)	74.295	413	.000
Market information is important for my stock investment	F3	0 (0)	8 (1.9)	13 (3.1)	274 (66.2)	119 (28.7)	4.22 (0.591)	145.105	413	.000
To set up my investment decision. I use financial models for investment.	F4	6 (1.4)	22 (5.3)	87 (21)	260 (62.8)	39 (9.4)	3.73 (0.760)	99.929	413	.000
I utilise technical analysis while investing.	F5	6 (1.4)	27 (6.5)	82 (19.8)	228 (55.1)	71 (17.1)	3.80 (0.850)	90.956	413	.000

As shown in Table 5.20, there was significant agreement by most of the respondents on the statement 'I believe that I am less likely than many others to suffer from bad events' (80.9%), 'Market information is important for my stock investment' (94.9%), 'To set up my investment decision. I use financial models for investment' (72.2%) and I utilise technical analysis while investing (72.2%). More so, 52.7% of the respondents agreed with the statement 'I forecast the change in stock prices in the future based on the recent stock prices. On average, the statement with the strongest agreement was the third statement (F3) which stated, "Market information is important for my stock investment" ($M=4.22$; $SD=0.591$; $t(413)=145.105$, $p<0.001$). This implies that the respondents considered marketing information as the predominant factor shaping investment decisions in the derivative market.

5.8. To Develop a Framework to Serve as a Possible Guide to Manage Risk and Maximise Return

Most Significant Factors Influencing Investment Decisions in the Derivative Market: This section aims to draw from the respondents' perspective, a framework that may serve as a possible guide to managing risk and maximise return. The section, therefore, addresses the research objective six stated: To develop a framework to serve as a possible guide to manage

risk and maximise return. Table 5.21 details the scoring pattern of the respondents on the possible guide to manage risk and maximise return.

Table 5.21: Respondents' scoring pattern on possible guide to manage risk and maximise return.

Guide to manage risk and maximise return:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**	**T**	**Df**	**p-value**
Investors speak to a consultant before investing in the financial market.	G1	38 (9.2)	95 (22.9)	131 (31.6)	118 (28.5)	32 (7.7)	3.03 (1.092)	56.381	413	.000
Investors always set objectives which they want to achieve in their investments.	G2	3 (0.7)	8 (1.9)	31 (7.5)	314 (75.8)	58 (14)	4.00 (0.599)	136.127	413	.000
Investors have plans to make their investment a successful one	G3	4 (1.0)	20 (4.8)	113 (27.3)	204 (49.3)	73 (17.6)	3.78 (0.826)	93.096	413	.000
Wealth maximisation is a goal for all investors when making decisions.	G4	5 (1.2)	9 (2.2)	21 (5.1)	268 (64.7)	111 (26.8)	4.14 (0.705)	119.452	413	.000
All investors always want to improve their financial status rapidly.	G5	2 (0.5)	10 (2.4)	33 (8)	227 (54.8)	142 (34.3)	4.20 (0.724)	118.083	413	.000

As shown in Table 5.21, there was significant agreement by most of the respondents with the statement ‘Investors always set objectives which they want to achieve in their investments’ (89.8%), and ‘Investors have plans to make their investment a successful one (66.9%). Other statements where there was significant agreement include ‘Wealth maximisation is a goal for all investors when making decisions (91.5%) and ‘All investors always want to improve their financial status rapidly’ (89.1%). More of the respondents appeared to be neutral with the statement ‘Investors speak to a consultant before investing in the financial market’ (31.6%). This means that the respondents neither agreed nor disagreed that investors speak to a consultant before investing in the financial market. On average, the statement with the strongest agreement was the fifth statement (G5) which stated, “All investors always want to improve their financial status rapidly” ($M=4.20$; $SD=0.724$; $t(413)=118.083$, $p<0.001$).

5.9 Factor Analysis and Validation of the Research Constructs

To validate the factors influencing investment decisions (psychological, behavioural, demographic, financial literacy, accounting information, and personal attitudes), exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted for factor analysis. As per Watkins' report (2018: 220), factor analysis aids in identifying shared factors that elucidate the organization and structure of measured constructs. In this study, EFA was applied to explore if the items consisting of each construct load in the respects constructs. The measurement parameters encompass the principal component analysis (PCA) extraction method and Varimax rotation. Shrestha (2021: 7) recommended that, for EFA to be conducted, the Kaiser-Meyer value should surpass 0.5, and Bartlett's Test of Sphericity must demonstrate statistical significance. The data in Table 5.22 indicate that the Kaiser-Meyer values for all six constructs exceeded the recommended thresholds, and Bartlett's Test of Sphericity was statistically significant, affirming the appropriateness of the correlation matrix.

Table 5.22: KMO and Bartlett's Test for all the items in the questionnaire

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.794
Bartlett's Test of Sphericity	Approx. Chi-Square	4033.034
	Df	378
	Sig.	.000

Using the eigenvalues greater than one, the PCA for the extracted items revealed seven factors explaining 60.67% of the total variance (Table 5.23).

Table 5.23: Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.466	19.521	19.521	5.466	19.521	19.521	3.101	11.075	11.075
2	3.041	10.859	30.380	3.041	10.859	30.380	2.957	10.560	21.636
3	2.487	8.881	39.261	2.487	8.881	39.261	2.773	9.904	31.540
4	1.883	6.727	45.988	1.883	6.727	45.988	2.342	8.363	39.903

5	1.608	5.742	51.729	1.608	5.742	51.729	2.197	7.848	47.751
6	1.314	4.692	56.422	1.314	4.692	56.422	1.871	6.683	54.433
7	1.189	4.247	60.669	1.189	4.247	60.669	1.746	6.236	60.669
Extraction Method: Principal Component Analysis.									

5.9.1 Factor Coefficient

Table 5.24 highlights the factor coefficient of the seven emerged factors. These have been colour-coded for ease of identification and interpretation.

Table 5.24: Factor Analysis Coefficient

Rotated Component Matrix[a]							
	Component						
	Psychological Factor 1	Demographic Factor 2	Accounting Information Factor 3	Behavioural Factor 4	Financial Literacy Factor 5	Personal attitudes Factor 6	Perception Factor 7
P1	.723						
P2	.820						
P3	.734						
P4	.769						
P5	.687						
B1				.513			
B2				.749			
B3				.615			
B4				.718			
B5				.641			
D1		.707					
D2		.811					
D3		.714					
D4		.836					
FL1							
FL2					.824		
FL3					.802		
FL4					.516		
FL5							
A1			.635				
A2			.845				
A3			.766				
A4			.608				

PA1							.739
PA2							.663
PA3						.678	
PA4						.556	
PA5						.798	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.							
a. Rotation converged in 19 iterations.							

As shown in Table 5.24, Factor 1 had five items (P1-P5) with all loaded strongly to the construct “Psychological factors. Factor 2 had four items (D1-D4) with all loaded strongly in the same construct “Demographic factors. Factor 3 had four items (A1-A4) which are categorised under the same construct “Accounting information”. Factor 4 had five items (B1-B5) with all loaded strongly in the same construct “Behavioural factors. Factor 5 had three items (FL2-FL4) which are retained in the original construct “Financial literacy”. It is worth stating here that items FL1 and FL5 had a value below the recommended 0.5 and were subsequently dropped from the construct. Factor 6 had three items (PA3-PA5) which are retained in the original construct “Personal attitude”. Factor 7 had two items (PA1-PA2)

5.9.2 Validating the Emerged Constructs

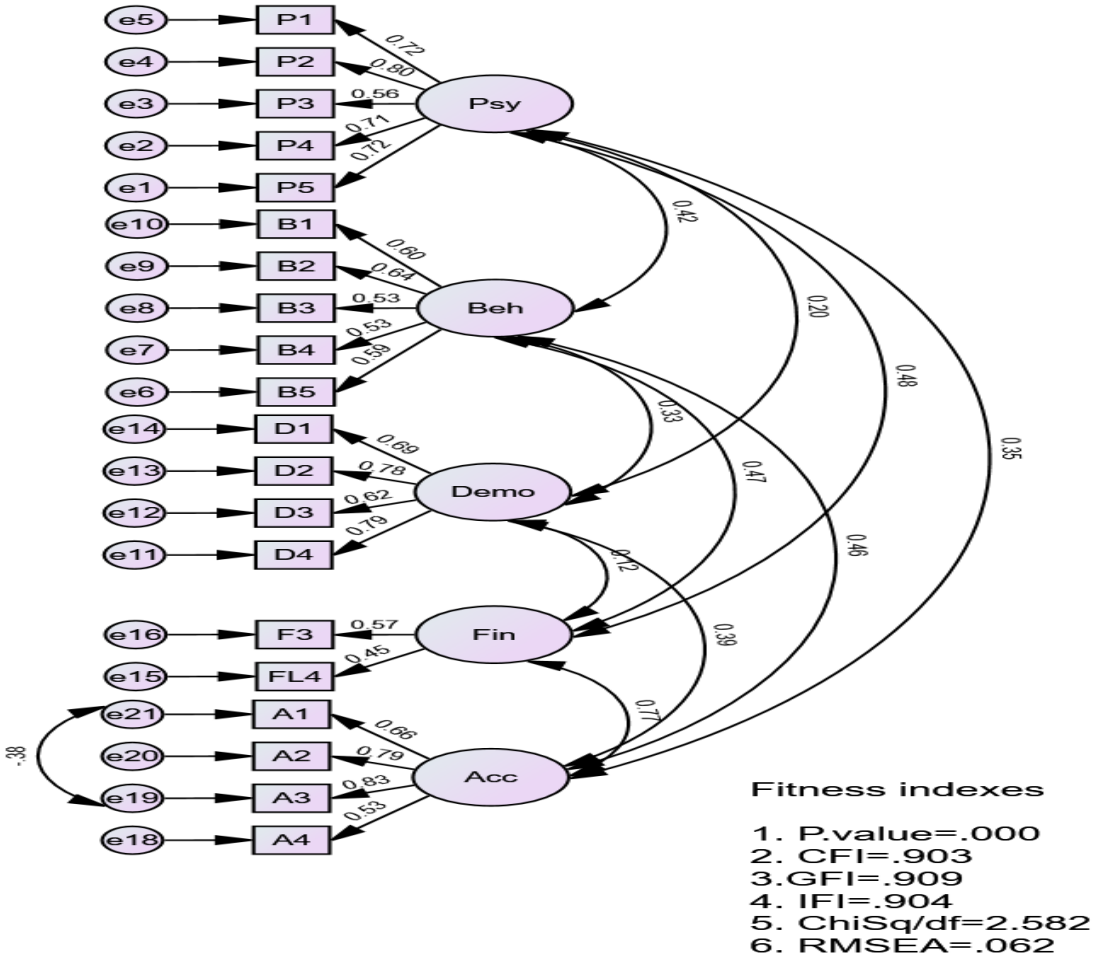
To validate the emerged constructs, confirmatory factor analysis (CFA) was computed. The data in Table 5.25 show that only four of the constructs namely: demographic factors, psychological factors, accounting information, and behavioural factors were confirmed by the CFA analysis. The data show that all of the four constructs have acceptable composite reliability, as they are all above the recommended 0.7 value (Alalwan *et al.* 2018). The validity of the dimensions was assessed using both convergent and discriminant validity. The convergent validity was assessed using the average variance extracted (AVE). Hair et al. (2010) highlighted that standardized factor loadings of 0.50 or higher provide robust evidence of convergent validity. Likewise, convergent validity is achieved when the Average Variance Extracted (AVE) exceeds 0.5, and discriminant validity is established when the AVE surpasses the Mean Shared Variance (MSV) (Mimouni-Chaabane and Volle, 2010). The information in Table 5.25 reveals that three of the constructs (demographic factors; psychological factors, and accounting information) have adequate convergent validity while the construct behavioural factor failed convergent validity, as measured AVE was less than 0.5. All the constructs have adequate discriminant validity since the MSV values measured were less than the AVE (Mimouni-Chaabane and Volle, 2010:34).

Table 5.25: Reliability, discriminant and convergent validity for the emerged constructs

	CR	AVE	MSV	MaxR(H)	Demo	Psy	Acc	Beh
Demo	0.812	0.522	0.148	0.825	**0.722**			
Psy	0.832	0.501	0.173	0.845	0.197	**0.708**		
Acc	0.803	0.513	0.207	0.847	0.385	0.339	**0.716**	
Beh	0.718	0.338	0.207	0.722	0.332	0.416	0.455	**0.582**

Note: Demo= Demographic factors; Psy = Psychological factors; Acc=Accounting information; Beh= Behavioural factors

Figure 5.9: Fitness of the CFA model



Source: Researcher's Construct.

The fitness indexes of the CFA analysis were assessed by multiple fit criteria. The normed chi-square (cmindf) is an absolute fit index that is obtained by dividing χ^2 by d.f. It is recommended that for a cmindf to be acceptable, the value should be greater than 1 but less than 5 (Hair et al. 2015). Another fit index used is the Goodness of fit index (GFI). Hu and Bentler (2009: 17) recommended the GFI value to be ≥0.9. The third fitness index used is the Comparative fit index (CFI). Alalwan et al. (2018:132) recommended the acceptable value to be ≥0.9. The final fit index used is the Root mean square error of approximation (RMSEA). The RMSEA value is recommended to be between 0.05 and 0.08 (Mimouni-Chaabane and Volle, 2010:34). The model fit indices are as follows: chi-square = 331.911; df = 128; cmindf=2.582; CFI = 0.903; GFI=0.909; IFI= 0.904; RMSEA =0.062, which suggests that the measurement model is acceptable.

5.10 Investment Decision-Making

This section explores the respondents' perceptions of the statements measuring investment decision-making. The data in Table 5.26 details the responses from the respondents.

Table 5.26: Respondents' views on statements measuring investment decision making.

Statements:	Yes		No		Total
	n	%	N	%	
Does the buying decision of investors influence their financial investment decisions?	332	80.2	82	19.8	414(100)
Does the selling decision of investors influence their financial investment decisions?	145	35	269	65	414(100)
Investors are more interested in purchasing high-attention stocks (derivatives) than selling them.	327	79	87	21	414(100)
The choice of stock (derivatives) to trade influences my financial investment decisions.	374	90.3	40	9.7	414(100)

As shown in Table 5.26, most of the participants indicated 'yes' that buying decision of investors influences their financial investment decision (80.2%), that investors are more interested in purchasing high-attention stock (derivatives) than selling them (79%), and that the choice of stock (derivatives) to trade influences their financial investment decisions (90.3%). However, most (65%) of the respondents answered 'no' that the selling decision of investors influences their financial investment decisions.

5.11. Factors Associated with Investment Decision-Making

This section explores the factors associated with the respondents' investment decision-making (buying decision, selling decision, interest in purchasing high-attention stock, and the choice of stock). Logistic regression analysis using both univariate (unadjusted) and multivariate (adjusted) was computed to test the odds of psychological, behavioural, demographic, financial literacy, accounting information, and personal attitudes influencing investment decision-making. The results are summarised below.

5.11.1 The Odd Factors Influencing a Buying Decision

Table 5.27 shows the factors associated with selling decisions among the respondents.

Table 5.27: Factors associated with the buying decision.

Risk factors	**Unadjusted (Univariate)**		**Adjusted (Multivariable)**	
	OR (95%CI)	**P-value**	**OR (95%CI)**	**P-value**
Psychological	0.753 (0.567-1.002)	0.051	1.528 (1.114-2.097)	0.009
Behavioural	1.477 (0.833-2.618)	**0.182**	0.614 (0.326-1.158)	**0.132**
Demographic	1.325 (0.890-1973)	**0.165**	0.804 (0.510-1.267)	**0.348**
Financial literacy	1.102 (0.730-1.663)	0.644	0.972 (0.617-1.529)	0.901
Accounting information	1.084(0.686-1.712)	**0.729**	1.052(0.607-1.823)	**0.857**
Personal attitude	1.750 (0.988-3.101)	**0.055**	0.597 (0.319-1.114)	**0.105**

Based on the univariate analysis: none of the examined factors was positively associated with buying decision-making. Additionally, going through the result of the multivariate analysis, psychological factors (OR=0.831, 95%CI: 0.633-1.091, p=**0.009**) were the only statistically significant factors in buying decision-making.

5.11.2 The Odd Factors Influencing Selling Decision

Table 5.28 shows the factors associated with selling decisions among the respondents.

