Factors affecting the adoption of online share trading in South Africa

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KEYWORDS

Online share trading, consumer technology adoption, retail investing, explanatory sequential mixed methods, UTAUT2, OST

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4IR	Fourth Industrial Revolution
AMOS	SPSS AMOS 27
AVE	Average Variance Extracted
BFL	Basic Financial Literacy
BI	Behavioural Intention
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Cost Reduction
CV	Control Variables
df	Degrees of freedom
DIY	Do-It-Yourself
DOI	Diffusion of Innovation Theory
DV	Dependent Variable
EC	Economic Constructs
EE	Effort Expectancy
ER	Economic Risk
FC	Facilitating Conditions
FMA	Financial Markets Act, No 19 of 2012
FOMO	Fear of Missing Out
FR	Functional Risk

IFI Incremental Fit Index

IOSCO International Organisation of Securities Commissions

IQ Intelligence Quotient

IV Independent Variable

JSE Johannesburg Stock Exchange

MD Managing Director

MSP Multi-Sided Platform

MSV Maximum Shared Variance

MV Moderating Variables

OST Online Share Trading

OTC Over the Counter

PB Perceived Benefits

PBC Perceived Behavioural Control

PCLOSE p of Close Fit

PE Performance Expectancy

PEU Perceived Ease of Use

PIA Perceived Information Asymmetry

PISO Perception of Shareholding Amongst the Social Circles

PR Perceived Risk

PRU Perceived Regulatory Uncertainty

PSI Perceived Service Intangibility

PTU Perceived Technology Uncertainty

PU Perceived Usefulness

RA Relative Advantage

RMSEA Root Mean Square Error of Approximation

RP Risk Perceptions

SCT Social Cognitive Theory

SEA Securities Exchange Act of 1934

SEC The United States of America Securities and Exchange Commission

SEM Structural Equation Modelling

SI Social Influence

SMP Stock Market Participation

SN Subjective Norms

SR Security Risk

SRO Self-Regulatory Organisations

TAM Technology Acceptance Model

TLI Tucker Lewis Index

TPB Theory of Planned Behaviour

TRA Theory of Reasoned Action

TS Time Saving

UTAUT Unified Theory of Acceptance and Use of Technology

UTAUT2 Extended Unified Theory of Acceptance and Use of Technology

WHO World Health Organization

X^2 Chi-Square Test

X^2/df Relative Chi-Square Test

CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

This research study aims to explore the adoption of online share trading in South Africa. Online share trading is a function of stock market participation, through a technology-based platform. The platform can be offered by traditional stockbrokers or by financial technology-based service providers.

1.2 Context of the study

Stock exchanges are one of the avenues for individuals to grow wealth by moving present value to the future when they invest (Harris, 2003, p. 160). Notwithstanding the strong case for the stock market, participation by retail or individual investors is considerably low in absolute terms (Guiso & Jappelli, 2005; Guiso & Sodini, 2013). However, recent reports in the media disclosed that EasyEquities, a financial technology (FinTech) retail trading platform, opened 2,000 accounts per day (Daily Maverick, 2021). At the time, EasyEquities' total customer base was 850,000. The phenomenon observed at EasyEquities is not unique. Robinhood, a commission-free mobile-based investing application, reported onboarding three million customers in the first quarter of 2020 (Eaton et al., 2021). Robinhood successfully used a combination of platform growth strategies to grow its customer base in 2020, with more than 80% of new customers coming through their referral program (Papke, 2021; Robinhood, 2021). The proliferation of mobile technology has seen a corresponding growth in the adoption of online share trading (OST). Recently, retail investors have pressured institutional investors in ways never seen before (Chohan, 2021). Retail trading platforms like EasyEquities and Robinhood offer clients the ability to trade or invest on electronic stock exchanges at an unprecedented rate.