Table 5.28: Factors associated with the selling decision.

Risk factors			**Unadjusted (Univariate)**		**Adjusted (Multivariable)**	
			OR (95%CI)	**P-value**	**OR (95%CI)**	**P-value**
Psychological			0.833 (0.648-1.072)	0.150	0.831 (0.633-1.091)	0.183
Behavioural			0.899 (0.608-1.330)	**0.596**	0.935 (0.600-1.455)	**0.765**
Demographic	1.082 (0.812-1.444)	**0.587**	1.126 (0.810-1.564)		**0.480**	
Financial literacy	1.164 (0.825-1.641)	0.388	1.222 (0.845-1.765)		0.287	
Accounting information	1.920 (0.638-1.326)	**0.653**	0.889 (0.573-1.378)		**0.598**	
Personal attitude	1.121 (0.747-1.681)	**0.581**	1.093 (0.670-1.707)		**0.675**	

Based on the univariate analysis: none of the examined factors was positively associated with the selling decision-making.

5.11.3 The Odd Factors Associated with Interest in Purchasing High-Attention Stock

Table 5.29 shows the factors associated with selling decisions among the respondents.

Table 5.29: Factors associated with interest in purchasing high-attention stock (derivatives)

Risk factors	**Unadjusted (Univariate)**		**Adjusted (Multivariable)**	
	OR (95%CI)	**P-value**	**OR (95%CI)**	**P-value**
Psychological	1.105 (0.826-1.478)	0.503	1.081 (0.788-1.483)	0.629
Behavioural	1.214 (0.786-1.875)	**0.382**	1.248 (0.759-2.0553)	**0.383**
Demographic	0.920 (0.653-1.298)	**0.636**	0.899 (0.607-1.332)	**0.596**
Financial literacy	0.979 (0.657-1.458)	0.917	0.963 (0.630-1.473)	0.862
Accounting information	1.063 (0.695-1.626)	**0.777**	1.048 (0.624-1.759)	**0.860**
Personal attitude	0.833 (0.509-1.363)	**0.487**	0.825 (0.484-1.407)	**0.481**

Based on the univariate analysis: none of the examined factors was positively associated with the interest in purchasing high-attention stock (derivatives) decision-making.

5.11.4 The odd factors influencing the choice of stock (derivatives) to trade.

Table 5.30 shows the factors associated with the choice of stock (derivatives) to trade among the respondents.

Table 5.30: Factors associated with interest choice of stock (derivatives) to trade.

Risk factors	**Unadjusted (Univariate)**		**Adjusted (Multivariable)**	
	OR (95%CI)	**P-value**	**OR (95%CI)**	**P-value**
Psychological	0.962 (0.631-1.466)	0.856	0.934 (0.591-1.477)	0.771
Behavioural	1.104 (0.601-2.026)	**0.750**	1.187 (0.597-2.361)	**0.625**
Demographic	0.837 (0.450-1.401)	**0.499**	1.810 (0.453-1.449)	**0.477**
Financial literacy	0.919 (0.527-1.603)	0.767	0.889 (0.493-1.604)	0.696
Accounting information	1.089 (0.613-1.933)	**0.772**	1.239 (0.613-2.503)	**0.551**

Personal attitude	0.814 (0.406-1.633)	**0.562**	0.854 (0.402-1.815)	**0.682**

Based on the univariate analysis: none of the examined factors was positively associated with the choice of stock (derivatives) to trade.

5.11.5 Multivariate Regression Analysis

Multiple regression analysis was utilized to assess the impact of independent variables (IV) on the dependent variables (DV). For each analysis, we conducted essential assessments to ensure that the assumptions of normality for residuals, linearity, and homoscedasticity were met and not violated. The data in Table 5.31 indicates that none of the factors significantly predicts investment decision-making (P>0.05). The regression coefficient indicates the predictors account for only 0.7% of the variance in the model.

Table 5.31: Regression analysis

Predictor	F-value	P-value	R	Beta coefficients	Error	R Square	Predicted	Significance	Collinearity statistics VIF
Psychological	0.473	0.828	0.083	-.037	.012	0.007	Decision making	.490	1.158
Behavioural				.019	.019			.735	1.245
Demographic				.026	.014			.643	1.275
Financial literacy				-.017	.016			.743	1.148
Accounting information				-.002	.019			.974	1.391
Personal attitude				.063	.019			.254	1.235

5.12. Chapter Summary

In summary, the above chapter extensively highlighted the perceptions of respondents on six constructs measured, namely, psychological factors, behavioural factors, demographic factors, financial literacy, accounting information, and personal attitudes by examining their influence on investment decisions. There was strong agreement on each of the statements measured in the study. Furthermore, the perception of respondents on the most significant factors influencing investment decision-making in the derivative market as well as a possible guide to manage risk and maximise return in the derivative market was assessed. The analysis involved the following tests: descriptive statistics, which included means and standard deviations, were utilized, and frequencies were presented in tables or graphs. Additionally, regression analysis, one-sample t-tests, and independent samples t-tests were performed. Multiple regression analysis and binomial logistic regression were performed to test the relationships and the odds of the factors influencing investment decision-making. The next chapter presents the qualitative analysis.

CHAPTER SIX

QUALITATIVE ANALYSIS

6.1 Introduction

In this chapter, we delve into the qualitative analysis of the data collected for this study. The interview questions were carefully designed to extract participants' insights regarding their investment decisions. Following the transcription of the interviews, a qualitative analysis was conducted using NVivo 12 software. The documents were imported into the QSR NVivo 12 software to facilitate the analysis process. The software organized the coded data into primary themes and subthemes, effectively categorizing the data for better manageability. Throughout the analysis, a commitment was maintained to ensure objective comparisons of the data, all while keeping the study's focus in mind. The name of the participants was anonymized as part of the ethics requirement and direct quotes from them were used verbatim to support the analysis.

6.2 Analysis of the Answered Questions

Table 6.1: Themes and subthemes emerging from the study.

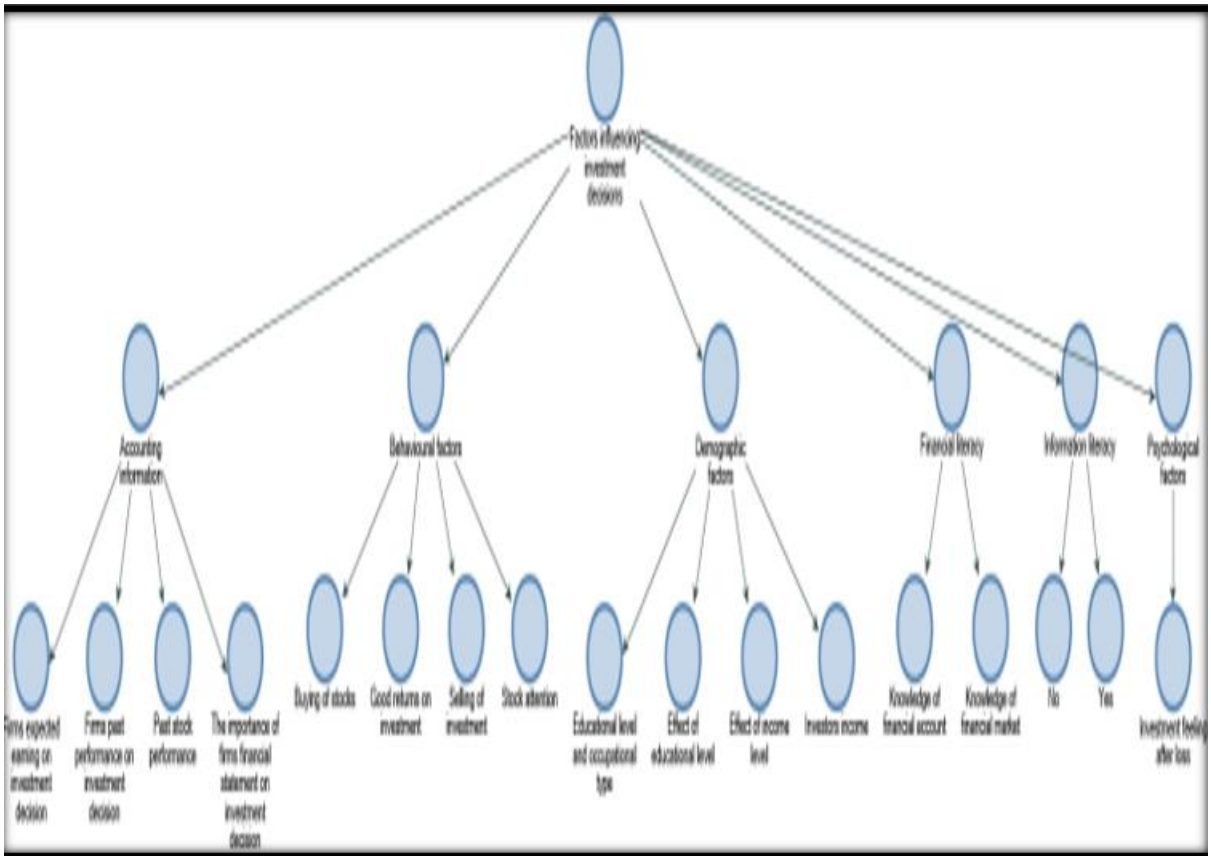
Themes	Subthemes
Factors influencing investment decisions. (subtheme = 6)	1. Accounting information 2. Demographic factors 3. Financial literacy 4. Psychological factors 5. Information literacy 6. Behavioural factors
Investment decision (Subtheme= 4)	1. Factors motivating investment in the financial market 2. Investment preference 3. Setting goes on investment 4. Challenges faced in making investment decisions
Guide to maximizing returns and reducing investment risks (Subtheme=4)	1. Guide to maximizing returns 2. Guide to reducing risks 3. Positive decision on investment and expected returns

	4. Future plan to achieve investment success

Theme 1: Factors influencing investment decisions.

This theme explores the factors influencing investment decisions. As illustrated in Figure 6.1, the theme is discussed under six sub-themes.

Figure 6.1: Visualization of Theme 1



Researcher's Own Construct

Subtheme 1: Accounting information

(a) Firms expected earnings on investment decision

All of the participants indicated that the firms expected earnings on investment influence their investment.

Always, it is one key factor that guides my decision to invest (P1).

Yes, I would if an opportunity to invest arises (P2)

I usually search for a firm's expected earnings because it enables me to assess its profitability and determine the stock price (P10).

(b) Past stock performance

Sixteen of the participants agreed that the firm past stock performance influences their investment.

Yes, I do (P1)

Not necessarily, but form part of overall investment decisions (P2)

It depends on market conditions and the duration of the stock performance. But over and above the past performance are the current market trends (P8).

Nevertheless, one of the participants disagreed that this influenced the investment decision.

No (P6)

While three of the participants were of the view that the firm past stock performance does not always influence their investment decision. For instance, while some of them indicated it sometimes influences, others, however, shared that it is not all the time the firm past stock performance influences their investment decisions.

Sometimes (P4)

Not completely (P13)

Not at all (P20)

(c) The importance of a firm's financial statement on investment decision

Seventeen of the participants agreed that the importance of the firm's financial statement on investment decisions. According to some of the views uncovered, it was revealed that the firm's financial statement provides an avenue for sound analysis of the investment.

Very important to do, sound analysis (P1)

Such analysis may uncover the firm true position like the liabilities and assets balance, profitability, and debt load, long and short-term financial obligations.

The financial statement is very important because it brings out the true position of the firm. If the liabilities are far more than the assets, it will definitely affect decisions on investment making (P4).

Financial statements are important to investors because they provide enormous information about a company's revenue, expenses, profitability, debt load, and long-term and short-term financial obligations (P14).

The above statements suggest the significance of the firm's financial statement as it may help promote investors' confidence in their investment decision. As noted by one of the participants, one does not invest in firms where there is no profit.

You don't invest in a firm where there is no profit (P8)

Nevertheless, two of the participants believed that the firm's financial statement is not relevant to their investment decision.

Not relevant (P3)

Another participant was of the perception that the firm financial statement is important in making an investment decision.

Not really (P6)

(d) Firms' past performance on investment decision

Twenty of the participants agreed that the firm's past performance influences their investment decision. Some of the participants consider this to have a lot of influence.

A lot (P1)

Yes, it does a lot (P2).

In terms of influence, one of the participants note that it could help analyse the prospects of their investment.

Does have an Influence, but analyze the prospects (P4)

For example, the track record of a multinational firm like MTN encourages investment in such firms.

My track record speaks volumes about my decision to invest. E. g. MTN

As such, the ability of past performance provides credible guidance for investors. These are reflected in the statements below.

It provides guidance on the level of risk appetite you have to invest in such effect (P9)

It does count positively or negatively if a stock can maintain a sustained performance over a good period and the same is true if all of the market conditions remain the same and the stock is doing badly (P12).

It helps in determining the positive growth of the firm future (P14)

It will affect either positively or negatively. If the performance is poor one might not invest so much on the other hand if the performance is bigger and better, one might give it a push (P15).

Notwithstanding the above, three of the participants did not share the view that the firms' past performance influences their investment decision. One of the participants attributed this position to the fact that inflation and deflation occur and does the past years do not make any difference to decision-making on investment.

If a firm had performed much better over the past years does not really affect my

decision considering the fact that there is inflation and deflation (P21).

Subtheme 2: Demographic factors

This subtheme explores the influence of demographic factors on investment decisions. The following were uncovered from the data transcribed.

(a) Educational level and occupational type

Fourteen of the participants indicated that their educational level and occupational type influence investment decisions. According to some of the reasons for their views, it was uncovered that educational level and occupation type determine how much one could learn and be willing to invest.

It does. It determines how much I can learn and willing to invest (P10)

Such a type or form of learning may be associated with understanding the risk of the derivatives market as indicated by one of the participants.

Yes, in terms of understanding risk, derivatives are highly geared instruments (P11).

As such, one could rightly be assumed that the quality of information, which may depend on the individual level of education and or occupational type, may have a significant influence on investment decisions.

Yes, the quality of information I am exposed to does affect what I do, so knowing that what I sow today is what I reap tomorrow guides me to always want to invest so there is something for our tomorrow (P13).

For instance, individuals with a postgraduate degree in the financial discipline hold a comparative advantage and thus helped in making positive investment decisions as shared by Participant 16.

Yes, positively. As a Master's degree holder in Business Administration majorly in Finance, this has helped in making a positive impact on my investment decisions (P16).

This is also echoed by another of the participants who stressed that the educational level plays an impact on the level of knowledge and skills exposure.

> *My educational level affects my investment decision such that the more knowledge, skills, and training exposure I acquire regarding global economic trends and all that the more productive and versatile I become thereby increasing my earnings as the case may be (P19).*

However, not all of the participants agreed with the position that educational level and or occupational type influence investment decisions. From the data transcribed, eight of the participants disagreed with the view that educational level and occupational type influence investment decisions. One of the participants objected to this by stating the following:

> *Not really. I feel the decision to invest is born from the need to grow wealth and look for different ways to improve one's income rather than just educational levels. In this category financial education is the key and not just any kind of education (P3).*

Another of the participants also reiterates that investment decision is based on a wealth of information and not necessarily on one's level of education.

> *The investment decision is based on the information exposed and not necessarily the level of education (P7).*

Despite the acknowledgement that quality information influences investment decisions, one of the participants shared that occupational type other than the individual's education level was the key. This means that the quality of information one has on investment is dependent on their occupational level.

> *Educational Level No, Occupation type Yes (P2).*

(b) Investors' income

Most of the participants, twenty-two in number, were affirmative that investors' income plays a huge role in an investment decision. One of the participants shared that the more one has a disposal income, the more the likelihood of making an investment decision.

Yes, the more disposed income I have the more I am able to make investment decisions that would ultimately leave me with more disposable income (P5)

Another reason for the view that income influences investment is that there are limits to one's means. This means that even if one has the desire to invest, ultimately, the amount of disposable income to meet these needs is a key determinant.

Yes, human wants are many and there's a limit to the means of satisfying them. So, I consider my income before investing either in the short term or long term (P9).

Of course, yes. Before investing, I usually check my income. It enables me to ascertain my goals and ability to take financial risks. This is because there is no guarantee that I will make money in the investment (P10).

However, one of the participants disagreed that income plays a role in an investment decision. According to the participant logic, the driving force in investment is strong determination and not necessarily investors' income.

No, investment decisions require strong determination towards future goals. (P4)

(c) Effect of income level

From the above narrative, one could draw out that income is a critical demographic determinant of investment decisions. Thus, one was asked to explain if their income level did influence investment decisions, twenty of the participants agreed to this. According to some, it determines how much they can invest while others noted that the bigger their income the more, they invest.

It does. It determines how much I can invest (P3)

My income level does affect my investment decision, the bigger the income the more investment I made (P5).

Trade size is determined as a percentage of your investment portfolio income level and often determines free cash available for trading (P7).

Income level affects investment, the bigger the income, the more investments (P13)

Yes, the higher your income the higher the investment (P15).

However, for others, income has an effect only if one desires to increase their investment.

Yes, only if you want to increase investments (P8)

Participant 11 was more cautious in the sense that investment is risky, and one does not hope to lose their hard-earned income to it.

Yes, because investment is a risk and I have to be strategic in not losing my hard earn income (P11).

The above sentiment is also shared by another who indicated the following:

Yes, I like to keep an investment for the long term if the factors encourage that but this becomes almost impossible if there is not enough disposable income I can fall on in the event of other factors that may require some (P16).

It thus means that investment for some is largely dependent on the availability of disposable income. The plausible reason for this may be that investors want to reduce the risks of a financial crisis that comes from investment. Having disposable income thus offers some level of buffer in case of financial losses. This could also have informed the position of **Participant P18** who revealed that one could not invest in long-term projects due to the level of income.

Yes, one cannot most times invest in long-term projects. This is because the income level will not accommodate that (P18).

The overall effect of income on investment decisions was succinctly summarised by the statement below.

Of course, yes. Because the amount I earn determines how much I will invest and vice versa. When my earnings increase my investment increases as well and when earnings decrease my investments also decrease so that I will be able to accommodate other expenses (P19).

While **Participant 20** indicated was more emphatic that more income generated more investment and diversification of the portfolio.

> *Yes, the more I make the more I invest and diversify my portfolio (P20).*

(d) Effect of educational level

In terms of the effect of educational level on investment decision, twelve of the participants believe it thus has an effect on their investment decision. As stressed by one of the participants, there is a correlation between the investors' education level and their understanding of financial literacy - which ultimately influences their financial decisions.

> *There is a significant correlation between the investor's education level and their understanding of financial literacy, thus influencing investors in the financial decisions they make. It can be concluded therefore that for investment decision-making in capital markets, knowledge of financial literacy is necessary (P5).*

Eight of the participants, however, rejected the notion that educational level has any effect on investment decisions. Participant 12 notes that investment is a personal thing and has nothing to do with education.

> *No, investment idea is personal, some good traders are not very educated as such (P12).*

Participant 15 also reiterated the above sentiment. In the participant's words:

> *I do not think that an investor's educational level, that is, a formal education within four walls of a classroom which does not necessarily translate to the quality of information does affect investment decisions, but I also strongly believe that what we know and the quality of knowledge does play a key role (P15).*

The above means that while formal education does not translate to investment knowledge, the quality of knowledge cannot be underestimated in an investment decision. Such kind of knowledge may be linked to one's field of study as uncovered in the statement below.

> *Again, financial education is the key rather than a broad level of education (P17)*

One of the participants, however, express a mixed position on the effect of educational level on investment decisions.

> *Yes/No. Yes because such an investor has learned a lot in class and putting what learned into action will in a 90% yield more positive results. No, even without much learned in class, follow-up with a particular trend in investment he can make it out (P9).*

Subtheme 3: Financial literacy

A critical point emerging from the previous subtheme is that the quality of information, particularly financial literacy plays a key role in an investment decision. This subtheme thus explores the influence of financial literacy on investment decisions. From the data transcribed, the following were uncovered:

(a) Knowledge of the financial market

Seventeen of the participants agreed that knowledge of the financial market influences investment decisions. **Participant 7**, for example, indicated looking at the financial statements of the firm, and the history of the stock before deciding on their investment.

> *I try to ensure I do my homework. Look at financial statements, government structures and the history of a particular stock before adding it to my portfolio (P7).*

Participant 8 acknowledged looking at the dynamism of market trends.

> *I try to buy given the dynamism of market trends we can sometimes guess at the best (P8).*

The above is critical, as investors cannot make a blind date on investment without adequate knowledge of the market or the stock.

> *Yes. We can't just make a blind date (P15).*

Thus, and as admitted by P16, full knowledge of the financial market informed the investment decision.

Full knowledge of the financial market and the particular derivative has in no little way enabled me to know when to invest and when not to (P16).

Two of the participants further elaborate on the importance of full knowledge of the financial market in one hope to invest. In their view, different country has their own modus of Operandi and needs to be studied before deciding on an investment.

I think this is where geographical location plays a major role, different country has their own way of operations, and one needs to understand how the financial market of his country of residence operates (P2).

I think this is where geographic location plays a major role - because the different country has his /her own market. For example, the market in Nigeria is different from South Africa. One needs to have an understanding of how the financial market in your location of residence operates (P4).

Nevertheless, five of the participants disagreed on the influence the knowledge of the financial market has on their investment decisions. They indicated not to have full knowledge of the financial market. This could have contributed to some calculated risks.

I don't have full knowledge (P3)

No, but I take a calculated risk (P4)

(b) Knowledge of financial account information

Besides the knowledge of the financial market, it appeared that knowledge of financial accounting influences investment decisions. From the data transcribed, sixteen of the participants agreed that knowledge of financial accounting influences their investment decisions. As one of the Participants said, research must be done before investing.

Yes, research must be done before investing (P3)

The importance of such research is that it enables the investors to study the health of the firm before making an investment decision.

Yes. It speaks a lot about the health status of the investment (P14).

I understand financial account information accurately because it plays a key role in investment decisions. With that, I could understand the company's health and make informed decisions (P15).

However, five others did not perceive this knowledge to be of importance in their investment decisions. Part of the reason for this is that some did not invest in company stocks.

I do not look at a company's financial statement but I do not invest in companies, I trade indices and forex (P3).

While others like P6, claim to leave it to the brokerage firm.

I leave that to my brokerage firm most times than not (P6).

Participant 4 thinks the accounting information of the firm is not always accurate.

Not always accurate (P4).

Subtheme 4: Psychological factors – investment feeling after the loss.

It has been suggested in the literature that psychological factors may play a role in an individual's investment decisions. It was therefore critical to know the participants feeling after suffering investment loss. From the interview, eight of the participants felt bad after losing their investment, seven were sad, three felt unfilled while other three were discouraged to continue investing.

One of the participants who felt bad after counting losses, however, re-strategised after losing investment. This suggests strong mental strength.

Bad, but I count my losses and re-strategise (P4).

Participant 7 also revealed moving on after feeling bad.

Bad but move on (P7)

Participant 8, however, did not take a break to study the cause of the error.

Though I will feel bad about it, I will still take my time to study the investment again and

try to see where the error came from (P8).

Among the seven who expressed sadness after losing investment, some of them revealed the following:

Not happy but go back and do my homework on it well (P3)

Losing is not a good feeling but the bright side is learning a thing or two from the loss (P4).

While the above suggests losing causes deep sadness, the desire to move on and learn from it suggests a huge mental strength on the part of the investors. **Participant 1** for instance, indicated writing it off as bad decisions and learning from it.

Write it off as a bad decision; learn from it (P1).

However, **Participant 2** who was discouraged from losing investment revealed to lose interest in the investment. According to the participants' reason, losing affects the perception of the particular stock, which could have discouraged further investment in it.

It makes me lose interest in the investment i.e., it affects my perception of the stock as an investor (P2).

Subtheme 5: Sufficient information about investment (Information literacy)

Given the perceived negative feelings from investment loss on the one hand and the importance of quality information in investment decisions, on the other hand, it was reasonable to know if the participants have information about the investment before investing. From the data transcribed, sixteen of the participants indicated that to have information about the investment. Information such as stock price and or the account balance of the firm was critical for **Participant P15.**

Yes, because I consider the stock price and the balance sheet of the company (P15).

Participant 2 indicated that although the information about the investment is sufficient, nonetheless, continued searching for more information. It thus meant that no about of information is adequately enough.

Sufficient but keep on searching for more information (P2)

Six of the participants interviewed revealed not to have sufficient information about the investment. **Participant 1** noted to usually search for information about investment while **Participant 6** believe it is not possible for an investor to have sufficient information about the investment.

No, I usually search for information regarding it (P1).

Not possible to have sufficient information, but the available information must be double-checked to avoid irreparable loss (P6).

Subtheme 6: Behavioural factors

This subtheme explores the behaviour of the participants with regard to the following:

(a) Selling of investment

When asked if the participants hesitate to sell an investment when there is only a small profit margin, fifteen of the participants agreed to this, four disagreed and four others indicated that it depends on the investment. Among those who agreed, some of them revealed that they sell because the current profit margin is not the true indication of where the investment may be in the next five years. This meant that current stock interest is not a determinant to sell for a long-term investor.

Yes, this is because the current profit margin of a particular stock is not the true indication of where the investment may be in the next five years for instance (P6).

Participant 7 echoed a similar sentiment as above about hesitating to sell when an investment has the potential for higher profit margins.

Yes, this is when an investment has a potential for higher profit margins (P7)

Participant 11 only sells when the stock has reached a set profit margin, which is 20 to 25% profit.

I sell my investment once my stock has broken out and reached 20 to 25% profit (P11).

Nonetheless, some of the participants did not hesitate to sell when there is a small profit margin.

No, I don't. Provided there's a margin irrespective of the size (P9).

The financial struggle could also influence the selling of investments. This is reflected below

I once sold an investment with a small profit margin because I needed to save myself from a financial mess.

Others, however, revealed that the selling of investment depends on the type of investment. For a long-term investment, there is hesitation to sell for a small profit margin while a swing promotes selling. This is attributed to the chances that the price may drop further.

It depends. If it is for long-term investment I don't sell. If it is for the swing I do if prices are projected to drop further.

(b) Buying of stocks

In terms of the participant's behaviour in buying stock, the following question was asked to elicit a response “Do you usually buy a stock because everyone is buying it?” From the responses provided, four of the participants agreed to buy stocks while nineteen disagreed with the question. Those who agreed to buy stock influenced by others indicated that they only do this if the stock is good. It does mean that regardless of the external influence, buying of stock will largely depend on the profitability of such stocks rather than the influence.

Yes, if the offer is good (P3).

Participant 9 who disagreed with ever buying stock to others' influence, revealed that buying stock is an individual instinct.

No, my investment is based on my own instincts and the general market indicator. So, for instance, if it is a good stock from past indicators and it suddenly falls in share price, I might buy depending on the cause of the fall (P9).

Participant 18 shared a similar sentiment by noting the following:

> *No. I check out other things to be sure that I make a profit out of buying such stock. Not because everyone else was buying (P18).*

While 19 revealed to use of an expert investor method in buying stock.

> *No, I rather use the Warren Buffet method of value investment of picking stocks that appear to be trading for less than intrinsic or book value (P19).*

(c) Buying attention stock

The participants were asked if they often invest in a stock that gains a lot of attention. From the responses, fourteen of them agree to invest in such stock; six answered no while 2 others indicated that it depends on the kind of stock. Among those who buy a stock that gains a lot of attention, it was uncovered profit is the central premise of their purchase of such stocks.

> *I do if it has a good fundamental (P1).*

> *Yes, if it is of a good profit (P2)*

Some of the participants who disagreed with buying stocks with attention centred their reasons for buying stock on personal goals not necessarily about public attention.

> *No, because my investment in any company reflects my personal goals and objectives and as well as my decisions based on my analysis of the company's valuation and how the company runs its business (P5).*

(d) Good returns on investment

From the above analysis, one could draw out that profitability is the centre motive for investment. As such, it was expedient to know if the participants always what have they considered to be good returns on their investments. From the data analysed, fifteen of them indicated to have, seven noted they did not while one revealed to not always have what they consider to be good returns for their investment.

For those who agreed that they always have what they consider to be good returns, some of them indicated calculating their investment.

> *Yes, because I do calculate investment (P1)*

Participant 5 noted to consider profit margins of 30% and above.

> *Yes, I do consider profit margins of 30% and above as good (P5)*

While P14 indicated 7% on all investments.

> *Yes, I always have a good return (ROI) of approximately 7% on all my investments so far (P14).*

For those who answered no, some of the reasons given for their position are that market factors do not always allow good returns.

> *Market factors do not always allow for a good return at all times, but I do ensure that I do not lose out on my investment altogether (P6).*

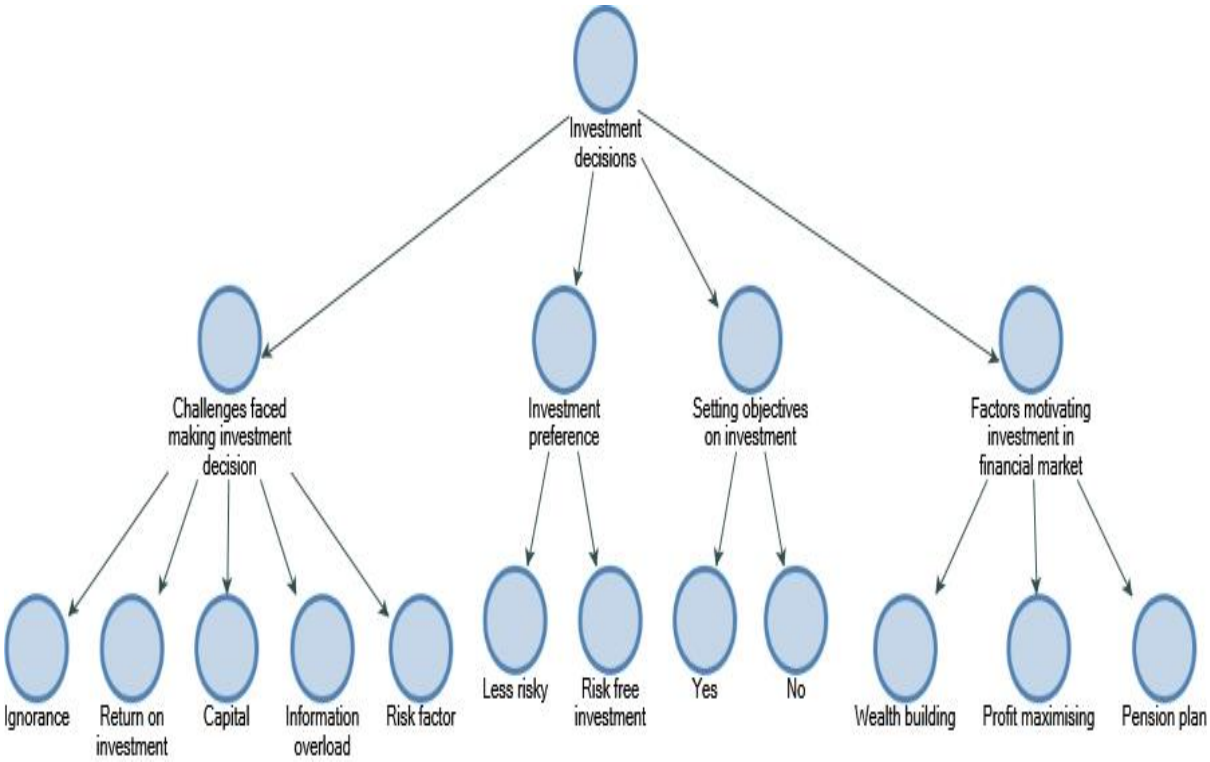
The above means that the return on investment is dependent on the market factor, which is hardly predictable. Participant 7 who shared that investment returns are dependent on the market behaviour also reinforces this position.

> *Investment returns are not a linear graph, it fluctuates depending on market behaviour (P7)*

Theme 2: Investment decision

This theme explores the investment decision by looking at factors motivating investment in the financial market, investment preferences and challenges participants faced in their investment decision. The theme is discussed under the subthemes shown in Figure 6.2.

Figure 6.2: Visualization of Theme 2



Researcher's Own Construct

Subtheme 1: Factors motivating investment in the financial market.

In terms of the factors motivating investment decisions in the financial market, it was uncovered that wealth building, profit maximisation, and pension plan were the three reasons given for investing in the financial market.

From the data transcribed, six of the participants shared that wealth building such as making money was the main motivation for investing in the financial market.