Historically, high barriers to entry limited stock market access to professionals, money managers, and high net worth individuals (Kador, 2002). Barriers to entry were high for the average retail investor because full-service stockbrokers

designed their service offering to serve high value, low volume clients. The advent of discount stockbroking introduced a new product and service offering for retail investors (Blum & Lewellen, 1983; Kador, 2002). Retail investors were able to open a stockbroking account without minimum investable capital. Discount stockbrokers also charged low brokerage or commission fees in comparison to full-service brokers (Blum & Lewellen, 1983). The discount stockbroking business model matured due to the broader adoption of internet services (Kador, 2002). Internet adoption has increased due to technological advances and reduced costs (GSMA, 2021; World Bank Group, 2019).

The last decade also saw a growth in the type and quality of tools and services available to internet users interested in OST. Retail investors now have access to live market data and quality research previously only available to professional money managers. The growth in the fourth industrial revolution (4IR) technologies and relative ease of access means retail investors can develop trading and investment strategies previously thought to be complex or expensive, helping to level the playing field with professionals (Chan, 2013). The convergence of tools (decision making), availability of information, advancement in technology, low costs of trading, and rising stock markets (JSE All Share Index and DOW Jones Industrial Index hit their all-time high in 2020) has led to the current observable interest in OST (Eaton et al., 2021; Intellidex, 2020; Lee, 2009b). Moreover, empirical evidence supports investing in the stock market because it is highly beneficial for investors (Fernández-López et al., 2018). However, in absolute terms, the adoption and usage of OST remains low, which is perplexing (Guiso & Sodini, 2013). In cases where investors do adopt OST, adoption does not always translate to usage. Difficultly related to the use of technology or general user reluctance is part of the reasons noted in the literature (Galan et al., 2013). EasyEquities experienced such difficulty, where investors failed to either use or fund the accounts after opening them (Daily Maverick, 2021).

This research will examine factors affecting the adoption of OST in South Africa.

1.3 Research problem

Historically, South Africans could only trade on the JSE (Johannesburg Stock Exchange) through a full-service stockbroker registered with the exchange. However, full-service stockbrokers' requirements limited the number and type of clients who could access the market due to high brokerage costs and minimum investable capital (PSG, 2021). With the end of floor trading at the JSE on June 7th, 1996, and the subsequent adoption of electronic trading, stockbrokers in South Africa have had little respite from advances in technology (Intellidex, 2020). The use of internet-based platforms has evolved from a tool to service existing clients with basic needs - like access to the latest portfolio valuation and balances, statements and transaction history, latest company announcement, and live market data - to a channel used to deliver highly developed and differentiated services and products in the extremely competitive marketplace (Huang et al., 2005; Loh & Yee-Shyuan, 1998).

Annual SA's TOP Stockbroker survey highlights the changing landscape in the South African retail stockbroking industry. The sector has experienced a boom in the volume and variety of services and products (Intellidex, 2020). Many of the service providers are OST platforms or FinTech based.

Scholars have studied factors affecting the adoption of OST using different theoretical foundations - Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), Diffusion of Innovation Theory (DOI), Social Cognitive Theory (SCT) and Unified Theory of Acceptance and Use of Technology (UTAUT) - (Abroud et al., 2015; Khan et al., 2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013). However, most studies based their research on a combination of constructs from established technology adoption models. While this body of knowledge is robust, it lacks in several areas which this study seeks to address.

Firstly, literature is limited in the adoption and usage of OST in South Africa. Existing studies focus on OST purely as a technology adoption from a consumer perspective (Abroud et al., 2015; Khan et al., 2020; Lee, 2009; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013). Other Scholars focused on stock market participation (SMP) as an economic or behavioural finance problem from a consumer point of view, with limited integration or recognition of the role of technology or other stakeholders (Akhtar et al., 2018; Christiansen et al., 2008; Chu et al., 2020; Cole et al., 2012; Guiso & Jappelli, 2005; Hong et al., 2004; Sivaramakrishnan et al., 2017).

Secondly, the input from other stakeholders such as stockbrokers, regulators, and stock exchanges with a wealth of knowledge and experience related to factors influencing consumer adoption, is not considered. Unlike other financial services, OST does not form part of the essential services required for individuals to conduct their daily lives. Instead, its function lies in the convergence of four factors: technology, economic means, financial literacy, and financial markets.