Wealth building (P1)

To make money (P2)

Financial returns (P4)

Participant 5 who revealed the desire to make some passive income elaborates on their interest in wealth building.

The need to make some passive income. However, my focus is more on stocks, bonds and shares rather than current trade (P5).

Participant 6 also reinforced the same view by stating that the motive for investing in the financial market is to allow money for them while standing the opportunity to grow wealth.

To allow my money to work for me while standing the opportunity to grow wealth (P6).

Equally important, fifteen of the participants indicated that profit maximising was their motive for investing in the financial market.

Profit maximizing (P10)

Positive return on investment (P11)

Participant 15 also reiterated the above position by revealing that the core goal for investing in the financial market was to make a profit and channel this towards other projects. This meant that the return on investment for a capital project may be driving investment in the financial market.

My motivation to invest in the firm market is to make a profit which will ultimately be used for projects.

The other two participants revealed investing in the financial market as a way of planning for their retirement.

Pension plan (P16)

To safeguard the future (P18)

Subtheme 2: Investment preference

When asked to indicate whether they preferred less risk investment or no risk at all, eighteen of the participants indicated to prefer less risk investment while three preferred risk-free investment. For the eighteen who preferred less risky investments, some of the participants indicated that there is no investment without risk.

There's no investment without risk, but the lesser the risk is okay (P2)

Participant 7 also shared that risk-free investment does not offer a high return on investment.

Risk-free investments do not offer high returns, I prefer risk (P7).

It does mean that the higher the investment risk, the higher the returns. Another participant also echoes this view by stating:

Yes, the more the risk the higher the profit (P12).

Participant 10 considered investment without risk as a waste of time due to the low yield.

Business is risky, and risk-free can be a waste of time in terms of yields (P 10).

Nevertheless, the level of risk is also another consideration. In **Participant 15** view, the lower risk is preferred over high risk due to the income factor. This means that an investor with a lower income will opt for an investment with lower risks regardless of the profits.

I prefer the low-risk investment knowing that the profit margin may be smaller compared to the high risk considering my income at the moment (P15).

Another participant who preferred no-risk investment due to income level made a similar argument.

Risk-free because my income is minimal (P20).

Subtheme 3: Setting objectives for Investment.

Given the dynamism and unpredictability of the financial market, the participants were asked the following question “Do you believe in setting objectives that you want to achieve in your investment?” From the interview data analysed, all of the participants affirmatively indicated setting objectives for their investment.

Subtheme 4: Challenges faced in making an investment decision.

As already stated in this section, there is evidence of financial losses in an investment decision, which invariably results in negative feelings such as sadness and discouragement. It thus means that some of the participants encountered challenges with their investment. In order to explore deeper into this, the following question was asked: “Can you identify the challenges faced in making investment decisions and how they have been solved?” From the interview, it was uncovered that ignorance was the common challenge faced in making investment decisions. Other challenges include a lack of capital and market risk factors.

(a) Ignorance

In terms of ignorance as a challenge, nine of the participants indicated this as a challenge. **Participant 2** revealed to have addressed this challenge by seeking financial advice.

> *Ignorance of how the market works - seeking financial advice (P2)*

For **Participant 5**, the challenge of ignorance can be overcome by adequate training, and trading using a demo account as well as getting guidance from consultants.

> *The main challenges are psychology and lack of knowledge. These challenges can be overcome by adequate training, trading using a demo account, as well as getting guidance from consultants (P5).*

Ignorance could also manifest due to a lack of financial literacy and or following other people’s sentiments without investigating the profitability of such stocks.

> *More time than not lack of financial literacy is a major problem. Following other people's sentiments without doing due diligence is also bad for investments. Trading stocks that are trending could also be problematic (P8).*

As a solution to the above, particularly the ignorance of financial literacy, participant 8 revealed that there are materials that could help with financial literacy that can help educate individuals about investment.

> *There are materials at our disposal to help with financial literacy. So I know it is not so much a sound move to borrow money from the bank to invest because the interest I*

end up charged by the bank can easily erode the gains I make (P8).

To address ignorance in investment, P14 suggested the inclusion of investment awareness into the school curriculum.

By inculcating investment awareness in the going generation at the school curriculum level (P14).

Then, such a move may help address the lack of financial literacy among investors. According to the views of one of the participants, enough information is required from all sources available.

Enough information has to be gotten concerning the investment from all the sources available. The will to sell it to others to be acceptable is also needed (P16).

(b) Capital

In terms of capital, **Participant 6** revealed that this could be solved by borrowing money from the bank. However, the extent this could help address the financial limitation may be another concern. If one draws from the views of **Participant 8** above, borrowing money from the bank to invest may end up eroding any possible gain from the investment due to the bank's interest rate.

Capital is involved, one can borrow money from the bank (P6).

Participant 11 suggested multiple sources of raising money, which include the bank, personal, family and friends.

Money has to be raised either through the bank, personal, family or friends (P11).

(c) Market risk factor

Another challenge faced in making an investment decision is the factors associated with market risk. **Participant 15** believe it is a major drawback in investment decision and suggested adequate information about it.

This is a major drawback especially when it seems there are grey areas. With well-resourced materials, a number of hidden/unknown risks have been well uncovered (P5).

This market risk factor may be uncertainties and inflation.

Market uncertainties and inflation (P13)

Another market risk factor may have alluded to the type of investment. **Participant 21** hinted that the money market has low returns and advice on investing in the stock market.

In an environment of low money market returns, challenging to find income returns, better to invest in the stock market. Keep an eye on the interest rates, any excessive crease in rates could influence asset prices (P21)

(d) Information overload

Another possible challenge identified in the interview may be associated with information overload. **Participant P22** indicated that due to social media, one is exposed to all sorts of information, which may not be true.

Information overload: In an age of social media, we are exposed to all sorts of (P22).

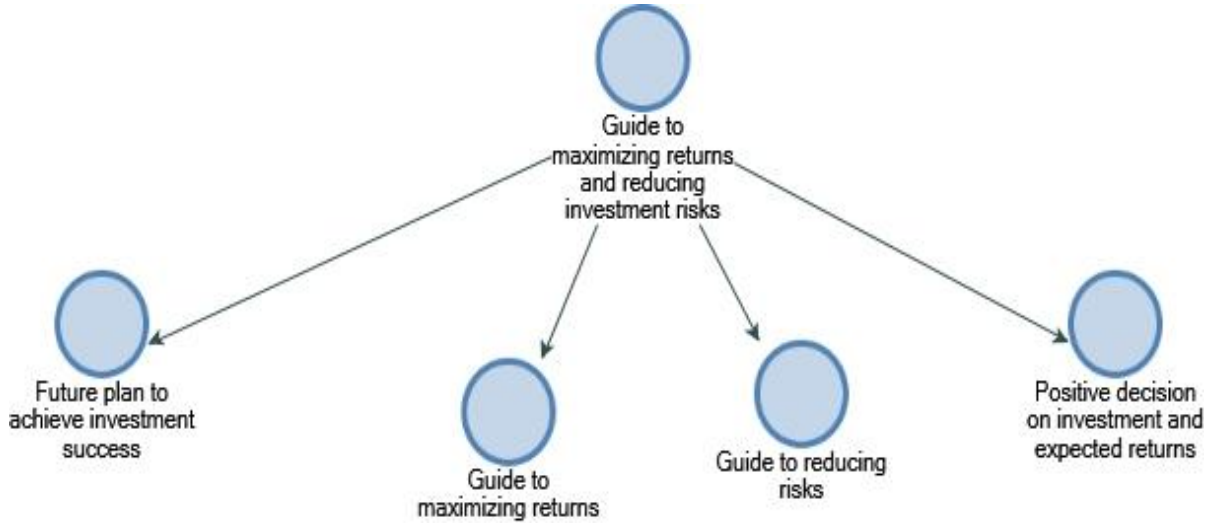
The participant suggested as a solution, the use of proper resource materials.

Proper resourced materials can help to cut to the chase as there are well-resourced materials available today than it was a couple of years back (P22).

T**heme 3: Guide to maximizing returns and reducing investment risks**

One of the cardinal motives for investment is maximising profits. This theme, therefore, explores the guide to maximizing returns and ways of reducing risks associated with the investment. As illustrated in the figure below, the theme is discussed under the following sub-themes:

Figure 6.3: Visualization of Theme 3



Researcher's Own Construct

Subtheme 1: Guide to Maximizing Returns

When asked the following question "How do you make decisions to maximise your returns?", the following were uncovered:

(a) Monitoring the financial performance (1)

Monitoring the financial performance of the firm was indicated as a guide to maximizing returns.

Follow up on the financial growth of the firm (P4)

(b) Social media

As a guide to maximizing returns, one of the participants indicated the use of social media.

Social media (P6)

(c) Good decision on investment

The centre premised on good return is on the ability to make good decisions in the investment.

Two of the participants shared this view.

Good decisions on investing (P10)

Good decision on investing (P14)

(d) Adequate analysis of investment

In order to make the best of the investment and reduce the risk of financial loss, adequate analysis of the stock is highly essential. Four of the participants shared this view by indicating the following:

Analyze all Instruments available (P9)

Studying portfolio and market indicators (P16).

By studying the investment market (P21)

I study previous market dynamics.

(e) Past returns on investment (1)

Another guide to maximizing returns may be connected to past returns on investment. This is shared by one of the participants.

Past returns (P9)

(F) Strategic investment

Adequate planning and strategic investment may help yield the best returns. Thus, two of the participants indicated strategic investment as a way of maximizing returns.

Invest strategically (P17)

Strategic investment is essential given the influence of income on investment decisions. This view is supported by one of the participants.

> *My Income is a short or long-term investment. This too has to be decided upon before any investment decisions are taken (P13).*

(g) Stock quality (2)

Good stock essentially leads to high returns. As such, two of the participants believed that high-quality stock guarantees a maximum return on investment.

> *Put money in high-quality stock for a long period of time (P5).*

> *Go for the more realistic stock (P2)*

(h) Level of risks (2)

As previously stated, the higher the risk, the better the returns. As such, the level of risks is a guide to maximizing returns. This could also explain why two of the participants consider the level of returns to ensure maximum returns of investment.

> *Less risk (P18)*

> *Consider the risk involved (P20)*

Subtheme 2: Guide to reducing risks

Given that risk was a source of challenge identified an investment decision, it was prudent to know whether the participants consulted with financial experts about their investment decisions. From the interview data transcribed, the following were uncovered:

(a) Consultation with experts in investment decision

Twelve of the participants note that they consulted with financial experts. Some of the reasons given for consultation is that they do not know it all.

> *Yes, I can't know it all. I speak with wzoertj (P8)*

Another reason was to gain an unbiased assessment of their financial structure. It thus means that regardless of one's level of financial knowledge on the market, individual prejudice may likely creep in. Having an unbiased assessment may have provided the profitability of stocks from a different perspective other than their own.

> *I do often before investing in order to give me an unbiased assessment of my financial structure (P12).*

One of the participants, however, notes that despite seeking expert advice, the decision to invest is largely theirs.

> *Yes, always get advice but make your own decisions (P4)*

Nevertheless, ten of the participants indicated that they do not consult any experts before making investment decisions.

Subtheme 3: Positive decision on investment and expected returns

The participants were asked the following question “Do you usually make a positive decision on your investment and expected returns?” From the interview, most of them indicated yes while few answered no. It was gathered that participants try to buy dynamic market trends, which leave them with expected returns. This is reflected in the statement below.

> *Again, we try to buy the dynamics of market trends that sometimes leave us with close to expected returns or more than expected returns (P8).*

Equally, the ability to consider risk factors and make adequate plans contributed to making expected returns.

> *Yes, because after I have considered the risk factors, drawn my financial plans, considered the appropriate mix of investment and all that I do expect positive returns (P16).*

Nevertheless, some of the participants indicated that have not always made positive investment decisions and expected returns. It was uncovered that some have made wrong decisions in the past on investment.

> *Not always, I have made a wrong decision in the past (P3)*

Subtheme 4: Future plan to achieve investment success

Investment decisions and investment portfolios are long-term plans. Thus, the participants were asked the following question “What are your plans to achieve investment success in the future?” From their responses, the following were uncovered:

(a) Diversification (3)

Three of the participants note that they intend to diversify their investment portfolio.

> *To keep investing in a diversified portfolio no matter how small the investment might be (P9).*
>
> *Through diversification of investment portfolio (P15)*

(b) Profitable deals (4)

Four of the participants revealed their future investment plan is to engage in profitable deals.

> *To study the market and invest in profitable deals (P1).*
>
> *Get a proper return on investment, and investment income (4)*
>
> *To invest in a firm that has track records (P15).*
>
> *To study the market and invest in profitable deals (P11).*

(c) Monitoring and management (6)

Six of the participants disclosed their plan of investment is to monitor and manage their investment.

> *Monitor and manage (P7)*
>
> *Monitor the growth of the stock market (P12)*

Study the project/s very well, and don't procrastinate especially on decisions that will help yield success. Talk to professionals in that line of investment etc. (P20)

To guide my existing investment seriously and follow the market trend (P21)

(d) Adequate training (5)

Five of the participants indicated that their plan for investment is to receive adequate training about it.

Receive adequate training and work on my trading psychology (P2)

Such training includes financial information about the investment.

Financial information (P10)

I try to educate myself more on how market decisions are made (P16).

(e) Investing in less risks portfolio (2)

Another plan uncovered is investing in a lower-risk portfolio. Two of the participants revealed this.

Invest in medium risk (P19)

Invest in less risky stocks with high ROI (P23)

6.3 Chapter Summary

In summary, the quality data was discussed under three themes. Theme 1 had six subthemes addressing the factors influencing investment decisions. Theme 2 had four subthemes on investment decisions and theme 3 had themes on guides to maximizing returns and reducing investment risks. The figure below subsumes the most common words uncovered from the participants' responses. At a glance, one can draw out that most of the participants answered 'yes' to the questions posed during the interview sessions. The word investment, financial, income, information, risky, stock, profit, market, etc, appeared prominently during the cause of the interview.

Figure 6.4: Summarises the most common words emerging from the interview.

Source: Researcher's Own Construct

The next chapter, we will delve into the research findings and draw conclusions in relation to the existing literature and the research objectives.

CHAPTER SEVEN

DISCUSSION OF FINDINGS

7.1. Introduction

The analysis of the data collected was presented in the previous chapters and this chapter draws on relevant literature to provide a robust discussion of the study results obtained from both the quantitative and qualitative phases.

7.2. Discussion of Findings in Terms of Research Objectives

7.2.1. Objective 1. To explore small investors and investigate the psychological factors influencing their investment decision-making in derivative markets using factor analysis.

Part of the research enquiry was to explore small investors and investigate the psychological factors influencing their investment decision-making in the derivative market using factor analysis. According to behavioural finance studies, individuals do not consistently exhibit the level of rationality presumed by economists; their decisions frequently reflect the influence of their psychological emotions. (Baker and Yi, 2016: 319). Several studies conducted in ASEAN, Middle Eastern, and Western nations have confirmed that psychological factors are associated with and influence the decision-making processes of investors in their respective stock markets. For instance, Zhou (2014: 47) conducted research on the Vietnamese stock market, while Riaz and Hunjra (2015: 67), along with Farooq Afzal, Sohil, and Sajid (2015: 44), focused their studies on the Pakistan Stock Market. Additionally, Dhaoui (2015: 45) examined the Japanese stock market. Based on this, this section examines the influence of psychological factors such as consistent investment strategy, self-confidence, satisfaction with investment decisions in the last year, ability to handle difficult situations in the stock market, and reliance on past returns of the stock on investment buying and selling decisions. The findings were drawn from both the qualitative (interviews) and quantitative (survey analysis) results.

In the quantitative phase, it was found that consistent investment strategy had significant agreement among the majority of respondents (80.5%). Self-confidence also had a significant agreement (87.2%), as did the ability to handle difficult situations (80.4%) and rely on past returns for investment decisions (80.4%). Satisfaction with investment decisions in the last

year had the lowest significant agreement (70.7%) of all, with (P<0.001). The factor with the strongest agreement and highest mean (Mean=3.91, SD=1.161) was consistent investment strategy. This may be because investors do not want to make bad decisions, so they prefer to stick with the same strategy. In line with Massol and Mollines (2015: 16), investors may opt for a similar course of action, such as divesting a depreciating stock, in order to evade making an unfavorable investment decision and bypass the need to report a loss. This finding was also supported by the qualitative findings where all the participants agreed and accepted that they felt bad and sad after a loss, while some had the courage to move on, but a few were completely discouraged.

It also emerged from the qualitative findings that there are factors that motivate investors in their investment buying and selling decisions. During discussions with the participants, three words were common to all of them: wealth building, making money, and financial return. These are the motivating factors that drive investors in their buying and selling decisions. The study's results align with the principles of prospect theory, which posits that individuals base their decisions on the potential gains and losses rather than the ultimate outcome (Tversky and Kahneman 1992: 297). These findings are in harmony with the research conducted by Tripathy (2014: 70) conducted a study that delved into the impact of psychological biases on the cognitive decision-making processes of individual investors. The results of Tripathy's research reveal that investors in the Bhubaneshwar Stock Exchange demonstrate psychological biases, such as overconfidence, anchoring, regret, and loss aversion, which exert a significant influence on their decision-making. This suggests that regret aversion plays a significant role in shaping investors' selections in their investment choices.

Furthermore, contrary to the report that psychological factors influence investment buying and selling decisions, the findings were tested with regression analysis. The outcome showed that psychological factors had a low F-value and a non-significant p-value. This means that the independent variable (psychological factor) is not strongly related to the dependent variable (decision making). This confirmed that there is no substantial association between psychological factors and investment decision-making in the derivative market. Consequently, the hypothesis was not supported, leading to the conclusion that psychological factors do not have a significant role in investors' investment decision making. The findings imply that psychological factors do not influence investment decision making in the derivatives market of JSE. Univariate analysis was conducted to test the odds ratio of psychological factors in investment buying decision. For buying decision, the odds ratio was found to be 0.753 (0.567-1.002) with a significance level of p-value = 0.051, which was higher than 0.05. However, the multivariate analysis showed the odds ratio to be 1.528 (1.114-2.097) with a p-value of 0.009.

This further confirms a positive relationship between psychological factors and investment buying decision in the derivative market, when moderated with other factors such as demographic and behavioural factors. This implies that the hypothesis is affirmed, and it can be concluded that psychological factors indeed have a substantial impact on investors' purchasing decisions. It is important to note that psychological factors alone do not influence investors' decision, but rather work in conjunction with other factors.

The same odd factor was used to test the selling decision. The OR was 0.833 (0.648-1.072) with a p-value of 0.150. This was further confirmed by multivariate computation which showed the OR as 0.831 (0.633-1.091) with a p-value of 0.183. This confirms that there is no significant relationship between the psychological factor and investors' investment selling decision in the derivative market. This means that the hypothesis was not supported, leading to the conclusion that psychological factors do not significantly influence investors' decisions to sell their investments. This discovery aligns with the research conducted by Lim (2012: 4), Bashir et al. (2013: 42), and Wamae (2013: 69), all of which indicated that only a limited number of psychological factors significantly affect investor decision-making. To date, there is no evidence suggesting that psychological factors have a substantial adverse impact on investors' decision-making. The plausible reason for this may be attributed to the variances in geographical location and demographic characteristics of South African investors, as well as other factors not investigated in these studies.

7.2.2. Objective 2: to identify the behavioural and demographic factors that influence investors' decisions.

According to the principles of behavioural finance, individual investors do not consistently act in their own best interests (Ritter, 2003: 430; Somil, 2007: 17). Consequently, behavioural finance draws from both individual and social theories to comprehend and emphasize stock market performance (Fromlet, 2001: 65; Birau, 2012: 48). Kudryavtsev and Cohen (2011: 21) have documented that women exhibit a greater susceptibility to behavioural biases compared to men. In various studies, demographic and socioeconomic factors have been identified as predictors of risk tolerance behaviour (Worthington, 2006: 20). In view of this, this section aims to pinpoint the behavioural and demographic elements impacting investors' buying and selling decisions. The findings were drawn from both the qualitative (interviews), and the quantitative (survey analysis) results.

To identify the behavioural factors that influence investors' decisions.

In the quantitative phase, it was found that tolerance for investment risks has the most significant agreement of respondents (95.7%), happiness with the returns on investment has the respondent agreement of (93.2%), becoming more risks averse after prior loss also has a significant agreement of (95%), while other investors' decisions of chosen stock types has (92.7%) and being attracted to affordable market price has (84%) all with ($p<0.001$). The findings reveal that the factor that has most agreement is Investor tolerance for investment risks with highest ($M=3.91$; $SD=1.161$). The finding is in consonant with Mitroi and Oproiu (2014: 157) highlighted the influence of behavioural bias on the connection between risk and returns, suggesting that a high level of risk is not necessarily associated with high returns, in contrast to traditional finance theory. Mitroi (2016: 206) further posits that anomalies in pricing can be investigated through the lens of behavioural finance. The impact of age on investors' risk-taking capacity has also been demonstrated in the study conducted by Kabra, Misha, and Dash (2010: 310). Their research delved into the key factors influencing investor behaviour and how these factors correlated with risk-related behavioural patterns among men and women across different age groups.

According to Rana, Murtaza, Noor and Rehman (2011: 70), individuals with a higher level of education in financial markets tend to possess more proficient and effective risk preferences, resulting in a more rational perception of risk compared to those without such education. This assertion is further supported by the qualitative finding that most of the investors use their instinct in buying and selling their investment. While this is a risk-taking event, but they still have some level of tolerance for taking this risk. In the qualitative phase of the study, it was revealed that most of the participants do not hesitate to sell their investment with a little or small profit margin %, while most of the participants agreed that buying of investment depends on the profitability of such investment and not on the influence of other investors. The study findings coincide with the cognitive theory posits that an individual's behaviour is primarily influenced by their own thoughts and mental processes. Consequently, contemplation and self-perception play a pivotal role in shaping both behaviour and emotions (Beck et al. 2008: 97). This perspective finds support in the observations made by Le Bon and Meruka (2006: 399), who noted instances of irrational behaviour and highlighted the impact of the market on an individual's decision-making process, drawing from insights in cognitive psychology. Additionally, Massol and Mollines (2015: 16) suggest that investors might engage in similar actions, such as selling a stock that has decreased in value, as a means to avoid making a poor investment choice and to sidestep the need to report a loss. They argue that investors employ this strategy as a way to motivate or rationalize their decisions.

From the qualitative findings it was reveal that investors sell investment to earn profit while some are afraid that the price may drop soon, and some agree that they have a good return on their investment.

To identify the demographic factors that influence investors' decisions.

In terms of increase in income level, family structure, and investor's educational levels, it was found that respondent with increased income level has more interest in investing. As drawn from the quantitative analysis, it was discovered that increase income level has a significant agreement by most of the respondent (92.3%), follow by investors educational level with a significant agreement of (91.3%) while family structure has a significant agreement of (85%) and maturity date of investment with the lowest of (79.4%) all with ($p<0.001$). The factor with the strongest agreement is increase income level, that is investors considered increased income level as the most significant factors for investment buying and selling decision. This finding is supported by qualitative result when all the participant agreed that their occupational type, income level, influence their investment decision. It was affirmative by 90% of the participant that investor income and effect of income level plays a huge role in investment buying and selling decision. One could rightly assume that income is a critical demographic determinant of investment decisions. These findings received validation from Bertaut and Starr-McCluer (2000: 26), who noted that as wealth and income levels rose, households exhibited a greater propensity to possess assets linked to stocks. This observation aligns with an earlier investigation conducted by Barber and Odean (2001a: 270), which demonstrated that investors with higher income levels tended to allocate their investments into portfolios comprised of more volatile stocks. Likewise, Sadiq and Ishaq (2014: 5) recorded that individuals possessing higher wealth demonstrated a heightened inclination to undertake increased risk in their investments.

Furthermore, this study found that male is actively involved in investment more than female. It is evident that Male investors were found to be more risk-tolerant than their female counterparts. This discovery aligns with Brick et al.'s (2012: 140) research titled "Risk Aversion: Experimental Evidence from South African Fishing Communities," which found that female participants exhibited a higher degree of risk aversion compared to their male counterparts. These findings were similarly noted by Rana, Murtaza, Noor, and Rehman (2011: 70), who observed females generally exhibit a tendency toward lower risk preferences compared to males and are less inclined to make risky decisions. Males are more overconfidence than female while gender and personality trait like emotionality affect female

to be more risk averse– this means that female are more emotional about risks, they feel more worried and unhappy about losing, than male, and exhibit self-doubt (Cooper, 2003: 42). Myers et al. (2010: 7) suggest that the emotionality trait is occasionally labeled as the anxiety factor. It is also known that male is more open to experience and has ability to accept change than female (Cooper, 2003; Kaufman, 2013: 238). Male investors also display agreeableness personality than female. This would imply that female will face difficulties building a sufficient wealth (Fisher and Yao, 2017: 196), which will further prohibit them from having as much wealth as male when they are old.

Most of the respondents were private organization employed and are also married which is the most reason why the increase in income level influences their decision. According to the 1975 survey conducted by Cohn et al. (1975: 609), which involved 972 respondents, it was evident that investor risk tolerance tends to be higher as wealth and income increase. This observation was also substantiated by Sadiq and Ishaq (2014: 4), who noted that investors with higher levels of wealth are more inclined to take on greater risks. On the other hand, this study found that race and nationality place an important role in demographic of investors in South Africa, most of the investors in south Africa as revealed by the study survey are non-south African citizens and they are black which implies that most black South African does not invest in their country while most of the investor in south Africa are mostly white South African citizen. Further to the above, and in contrast to the report, the regression analysis using both univariate and multivariate was computed to test the odds factor of behavioural and demographic factors influencing investment decisions, the result shows that using univariate analysis to test the behavioural factor on buying decision and selling decision, For buying decision the OR was 1.477 (0.833-2.618) with the significance of p-value = 0.182 which was lower than 0.05.

The multivariate computation also shows OR to be 0.614 (0.326 - 1.158) with a p-value of 0.132 and the selling decision for both factors is Behavioural OR was 0.899 (0.608 -1.330) with p-value = 0.596 this further confirmed by multivariate computation which shows the OR 0.935 (0.600-1.455) with p-value of 0.765. This further confirmed that there was no significant relationship between behavioural factors and investor investment buying and selling decisions in the derivative market. For the demographic factor, the result shows that using univariate analysis to test the behavioural factor on buying decision and selling decision, For buying decision the OR was 1.325 (0.890 -1.973) with a significance of p-value = 0.165 which was lower than 0.05. The multivariate computation also shows OR to be 0.804 (0.510 - 1.267) with a p-value of 0.348 and selling OR was 1.082 (0.812-1.444) with p-value = 0.587 this further confirmed by multivariate computation which shows the OR 1.126 (0.810-1.564) with p-value

of 0.480 this confirmed that there is no significant relationship between behavioural and demographic factor and investor investment buying and selling decision in derivative market of JSE. This implies that the hypothesis was refuted, leading to the conclusion that behavioural and demographic factor does not have any significant role in the investment purchasing decisions of investors in the JSE derivative market.

7.2.3. Objective 3: To determine the influence of financial literacy and accounting information on Investment decision.

behavioural finance researchers have explored the variable of accounting information using consistent dimensions. These dimensions encompass the financial statement's condition, anticipated earnings cooperation, expected dividend cooperation, affordable share price, past stock performance, stock marketability, and dividend payments (Merikas, Merikas, Vozikis and Prasad, 2011: 94). Huston (2010: 48) defines financial literacy as the assessment of an individual's capacity to comprehend and apply information related to personal finance. Furthermore, financial literacy encompasses an individual's ability and confidence in applying their financial knowledge for making financial choices. Considering this, this part seeks to assess the impact of financial literacy and accounting information on the choices made in investment purchases and sales. The findings were drawn from both the qualitative (interviews) and the quantitative (survey analysis) results.

To determine the influence of financial literacy on Investment decisions.

Drawing from the quantitative finding, being Knowledgeable about investing has the most significant agreement of respondents (94.4%), Close attention to financial news (93.5%), relying on previous market experience for the next investment (92.7%) and being financial literate in investment has the most disagreement by the respondent (55.8%) and the statement with the strong agreement is Knowledgeable about investing. This finding was supported by the qualitative result that knowledge about the financial market is critical, as investors cannot make a blind date on an investment without adequate knowledge of the market or the stock. This is an important reason because the full knowledge of the financial market in which one hopes to invest needs to be studied before deciding on an investment because different country has their own modus of Operandi. This is also supported by Lodhi (2014: 70) who conducted a study that explored the influence of financial literacy, extensive experience, the utilization of accounting information, and age on investment decision-making through a survey conducted in Karachi, Pakistan. According to their empirical findings, financial literacy and the use of accounting information played a significant role in reducing information asymmetry and enabling investors to make investments in riskier assets. To comprehensively grasp concepts

like budgeting, cash flow management, and asset allocation to achieve financial objectives, investors need to possess financial literacy (Seth, Patel, and Krishnan, 2011: 2).

To determine the influence of accounting information on Investment decisions.

A study by Lewellen, Lease and Schlarbaum (1977: 33) reveal that investors' main source of information is fundamental or technical analysis. Studying financial statements to make a decision, the condition of the firm, past performance of the firm stock and believing in one skill and knowledge were factors determined to influence buying and selling decisions. Studying financial statements to make a decision has the most significant agreement by the respondent (95.2%), the condition of the firm (95.3%) Past Performance of the firm stock (92.3%), believing in skill and knowledge (91.8%) and the statement with the strongest agreement with the highest mean SD of (4.21) is studying financial statement to make a decision. This implies that most respondents considered the financial statement of the firm as the most significant influence on buying and selling decisions. This result is supported by qualitative findings where participants agreed that a firm's financial statement is important for investor investment buying and selling decisions.

According to some of the views uncovered, it was revealed that the firm's financial statement provides an avenue for sound analysis of the investment. The outcome is in alignment with Ikeobi and Jat (2016: 94) conducted an evaluation of accounting information using various dimensions, including anticipated bonus issues, historical dividend distributions, future dividends, past performance records, and projected earnings per share. The study's findings emphasize the importance of ensuring investors have access to information about a specific organization. Moreover, the study recommends that organizational decision-makers should provide timely information related to the organization, which investors can utilize for investment purposes. The contradictory to the findings that investors need to have access to get information, the multiple regression analysis, employing a multivariate approach, was conducted to examine the relationship and significance of financial literacy and accounting information on investment decision-making. The results indicate that there is no discernible relationship between financial literacy and accounting information and their influence on investor decision-making. The F value of this factor is low which indicates that financial literacy and accounting information are not correlated with investment decision-making, because the predictor variable is not strongly related to the outcome.

7.2.4. Objective 4: To understand the influence of personal attitude and perception on individual investors' investment decisions.

Research findings demonstrated that investors have the ability to swiftly enter or exit the market, primarily driven by their confidence and their perception of the current market conditions (Kavitha, 2015: 3359). According to Kennedy (2013: 103), these approaches highlight that changes in behaviour stem from a blend of attitudes, societal norms, perceived behavioural control, and behavioural intentions.. This present study has exhaustively argued the impact of personal attitude and perception on investors' investment decisions. In view of this, this part examines the influence of personal attitude and perception on investment buying and selling decisions. These statements examined to understand the influence of personal attitude and perception on investment decisions, I regularly invest on my own has the respondent agreement of (85.5%), while I tend to reduce risk through portfolio has the most agreement of (95.7%), I buy hot stock also has an agreement of (91.3%). When my investment does not produce the result, I will consult financial experts only (46.9%) while increasing the sum of my stock market holding if last month's trading volume is higher is only (40.6%).

Therefore, the statement with the strongest agreement and highest (mean 4.20) is I tend to reduce risk through portfolio diversification. This can be corroborated by the study of Rundmo (1997: 1) that this perspective posits that risk perception impacts behaviour concerning potentially dangerous risk sources and their outcomes. It was observed that the connection between risk perception and behaviour arises from the fact that the same predictor variables influence both of these aspects. Furthermore, Sachse, Jungermann and Belting (2012: 439) examined risk perception as a type of investment product in which risk constitutes an inherent characteristic of all investment choices, with numerous investors asserting that they lack adequate information about these risks when making investment decisions. The study concurs with heuristics theory, This theory posits that individuals employ heuristics to mitigate the potential for losses in situations characterized by uncertainty (Tversky and Kahneman 1974: 1127). Heuristics are simplified decision-making rules that individuals employ when facing intricate and uncertain scenarios to streamline their decision-making process. According to Shah and Oppenheimer (2008: 69), heuristics serve as a means to reduce effort, typically achieved by analyzing only a limited number of cues, incorporating less information, or considering only a small set of alternatives. Furthermore, Shiller (2003: 34) argued that investors typically incorporate all accessible information into their decisions, which is why prices are often regarded as reflecting the true investment value.

Contrary to the findings that personal attitude and perception influence the decision making, the logistic regression analysis, both univariate and multivariate was computed to test the odds factor of personal attitude and perception influencing investment decision, the result showed that personal attitude and perception does not have any prominent role in investors'

investment buying and selling decision in the derivative market. Meaning that the hypothesis was rejected. Because personal attitude as a predictor variable alone does not influence the investors' decision-making, it only influences when it is moderated with other factors like demographic factors, accounting information etc. This observation is in line with the research conducted by Raju and Patra (2016: 55) in their investigation of Investors' Attitudes towards investing in Equity stocks within the context of Visakhapatnam District. Their study identified the top five factors that investors considered highly influential, with the nature of the company's operations being the most important, followed by the company's profitability, annual reports, and price-to-earnings ratio, and business model of the company. From the South African context, this implies that the company's annual report and business model are important for investors' investment decision-making.

7.2.5. Objective 5: To identify the most significant factors that could influence investment decisions in the derivative market.

To identify the most significant factors that could influence investment decisions in the derivatives market. The study employs the use of descriptive analysis to test these factors. Forecasting changes in stock prices based on recent stock prices, believing that one is less likely to suffer bad events, market information, using financial models, and utilising technical analysis were all factors considered to be the most significant factor that could influence an investment decision. The result reveals that there was a significant agreement on I believe that am less likely to suffer bad event (80.9%) while the most significant agreement by the respondent was on market information is important for investment (94.9%), I use financial model for investment has (72.2%), utilising technical analysis while investing has (72.2%) and the least agreement was on I forecast change in price base on recent price with (52.7%). The survey reveals that the state with the strongest agreement is Important of market information for investment with the highest (M=4.22; SD=0.591). This implies that respondents considered market information the most significant influencing factor for investment buying and selling decisions in the derivative market.

To identify the most significant factor, it was uncovered from the qualitative interviews' findings that market risk factors and information overload are the most influencing factor. This finding is in accordance with the quantitative finding. This means that information is very important in investment buying and selling decision-making in the derivative market. This is supported by Bhandari, Sangwichien, Techato and Gyawali (2021: 728) study that says that risk means being sensitive to the arrival of new information is crucial, as such information can greatly enhance decision-making. High-quality information plays a significant role in enhancing

decision-makers' well-being and their ability to manage risks effectively. As noted by Harcourt (1967: 96), information holds intrinsic value and can significantly influence ex-post decisions based on signals. A reliable signal can lead to more informed and improved decision-making for investors. Sound information aids in achieving a deeper comprehension of risks, streamlining the processing of investment-related data, and ultimately contributes to risk mitigation (Jayaprakash and Hridhya 2020: 253). There are various types of information that are relevant for investment purposes are: which are world affairs, domestic information, industry information, company information, security market information, data, and related markets information (Jayaprakash and Hridhya 2020: 254). Investors rely on prompt and precise information to guide their investment choices.

This is because, without accurate and timely information about the appropriate asset, investors may make incorrect investment decisions. To make informed investment choices, investors need to be knowledgeable about the reliable sources of market information. It also unfolded from the qualitative findings when participants were asked to identify challenges faced in making an investment decision and how it has been solved. The following disclosed, are ignorance of how the market works, capital (this was explained as raising money through a bank), and friend or family and market risk factors (market uncertainty and inflation).

7.2.6. Objective 6: Guide to minimise risk and maximise returns.

In general, portfolio optimization theories and approaches can be applied to individual assets or entire asset classes, and these models are not limited to particular types of investors. Diversification is a strategy designed to mitigate risk by spreading investments across various asset types (Harelimana, 2017: 18). Through diversification, the goal is to ensure that, at any given moment, the value of some of your holdings may decrease, while others are up, but overall, your portfolio remains stable. The purpose of diversification is to reduce the influence of unforeseen risk events within a portfolio. It achieves this by leveraging the favorable performance of certain investments to counterbalance the unfavorable performance of others. As a result, diversification is most potent when the securities in the portfolio exhibit limited correlation. Mehta (2020: 110) also highlights that diversifying across sectors and effectively managing financial securities with negatively correlated returns can reduce unsystematic risk and lead to higher returns. The finding of the section is drawn from the qualitative result, where participant was asking questions to know their view and opinion on what guide they think can maximise their returns and reduces their investment risks.

The participants highlighted several important factors to take into account when making investment choices. Firstly, monitoring the financial performance of investments and studying the investment market to identify trends and opportunities are critical to maximizing returns. Secondly, social media can serve as a useful guide to staying informed and making informed decisions. However, it is important to exercise caution and verify information from reliable sources. Thirdly, considering the level of risks involved in investment decisions is important. Although riskier investments have the potential for increased returns, they are also accompanied by heightened uncertainty and the potential for substantial losses. Therefore, it is essential to strike a balance between risk and return and seek expert advice when necessary. Fourthly, to reduce risks, it is important to seek expert advice and consultation when making investment decisions. While experts may not always make the right decisions, their input can provide valuable insights and help investors make informed decisions.

Finally, to achieve investment success in the future, it is important to diversify investments, seek profitable deals, and monitor and manage investments closely. This requires adequate training and expertise in analysing market trends, risk management, and financial planning. These findings imply that investors need to be well-informed and stay abreast of market trends and developments. It also emphasizes the importance of seeking expert advice and managing risks effectively. By doing so, investors can increase the likelihood of maximizing returns while minimizing the risks involved. Given the information presented above, it is reasonable to assume that the integration of this theory and these concepts is satisfactory (monitoring and management, adequate training, and profitable deals) and drawing financial plans could provide an effective guide to minimize investment risk and thereby maximizing returns. This would not only influence investors' positive behaviour toward investment but also will help investors to use their financial resources judiciously to achieve their financial goals in derivative markets.

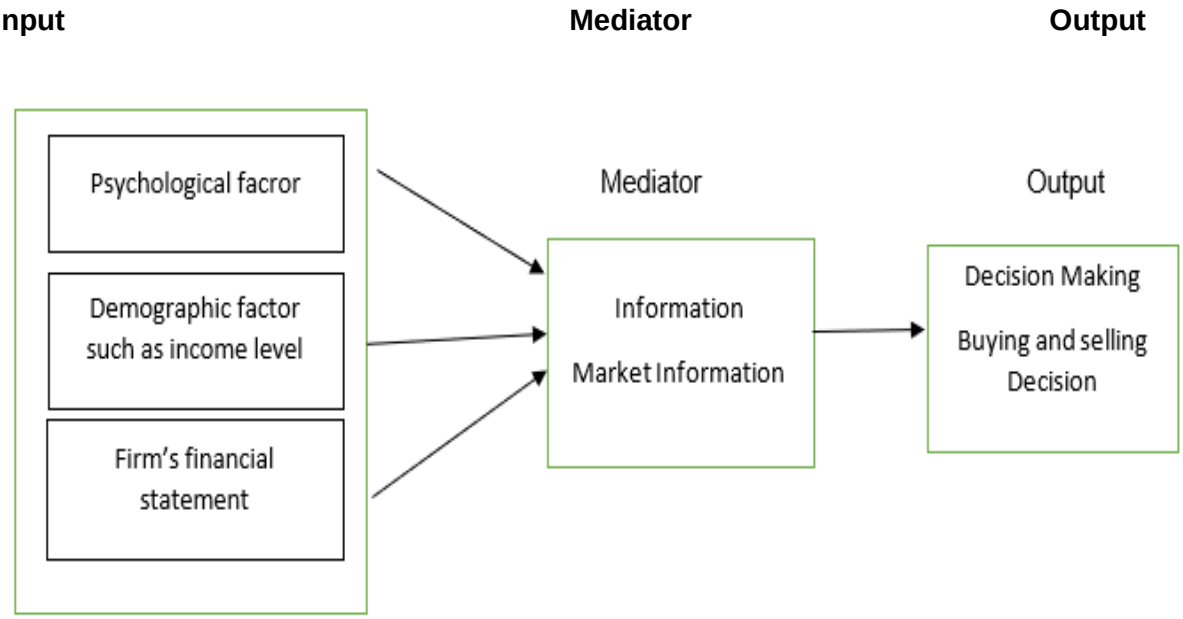
In summary, the study's findings have found alignment with pertinent literature and theory from the discussion, it was confirmed that the JSE investor are influenced by psychological factor when taking investment buying decision while all other factors are not significantly influencing their decision and the plausible reason for this may be attributed to the differences with regard to the geographic location and demographic characteristics of South African investors. And other logical reason for this may be attributed to inaccurate and imbalance accounting information of a firm. However, there were other challenge faced by participant (investor) while making investment decision. This discussion reveals the challenges which include ignorance on how market works / operate, capital and market risk factor. Given this weakness,

a framework to reduce risk and maximise investment returns was proposed to guide both incoming and existing investor on how to manage their investment while making decision.

7.3. Revised Conceptual Framework

This section presents the updated conceptual framework, showcasing the interconnections among the study variables. Only the variables found to be statistically significant in the multivariate regression analysis have been incorporated into the revised conceptual framework. The study's hypothesis was evaluated according to the outcomes of the multivariate regression analysis; consequently, behavioural factors, financial literacy, accounting information, personal attitudes, and perceptions were omitted from the revised conceptual framework derived from the outcomes of the multivariate regression analysis.

Figure 7.1: Revised Conceptual Framework



Source: Researchers' Own Construct

7.4. Discussing the Revised Framework and Hypotheses Testing

In this section, the research hypotheses are examined in light of the results presented in the logistic regression analysis using both univariate and multivariate. The revised framework will exclusively encompass the multivariate relationships among the study variables.

Hypothesis One: Psychological factors influencing investment decision-making.

Logistic regression analysis using both univariate and multivariate was computed to test the odds of psychological factors, and odd factors influencing the buying decision among the respondents. Based on the univariate analysis, psychological factors do not have a positive association with buying decision-making, additionally going through the result of the multivariate analysis, psychological factors with other parameters influence investment decision-making. The outcomes of the multivariate analysis indicated a significant association between psychological factors (OR = 0.831, 95% CI: 0.633-1.091, p = 0.009) with a p-value of 0.009, which is below the threshold of 0.05. This robustly affirms the presence of a statistically meaningful and positive relationship between psychological factors and investment buying decisions within the JSE derivative market. In essence, the hypothesis stands validated, concluding that psychological factors, alongside other parameters, play a pivotal role in shaping investors' decision-making processes in the JSE South Africa derivative market.

The research outcomes align with the prospect theory, which posits that individuals make decisions considering the potential gains and losses, rather than focusing solely on the final outcome (Tversky and Kahneman, 1992: 431). The results of this research align with Singh (2012: 116), who proposes that while psychological factors can streamline decision-making, they can also introduce biases, especially when circumstances shift, potentially leading to suboptimal investment choices. However, Tyburski (2017: 20) contends that psychological elements influencing decision-making remain highly relevant to critical thought processes. Psychological biases have been observed to influence people's behaviour, as indicated by Ansari and Moid (2013: 28). Many psychological biases impacting investors' behaviour and, consequently, their decision-making are overconfidence, risk aversion, attitude, herding, anchoring, heuristics etc.

7.4.1. Demographic Factor

The survey analysis revealed that income level is the primary factor that exerts the most significant influence on investment buying and selling decisions among investors. This finding has strong implications for investors and financial planners, as it highlights the importance of understanding the income levels and earning potential of investors when making investment decisions (Zhu, 2003: 9, Islamoglu et al., 2015: 540). The results also suggest that investors' educational level is another important factor to consider. While not as strong as income level,

it continues to exert a notable impact on investment decisions. Therefore, financial planners and advisors should consider the educational background of their clients when providing investment advice. The survey also found that family structure has a significant influence on investment decisions. This implies that family dynamics, such as dependents and financial obligations, should also be considered when developing investment strategies (Musdalifa, 2016: 10, Rajdev and Jssciw, 2013: 112).

Furthermore, the maturity date of investments had a relatively lower agreement among respondents. This may indicate that investors prioritize current income over long-term gains or may suggest a lack of understanding of the importance of maturity dates in investment decision-making. This finding is supported by the qualitative result when all the participants agreed that their occupational type, and income level, influence their investment decision while some agreed that education level did not have influence on their decision making. Overall, the survey highlights the importance of demographic factors in investment decision-making and emphasizes the need for financial planners and advisors to consider these factors when developing investment strategies for their clients. By considering the income levels, educational backgrounds, and family structures of their clients, financial planners and advisors can provide tailored advice that meets their clients' unique needs and goals.

7.4.2. Firm's Financial Statement

According to some of the views uncovered, it was revealed that the firm's financial statement provides an avenue for sound analysis of the investment. This finding is consistent with Ikeobi and Jat (2016: 94), who assessed accounting information using dimensions such as expected bonus issues, historical dividend pay-out, future dividends, past performance, and projected earnings per share. Their study highlights the importance of ensuring that investors have access to information about specific organizations. Additionally, it suggests that organizational decision-makers should offer timely information to investors for their investment purposes (Mweu and Omwenga, 2017: 7).

7.4.3. Market Information

In the financial market information means data. Market data refers to information pertaining to the prices and trading volumes of a specific stock, bond or derivatives which are actively traded within the market. It enhances the understanding of how stocks or derivatives behave in a financial market. Market information holds significance as it is collected and analyzed to help investors comprehend the potential risks associated with investing in a specific security.

This information is important to execute, buy or sell decisions, and strategies to follow in the market, and can be used to generate volatility of a particular stock and predict risk, it has been used for historical analysis, it is used in technical analysis. Market data plays a crucial role in the financial market, supporting various services and activities that would otherwise become obsolete without its timely availability. The research underscores the paramount importance of market information in shaping investment decisions. Investors rely on accurate and timely information to guide their investment choices. Without access to the right information at the appropriate moment, investors may make suboptimal decisions regarding their investments.

In order to make informed investment decisions, investors must be well-informed about the various sources of information available in the market. According to a study conducted by Sawalqa (2012: 115), which aimed to assess the importance of different sources of corporate financial information among Jordanian individual investors, the research revealed that Jordanian individual investors rated the corporate annual report as the most crucial source of information for their investment decisions. Additionally, Stalnacke (2019: 1351) conducted a study to investigate the information sources utilized by individual investors in their financial decision-making and their correlation with stock market expectations. The findings indicated that investors tend to rely more on filtered financial information, such as information provided by professional intermediaries, as opposed to unfiltered financial information like data from annual reports and financial statements. Interestingly, investors who frequently utilized filtered financial information displayed greater confidence in their stock market expectations and were willing to take on more significant risks in their stock portfolios. The author suggests that investors might benefit from incorporating unfiltered financial information into their decision-making processes to potentially reduce portfolio risks and achieve higher returns.

Furthermore, Gniewosz (2012: 223) conducted research to explore the role of accounting and other information in the decision-making process of institutional investors regarding share investments. The study revealed that the significance of the annual report as an information source could change over the course of a year. These studies collectively highlight the importance of various sources of financial information in influencing investment decisions, emphasizing the role of the corporate annual report, filtered financial information, and changing dynamics in information source significance over time.

It can be deduced that the importance of the annual report as an information source undergoes fluctuations over the course of a year, transitioning from being a primary source of information to assuming a more confirmatory role. Additionally, the mediating role of information in the relationship between earnings and investment decision-making behaviour was investigated

by Rana et al. (2014: 81). To test their hypotheses, the researchers administered a questionnaire to gather data from investors participating in the bustling Pakistani stock exchanges located in Islamabad, Karachi, and Lahore. The findings indicated that information searches, heuristics, and education had a positive and substantial influence on investment decisions. Wealthier investors were found to be more inclined to seek advice from financial experts, whereas less affluent investors displayed less concern in this regard. Interestingly, the study observed that investment in risky assets increased when investors received more advisory support.

In summary, the research suggests that the significance of the annual report in terms of information source can vary throughout the year, and the study by Rana et al. highlights the mediating role of information in the relationship between earnings and investment decision-making behaviour, particularly in the context of different investor wealth levels.

7.4.4 Investment Decision Making

Decision-making is the dependent variable, in this context, can be described as the result influenced by the independent variable for the conceptual framework. Hence investment decision becomes an easy outcome when investors take into consideration other influencing factors on buying and selling decision of investors depending on another important parameter. Previous research indicates that investors who sell their assets for less than the original purchase price often anticipate the selling price to exceed the asking price of other sellers. The selling price is not solely determined by the sellers' expectations but also influenced by market corrections (Subramaniam and Velnampy, 2017: 399). Investors facing losses tend to engage in transactions at relatively higher prices compared to others. Pandey and Jessica (2018:650) discovered that investors, in line with prospect theory, exhibit a tendency to take fewer risks in the second half of trading when they have experienced gains, and conversely, take more risks in the second half when they have incurred losses. Parveen and Siddiqui (2018:288) offers numerous insights into the preferred assets that investors are inclined to purchase.

As previously discussed, selling decisions primarily focus on profitable assets, while buying decisions can be influenced by both previously profitable and unprofitable assets. Parveen and Siddiqui (2018: 288) suggest that buying decisions may be influenced by an attention effect. When investors make decisions to purchase assets or securities, they may not have the capacity to systematically evaluate the thousands of listed assets available. Instead, they often choose assets that have captured their attention, and past performance, whether positive

or negative, can be a significant source of attention. Furthermore, Parveen and Siddiqui (2018: 288) have already demonstrated that when it comes to individual investors, selling decisions are less influenced by attention compared to buying decisions. To arrive at this conclusion, they constructed a menu of attention-grabbing assets using various criteria, including assets with unusually high trading activity and those with abnormally high or low returns. Ultimately, their research revealed that the individual investors in their sample displayed a greater inclination to purchase these high-attention assets rather than sell them. Consequently, from the perspective of behavioural finance, investor behaviours exert varying levels of influence on both selling and buying decisions, which in turn impact the overall returns of the market.

7.5. Chapter Summary

In conclusion, the study's findings align with relevant literature and theory. From the discussion, it was confirmed that the JSE investor is influenced by psychological factors with other parameters like demographic and accounting information. While previous studies have explored the variables examined in this research, further investigation is warranted given the conflicting outcomes observed in many studies. This study introduces information as a mediator in the analysis. Future research could explore the impact of various variables on investors' decision-making behaviour while incorporating different mediators into the framework, recognizing that investors' decisions are influenced by emotions, attitudes, and biases, rendering them less than perfectly rational. The next chapter will present the study's conclusions and recommendations.

CHAPTER EIGHT

SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1. Introduction

This chapter provided an overview of the entire research project with reference to the achievement of each research objective. It also underscores the study's conclusion and provides recommendations related to the study's research goals and its theoretical contributions. The conclusion is expressed regarding the practical utilization of investment decision-making framework which could be of value to the individuals participating in the financial market as investors. A proposed investment decision-making framework for investors is offered. Moreover, the study's limitations uncovered during the research procedures are addressed, and recommendations are devised based on the insights derived from the statistical analyses which indicates on how investors can advance in their investment by fulfilling their investment obligations. Conclusively, the recommendations for future research were emphasized.

8.2. Summary of the Study

This study focussed on the behaviour of small investors in the derivatives market of the Johannesburg stock exchange. Empirical objectives provided more understanding to the overall conduct of investors.

Chapter 2 concentrated on examining the behaviour of small investors and presented Knowledge from the field of behavioural finance, offering a more comprehensive grasp of the behavioural and psychological factors shaping investors' decision-making processes, the chapter also presented reviews on the influence of various factors and focusing on psychological factors on investors' decision making. The chapter subsequently shifted its focus to review the literature concerning the prominent behavioural factors that have been observed to impact decision-making procedures of investors. These factors were categorized into two groups: internal factors, which encompass psychological and demographic aspects, and external factors, which include social, cultural, political, and environmental elements. Research has shown that all these factors can impact investors' decision-making processes. But in this study the factors were narrow down to behavioural (psychological) factor which is at the centre of the study. The primary focus of this field revolves around an individual's comprehension of how the environment influences behaviour. The chapter also explores and

review the South Africa derivative market, it functions and its impact on economic growth, its impact on economic volatility and how it is been traded.

Chapter 3. introduced financial theory related to financial market, which is brought together and discussed in detail. It explores all the theory that is related to financial market to justify the variable of this study. The theoretical review showed that psychological factor is critical in investors' decision making. Also, revealed that portfolio diversification is necessary for investors to minimise their investment risk while maximising their expected returns.

Chapter 4. explores the research methodology utilized in this study, including the rationale behind its selection. This section outlines the essential research steps and the tools employed for data collection, gives an illustration for assessing reliability and validity, as well as the methods employed in managing and coordinating the research tool. The researcher applied both quantitative and qualitative research design. Chapter 5. presents the empirical examination and the explanation of the statistical findings from the study's results in accordance with the data gathered from the questionnaire data, while Chapter 6. presents the qualitative analysis of the data gathered from the interview. Chapter 7. presents the discussion of findings from research. These include the findings from the qualitative and quantitative results that were presented concerning the goals and the concept extracted from the dataset. The objective of this analysis was to identify the factors that influence investment decisions within the derivatives market. The interviews revealed that there is investment decision that are motivated by some factors and that setting a plan/goal to achieve can maximise investment return thereby reducing investment risk. The practical objectives outlined in Chapter 8 illuminate the genuine financial decision-making characteristics and conduct of South African investors. Section 8.2 dig deeper into the outcomes of these practical objectives. This chapter offers a summary of the research, followed by the key discoveries. Additionally, it presents numerous suggestions for future research derived from the significant findings (Chapter 8). Furthermore, this chapter highlights the study's contributions to its field and also tackles some of the limitations encountered.

8.3. Key Research Findings

The primary objective of this study was to create a Framework for investors which will serve as a guide for both incoming and existing investors in their decision-making regarding investments and assist them to manage their investment in a way that investment risk will be reduced thereby maximizing their investment returns. The successful attainment of the subsequent empirical objectives played a significant role in shaping the study's findings.

The objectives of the research are to:

i. explore small investors and investigate the psychological factors influencing their investment decision-making using factor analysis.
ii. identify the behavioural and demographic factors that influence investors' decisions.
iii. determine the influence of financial literacy and accounting information on investment decisions.
iv. understand the influence of personal attitude and perception on individual investors' investment decision.
v. identify the most significant factors that could influence investment decisions in the derivatives market.
vi. develop a framework to serve as a possible guide to effectively manage and minimise risk and maximise returns.

8.3.1. Psychological Factors Influence on Investment Decision-Making

The initial objective of the study was to explore small investors and investigate the psychological factors influencing their investment decision-making in derivative market using factor analysis. The outcomes of the descriptive analysis conducted in this study indicated that investors exhibit high level of self-confidence, and they are consistent in their investment strategy, the past return of stock is served as an indication of future returns. Also, they are satisfied with their buying, selling and choosing stock decisions. The finding in the qualitative study also concurs with the quantitative. In other to generalise the finding participant in the qualitative were asked about investment feeling after loss, most of them feel bad, sad, and even discourage to continue investing, both phases of the study were in agreement that psychological factor influences investment decision.

The odd factor was used to test psychological factors on buying decision and the result reveal that P=0.009 this indicate that psychological factor is statistically significant in buying decision-making. The outcome of the regression analysis demonstrates a low F-value and a non-significant p value which reveal that there is no significant correlation between psychological factor and investment decision-making. Note that the relationship between the respondent's socio-demographic characteristics (gender, age, marital status, racial group, nationality, level of study, and faculty) and the constructs influencing investment decisions (psychological, behavioural, demographic, financial literacy, accounting information, and personal attitude) a one-way Analysis of Variance (ANOVA) was employed to perform the analysis. The results of ANOVA test showed that none of the influencing construct has a Probability value higher than

0.05 significance level, this implies the rejection of the hypothesis and leads to the conclusion that none of the influencing construct played a notable role in shaping investors' decision-making processes.

8.3.2. Behavioural and Demographic Factors Influence Investors' Investment Decisions

The second objective was to identify the behavioural and demographic factors that influence investors' decisions. The descriptive analysis shows that investors have tolerance for risk, has returns on investment, they become more risk averse after loss, attracted to an affordable price, influence by increase income level, family structure and educational level all have an influence on investors' investment decisions, these is validated by factor analysis. To generalise the finding, participants in the qualitative sample were also asked about the effect of their Income, educational level, and occupation type on their investment decision and all the participant agrees that these factors are instrumental in their process of making investment decisions. Even their decision of buying attention stock and selling investment influences their investment decision. Therefore, the two studied agreed, and this implied that behavioural and demographic factors influence investment decision making. The odd factor was also used to test behavioural and demographic factors on buying and selling decision and the result reveal no positive association between behavioural and demographic factor and investment decision-making. The outcome of the regression analysis shows a low F-value and a non-significant p value which reveal that there is no significant correlation between behavioural and demographic factor and the process of making investment decisions.

8.3.3. Financial Literacy and Accounting Information Influences Investment Decision-Making

The study's third aim was to determine the influence of financial literacy and accounting information on investment decisions. The descriptive analysis finding suggests that having sufficient information regarding investment tools, been financial literate when it comes to investment, paying close attention to financial news, financial statement of the firm, condition of the firm as reveal by statement, firm past performance, and skill and knowledge of the market all these factors influence the decision-making process of investors regarding their investments. This was also consent to in the qualitative phase of the study when the participant was asked the influence of firm expected earnings, past performance, the importance of firm financial statement, knowledge of the financial market, and knowledge of financial account information, all the participants agrees that all these factors plays and important roles in their decision making. Most of the Investor in the qualitative study agree that having knowledge of the financial market and accounting information is critical to their investment decision-making,

while some believe that not all firms' accounting information is always accurate enough. This implied that accounting information and financial literacy influence investment decision.

The odd factor result reveal that financial literacy and accounting information does not influence buying and selling decision and the result reveal no positive link between financial literacy, accounting information and investment decision-making. The result of the regression analysis indicates a low F value and a non-significant p value which reveal that there is no significant relationship between financial literacy and accounting information influence on investment decision-making. In the multiple regression model, financial literacy and accounting information was found to have no significant and positive relationship with investor's investment decision making, because the predictors variables are not highly correlated with one another.

8.3.4. Attitude and Risk Perception and Investment Decision

The fourth objective of the study was to understand the influence of personal attitude and perception on individual investors' investment decision. In the descriptive analysis the mean finding suggests that buying hot stock and avoiding poorly perform stock, increase stock holding if volume is higher than usual and consulting with financial experts, reducing risk through diversification and investor investing on their own all influence investment decision making In support of this finding during the qualitative segment of the study when the participant asked about the investment preference and challenges face in making decisions. More than half of them preferred less risky investments while few preferred risk-free, and some accept that there is no investment without risk and most of the accept that their challenge is ignorance. Both studies accept that attitude and risk perception of investors' influences investment decision. The odd factor result reveal that attitude and risk perception does not influence decision-making and the result reveal no favorable correlation between attitude and risk perception with investment decision-making. The result of the regression analysis indicates a low F value and a non-significant p value which reveal that there is no significant relationship between attitude and risk perception influence on investment decision-making.

8.3.5. Most Significant Factors Influencing Investment Decisions in the Derivative Market.

The fifth goal of the study aimed to pinpoint the most significant factors that could influence investment decisions in the derivatives market, from the analysis the mean finding suggests that forecasting change in price, less likely to suffer bad events, the importance of market information, using of financial models, and utilising technical analysis were all put to test. The

descriptive analysis result revealed that the statement which has strongest agreement with a mean value above 4 is market information. This implies that market information is considered as the primary factor with the greatest influence on investment decisions within the derivative market. This finding also correlates with the finding in the qualitative phase, when participants were asked on market risk factors and information overload, Investors agree that market uncertainty and inflation also in social media one is exposed to all sort of information that may not be true about the market. This implied that market information represents the most crucial factor shaping investors' investment decisions, because invest needs more accurate and timely information to make investment decision.

8.3.6. To develop a framework to serve as a possible guide to effectively manage and minimise risk and maximise returns.

The fifth objective above will also address the main aim of the study, which is to draw a framework that may serve as a possible guide to minimise risk and maximise the return from the respondent's perspective. Therefore, to draw a possible framework from the participants' perspective some questions were asked from the qualitative sample, the descriptive analysis reveal that the statement with the strongest agreement is market information which also correlate with the finding in the qualitative phase. From the finding it's implied that **market information is a motivating factor** for investment decision-making. On the second part of the aim of the study which is guide to maximise return and minimise risks, from the participants' perspective some questions were asked and the participants responded from the qualitative sample, from the participant view monitoring the financial performance of their investment, good decision on investment and adequate analysis of investment, strategic investment, level of risks, stock quality are all guide to maximise return while consulting with expert on financial decision, making positive decision, diversification, monitoring and management, adequate training on financial market and investment, and also investing in less risky portfolio as a mean of reducing risk.

8.4. Key Finding and Contribution

Building upon previous research into the behaviour of small investors, this study has enriched the existing body of knowledge by presenting a framework for optimizing returns and mitigating risk for small investors in the derivative market. In summary, the study's results suggest that internal factors do not significantly impact the behaviour of small investors in the Johannesburg Stock Exchange's derivatives market. However, the analysis of the data reveal that psychological factors with other parameters exert a statistically significant impact on the process of making investment decisions. The framework made provision for investors to

analysing psychological factors and other parameter /biases associated with it to influence investor interested in investing in derivative market. The theoretical objectives facilitated a comprehensive exploration and empirically analyse the behaviour of small investors. Investors' behaviour and factors influencing them were different in the various classification of investors. To elucidate the significance of behavioural finance in this study, it was imperative to trace its origins, thus forming a contextual framework. The empirical objectives played a vital role in advancing the primary aim. It was also discovered that there are other factors that motivate / influence investors to invest in financial market which are wealth building, (making money) and financial returns.

8.5. Conclusion of the Study

The study established that psychological factor with other parameter had a substantial impact on investment decision-making. Consequently, the study concluded that investors' decision-making in the derivative market in Johannesburg Stock exchange is frequently affected by either overconfident, risk averse after loss, increase income level, sufficient information regarding investment tools which acts as a defense or foothold for investors in their investment decision-making. The study additionally confirmed that market information is a motivation factor for investors' when deciding. There are other factors which emerge in the cause of this study that influence investors to make investments in the financial market which are wealth building and financial returns.

8.6. Limitations of the Study

The study successfully attained all of its specified objectives, yet it acknowledges and recognizes its limitations. Firstly, the study's sample did not represent the entirety of investors in South Africa. The Sample represents a little percentage of investors in Johannesburg as JSE which is based in Johannesburg is used as a case study. Also, not all the investment companies listed under the JSE which were based in Johannesburg participate while referring to their company policy for their non-participation. The conduct of small investors in the derivatives market of the Johannesburg stock exchange is a mixed-method approach of 414 participants. While the interview section has a sample of 23 participants which reflects that the sample was from little investors in Johannesburg who agreed to answer the interview questions and can be said to be 5 per cent from the Johannesburg investors. Also, the interview did not hold physically due to Covid-19 pandemic restrictions as the data was collected during this period, but most of the participants agreed to participate by sharing the link to questions through social media and emails.

Secondly, in terms of the factors influencing investment decision, only (internal factor which are behavioural and psychological factor) were employed to assess their correlation with investment decision-making. Future research could consider investigating the impact of additional environmental, socio-economic, and political factors on investment decision-making. Additionally, the quantitative survey did not dig further into the participants' perspectives on the strategies for maximizing returns and minimizing risks due to its closed-ended nature. Including open-ended questions could have allowed for a more comprehensive comparison between the perspectives of quantitative and qualitative study participants.

8.7. Suggestion For Future Research

To address some of this study's limitations, the following areas may be explored for future research:

Extending the study to other provinces in the country could provide a more comprehensive understanding of small investors' behaviour in the South African derivatives market. Replicating the study in different regions can also test a broader range of influencing factors. Empirical findings support this idea, as they revealed that psychological factors influence investors' investment decisions by 69.8 per cent, suggesting the existence of additional variables beyond those examined in this study.

Furthermore, replicating the study in other Southern countries would enable researchers to assess and compare the behaviour of small investors in derivative markets across different regions and with other international countries. Lastly, a study can be conducted where social factor, political factor, environmental and economic factors can be explored and investigated while taking into consideration other South African economic factors and economic crises. These factors can be further explored to determine factors influencing the investment decision-making of investors in the derivative market.

8.8. Recommendation of the Study

This section offers appropriate recommendations derived from insights gained in the literature review and empirical findings regarding the behaviour of small investors in the derivatives market. Future research may explore how environmental, political, and economic factors influence small investor behaviour and decisions in the context of South Africa. Additionally, the study can be tailored to specific provinces. Furthermore, similar research can be conducted in various regions worldwide, including regions like Southern Africa, the United

States, Asia, Australia, and the United Kingdom could provide a more comprehensive insight into the behaviour of small investors.

These recommendations align with the study's objectives and overall conclusions. Therefore, it is recommended that small Investors should adapt their forecasts to incorporate new information and avoid being overly conservative with their initial reference points. The study also suggests the importance of analyzing behavioural and psychological factors that may impact investment decision-making. Additionally, investors in the derivatives market should consider consulting financial experts before making investment decisions to mitigate the risk of making poor choices.

8.8.1. Recommendations for Investors

The study suggests that investors should actively seek ways to enhance their awareness of behavioural and psychological biases by educating themselves in this field. By studying these biases and critically reflecting on their decisions, investors can gain a better understanding of how these factors influence their financial decisions, particularly in uncertain situations. Even when investors attain a satisfactory level of awareness, it is highly advisable for them to stay informed about financial market developments and participate in ongoing training or seminars on investment. This proactive approach will help them remain vigilant and less susceptible to these biases.

8.8.2. Recommendations for Policy Makers

Both organizational policymakers and government regulatory bodies overseeing the derivative market should prioritize the dissemination of information regarding the impact of behavioural and psychological factors to brokers and investors. Registered investment companies or brokers, in their capacity as financial experts, should be responsible for educating investors about the role and influence of various psychological factors on their investment decision-making processes. This educational effort should be made a mandatory duty for these professionals.

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APPENDIX A: LETTER OF INFORMATION AND CONSENT FORM

24 Palm Lodge, 3 Vermulen Road, Malanshof,
Randburg, Johannesburg
15th May 2020

LETTER OF CONSENT TO PARTICIPATE IN A RESEARCH STUDY

The behaviour of small investors in the derivatives market of the Johannesburg Stock Exchange (JSE)

Dear Participant,

I, Mrs. Bosede Olatomi IGE, hereby write to ask for your permission to participate in an academic research study. This study is set off to conduct research on small investors' behaviour in the financial market. The study attempts to investigate the factors influencing individual investors' decision-making when making an investment. It focuses on psychological, demographic, financial literacy, accounting information, individual attitude, and risk perception as a factor influencing their behaviour. The study also hopes to identify the most significant factor that could influence investors' decisions in the financial market. The title of the study is "The behaviour of Small Investors in the Derivatives Market of the Johannesburg Stock Exchange" and is under the supervision of Dr. Rufus Adebayo.

To facilitate support for this research, the participant will be interviewed through telephone or Zoom and the interview will be recorded. The participants will be subject to the moderator's (topic and questions). These questions are open-ended questions that are formulated in advance to facilitate responses from the participants on issues regarding factors influencing investors' investment decision-making.

The interview is scheduled for fifteen minutes to twenty-five minutes. No payment is to be made to participants. Participation will be completely voluntary as you are free to withdraw from the discussion at any time and your decision not to participate will not result in any form of disadvantage. As a participant, you are assured of confidentiality and your name will not be revealed without your consent. This is the essence of writing to you, asking for your help and permission in this research process.

Attached below is a declaration section which, upon agreement, you have to sign confirming your participation in this study. Please kindly forward back the signed declaration to my email before the interview begin.

DECLARATION BY PARTICIPANT.

I …….
(Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project. Where I have had any questions or queries, these have been explained to me by Bosede Ige to my satisfaction.
In addition, I understand that I am at liberty to withdraw from the project at any time, should I so desire. Therefore, I voluntarily agree to participate in this study.

SIGNATURE OF PARTICIPANT DATE:

……..
If you have any questions or concerns, please feel free to contact me or my supervisor at the details provided below.

Sincerely, DATE:

……
Bosede IGE
Email: tomi4real2001@yahoo.com
Cell: 0786778027

Person to contact for further information or if any query arises
Supervisor: Dr. Rufus Adebayo
Faculty of Management Sciences
Durban University of Technology
Tell: 0313736422; Cell: 0742007979
Email: rufusa@dut.ac.za

Mrs. Mesha Ramavather
Faculty Research Officer
Faculty of Management Sciences
Durban University of Technology
Tel: 03137356691 /3748
Email: meshan@dut.ac.za

APPENDIX B: QUALITATIVE INTERVIEW QUESTIONS.

These are the guided questions for interviews: Institution officials (Brokers) and individual investors. The questions have been designed to aid this study in the area of methodology used and objectives of the study.

FOR QUALITATIVE STUDIES

Interview questions: (Please, kindly write your response, additional paper can also be used.)

Objective 1: To explore small investors and investigate the psychological factors influencing their investment decision-making using factor analysis.

- Do you hesitate to sell an investment when there is only a small profit margin?

……
……

- Do you often invest in a stock that gains a lot of attention?

……..
…….

- Do you usually buy a stock because everyone else is buying it?

…….
……..

- Do you always consider your income before making an investment decision?

……

……

Objective 2: To identify the behavioural and demographic factors that influence investors' decisions

- Do you always have what you consider to be a good return on your investment?

……..
……

- Does your Income level have an effect on your investment decision making? How?

……..
……..

- Does your educational level or Occupation type affect your decision?

……
……..

- Is wealth maximisation a goal for you as an investor?

……
……..

Objective 3. To determine the influence of financial literacy and accounting information on investment decisions

- Do you think the small investor's educational level affects his or her investment decision?

……..
……

- Do you understand the financial account information accurately and efficiently apply it in your investment decision?

…….
……

- Do you usually ensure you have full knowledge of the financial market and the particular derivative you want before investing?

……
……

……
……..
- Does the condition of the company as reveal by the financial statement matter to you when investing?

……
……
Objective 4: To understand the influence of personal attitude and perception on individual investors' investment decision
- Do you speak to a consultant (expertise in the field) before investing in the financial market?

……..
……
- How important is a firm's financial statement in terms of its effect on an investor's decision-making?

……..
……
- How does the past performance of the firm's stock affect your decision?

……..
……..
- Do you usually rely on the investment decision of past stock as an indicator for future returns?

……..

……

Objective 5: To identify the most significant factors that could influence investment decisions in the derivatives market.
- How do you feel when you make a loss in your investment?

……..
……
- Do you have sufficient information regarding your investment?

……
……
- Do you prefer a less risky investment or a risk-free investment?

……..
……..
- What motivated you to invest in the financial market?

…….....

……..

Objective 6: To develop a framework to serve as a possible guide to manage and minimise risk and maximise return?
- Do you believe in setting objectives that you want to achieve in your investments?

.....
……
- What are your plans to achieve your investment success in the future?

……...
……
- How do you make decisions to maximise your returns?

……

……

- Can you identify the challenges faced in making investment decisions and how they have been solved?

……

……

Thank you very much for your participation.

APPENDIX C: QUESTIONNAIRE FOR QUANTITATIVE STUDY: (BROKERS AND INDIVIDUAL INVESTORS)

SECTION A

Demographic Information

Please tick the appropriate alphabet.

Gender: (A) Male (B)Female

Age: (A) 18-30 (B) 31-40 (C) 41-50

(D) 51-60 (E) Above 60

Marital

(A) Single (B) Married (C) Divorced

Race

(A) African (B) White (C) Coloured
(D) Asian (E) Other

Nationality: (A) South African (B) Other

Educational Level

(A) High School and Lower (B) College / University
(C) Bachelor (D) Masters /PhD Degree

(E) Others

Years of your experience in the market?

(A) Less than 3yrs (B) 3 – 5yrs
(C) 6 – 10yrs (D) More than 10yrs

I invest in more than one securities market:

Yes No

Occupational Type?

(A) Government Employed (B) Private Organization Employed
(C) Self Employed (D) Unemployed

Annual Income

(A) R100,000 or Less (B) R100,000 – R200,000
(C) R201,000 – R300,000 (D) R301,000 – R400,000

(E) R401,000 – R500,000 (F) R500,000 above

Basic Information On Investors Behaviour (Questions)

1. Do you think psychological factors affect investment decisions?
   (a) Yes (b) No (c) Do not Know

2. Does demographic factor affect investment decision?
   (a) Yes (b) No (c) Do not know

3. How would you describe the effect of financial literacy on investment decisions?
   (a) No effect (b) Strong effect (c) Low effect (d) Do not Know

4. Do you think Accounting Information affect investment decision?
(a) Yes (b) No (c) Do not Know

5. How would you describe Investor personal attitude effect on investment decision
(a) Never (b) often (c) rarely (d) Sometimes (e) always

6. Do you think investor risk perception influence investment decision?
   (a) Yes (b) No (c) Slightly (d) Do not know

7. Which are the most influencing factors that affect investment decisions in the derivatives market?
   (a) Psychological factors (b) Demographic factors (c) Financial Literacy
   (d) Accounting Information (e) Personal Attitude (f) risk perception (g) other factors.

8. Which of the following factors are most important for an investment decision?

   (Rank 1 for the most important, 2 for the 2nd most important and so on.

   (a) Psychological factors (b) Demographic factors (c) Financial Literacy

   (d) Accounting Information (e) Personal Attitude (f) risk perception (g) other factors.

9. Which is your priority for Investment?

   (a) Profit Maximization (b) Risk minimization (c) None (d) Do not know

10. Which statement is true about you as an investor?

    (a) Willing to take substantial risks expecting to earn a substantial return

    (b) Willing to take average risk expecting to earn average returns.

    (c) Willing to take above average risk expecting to earn above-average returns

    (d) Not willing to take any risks.

11. How would you describe yourself as an investor?

SECTION B

QUESTIONNAIRE FOR QUANTITATIVE STUDY

For each of the following statements, please indicate the degree to which you agree or disagree with the following statement.

Objective 1: To explore small investors and investigate the psychological factors influencing their investment decision using factor analysis.	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	
1. I stick with a consistent investment strategy even if the stock market is volatile.						
2. I have a high level of self-confidence in my investment decision						
3. I feel satisfied with my investment decision in the last year (including selling, buying, and choosing stocks, and deciding the stock volume).						
4. I can handle difficult situations in the stock market						
5. I rely on my investment decision on the past returns of the stock as an indicator of future returns.						
Objective 2: To identify the behavioural and demographic factors that influence investors' decisions.	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	
Behavioural factor						
1. Investors have some level of tolerance for investment risks						
2. Investors are usually happy with the returns on their investment.						
3. After a prior loss, I become more risk-averse.						
4. Other investors' decisions of chosen stock types have an impact on my investment decisions.						
5. I am attracted to the affordable market price.						

Demographic factors						
1. Increase income level raises my interest in financial investment,						
2. My family structure will affect my investment decision						
3. My income level affect the maturity date of the investment I make.						
4. Investor's educational levels affect their investment decisions						
Objective 3: To determine the influence of financial literacy and accounting information on investment decisions.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1. I am knowledgeable about investing						
2. Investors' have sufficient information regarding investment tools.						
3. Investors are all financially literate when it comes to investment decision-making.						
4. I pay close attention to financial news.						
5. I rely on my previous experience in the market for the next investment						
Accounting Information						
1. I study the financial statement of the firm to make an investment decision						
2. The firms' condition as revealed by Financial statements matters to investors when investing.						
3. Past performance of the firm's stock affect y the decision-making of investors.						
4. I believe that my skill and knowledge of the derivative market can help me to outperform in the market						

Objective 4: To understand the influence of personal attitude and perception on individual investors ' investment decisions.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1. I regularly invest on my own.						
2. I tend to reduce risk through portfolio diversification						
3. When my investment does not produce the results that I hope for, I will consult with financial experts before taking any further action.						
4. I buy hot stocks and avoid stocks that perform poorly						
5. I would increase the sum of my stock market holdings if in the last month the aggregate trading volume in the stock market was higher than usual.						
Objective 5: To identify the most significant factors that could influence investment decisions in the derivatives market.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1. I forecast the change in stock prices in the future based on the recent stock prices.						
2. I believe that I am less likely than many others to suffer from bad events.						
3. Market information is important for my stock investment						
4. To set up my investment decision. I use financial models for investment.						
5. I utilise technical analysis while investing.						
Objective 6: To develop a framework to serve as a possible guide to manage risk and maximise return.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1. Investors speaks to a consultant before investing in the financial market.						

2. Investors always set objectives which they want to achieve in their investments.						
3. Investors have plans to make their investment a successful one						
4. Wealth maximisation is a goal for all investors when making decisions.						
5. All investors always want to improve their financial status rapidly.						

Thank you very much for your participation.

APPENDIX D: LETTER OF REQUEST TO JOHANNESBURG STOCK EXCHANGE

Johannesburg Stock Exchange Limited (JSE)
One Exchange Square, Gwen lane,
Sandton 2126
Santon, Johannesbur
7th June 2019

The Behaviour of Small Investors in the Derivatives Market of the Johannesburg Stock Exchange (JSE)

Letter of Request to Johannesburg Stock Exchange (JSE)

My name is Bosede Olatomi Ige, I am a PhD. Student from Durban University of Technology. (DUT)

My research topic is The Behaviour of Small Investors in the Derivatives Market of the Johannesburg Stock Exchange (JSE)

This study is meant to identifying some factor that are influencing the behaviour of small investors in investment decision-making. It will investigate further on investment and how to manage market risks to maximise returns.

This study involves the following people; the JSE Officials, Individual investors and market participants.

In view of the above I hereby seek your consent and opportunity to conduct my research in your institution in the collection of information through: interviews, and questionnaire distribution that will assist to gather information for this study. However, your cooperation in this direction would be greatly appreciated.

Thank you for considering my application

Yours Faithfully
Bosede Ige
Email: tomi4real2001@yahoo.com Tel: 0786778027
Doctoral Student
Durban University of Technology.
Supervisor
Dr Rufus Adebayo
Tel: 0313736422 / 0742007979
Email: rufusa@dut.ac.za

25th April 2019
Johannesburg Stock Exchange Limited (JSE)
One Exchange Square, Gwen Lane.
Sandown 2196
Sandton. Johannesburg.

Request for Permission to Conduct Research.

Dear Sir/Madam,

My name is Bosede Olatomi Ige, a Doctorate student at Durban University of Technology. My Doctorate Thesis focuses on the Investigation of the Behaviour of Small investors in the Derivatives Market.

I hereby seek your consent to conduct my research by sharing a questionnaire to collect opinion and view on factors that has a greatest influence on individual investor on investment decision-making. The focus group will be the JSE Officials, Individual Investors and market participants.

The research will benefit the JSE immensely and the finding of this research will assist the company on how to manage the investors and their investment to maximise returns.

Please, I would like to have a contact of who I will be contacting with to give my questionnaire to and also a letter of Consent from your office for me to conduct my research sir/ma.

If you require any further information. Please do not hesitate to contact me OR my Supervisor.

Cell No: 0786778027
Email: tomi4real2001@yahoo.com
Supervisor
Dr. Rufus Adebayo
Tel: 0313736422 / 0742007979
Email : rufusa@dut.ac.za

Thank you for your time and consideration in this matter.

Yours Sincerely

Bosede O. Ige
Doctorate Student: Entrepreneurial and Management Studies
Durban University of Technology

APPENDIX E: RESPONSE FROM JOHANNESBURG STOCK EXCHANGE

Letter of Request CRM:00930066946
Yahoo/Inbox

MDSupport <mdsupport@jse.co.za>

To:'tomi4real2001@yahoo.com'

Mon, Apr 29, 2019 at 3:50 PM

Hi Bosede,

Thank you for your email.
Please be advised that you would only need you permission if you were to request data from the JSE for your studies and not to conduct a questionnaire. Otherwise, you can just send us the questionnaire and will decide who are the best people here to answer it.

Kind Regards,

Mesansha Pillay
Sales Support Administrator
Information Services / Market Data

T +2711 520 7566

E MesanshaP@JSE.co.za