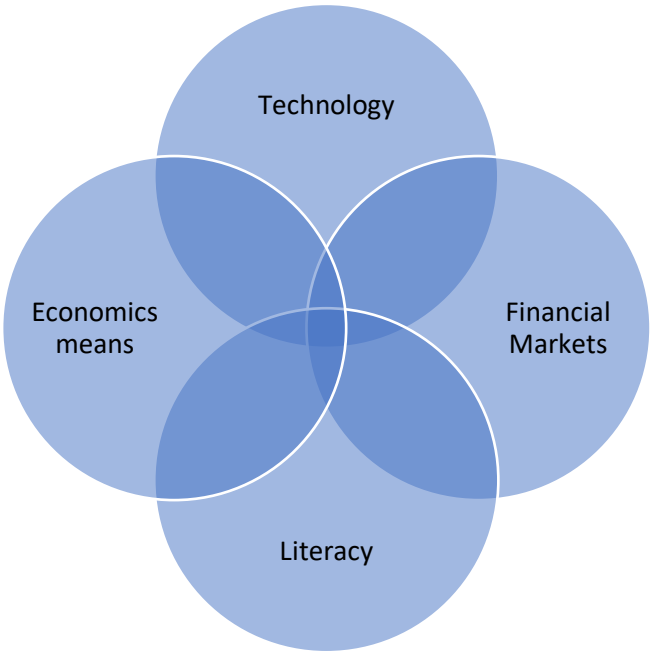

Figure 1–1 OST convergence

(Abroud et al., 2015; Akhtar et al., 2018; Christiansen et al., 2008; Chu et al., 2020; Cole et al., 2012; Guiso & Jappelli, 2005; Hong et al., 2004; Khan et al.,

2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Sivaramakrishnan et al., 2017; Tai & Ku, 2013).

This study will examine how the interaction between these factors influences the adoption of OST and SMP from multiple perspectives.

- Stock exchanges and stockbrokers operate at the forefront of OST and SMP. They have a vested economic interest in driving higher adoption and usage of their services. They are uniquely positioned to provide input on actual observed behaviours and factors influencing consumer behaviours. Stockbrokers, who offer the last mile connectivity to customers with the stock exchange, tend to carry bulk costs associated with client acquisition, servicing, and maintenance. A multi-dimensional study will help them develop tools and strategies to take advantage of market opportunities.
- The convergence between technology, economics and behavioural finance requires a different approach from traditional approaches, which treated these areas as discrete regarding OST and SMP. Nonparticipation in share investing has a high opportunity cost. This challenge cannot be addressed in isolation due to the proliferation of technology into all aspects of society. Examining OST and SMP as a function of technology and economics provides a better opportunity for yielding insights relevant to the current industrial revolution.

For this study, a share (used interchangeably with stock) means all products traded on a regulated exchange, including but not limited to shares, bonds, derivatives and commodities (Harris, 2003). The terms stock market and the stock exchange will be used interchangeably throughout the study.

1.4 Research objectives

To better understand multi-dimensional factors affecting OST and SMP, the study will aim to address the following objectives:

1. To identify factors affecting SMP and adoption of OST from a consumer point of view.

2. To identify factors influencing SMP and adoption of OST from a market participant point of view (stockbrokers, market analysts and regulators).

1.5 Significance of the study

Fabozzi (2008) notes that every individual with surplus funds is potentially an investor. Investments can take many forms. Empirical evidence supports the idea that any investment portfolio, including allocating to the stock market, is beneficial to the investors (Fernández-López et al., 2018). Therefore, individuals need to invest in shares because there can be substantial opportunity costs for not investing (Fabozzi, 2008). The proliferation of the internet and subsequent migration and development of financial services to online platforms means it is essential for scholars, regulators, and service providers to have a well-rounded understanding of factors influencing the adoption and usage of OST due to the inherent benefits of SMP.

Utilising OST to invest surplus funds is an avenue that can cut the economic divide and contribute towards long term wealth creation.

The study will examine the interaction of various constructs from a technology perspective, economics perspective and behavioural finance perspective combined with input from market participants. Understanding how these constructs interact and influence each other will be helpful for the following stakeholders:

- Regulators and policymakers
  The study will help illuminate how regulators and policymakers can adjust the current regulatory framework to enable market participants to develop a set of interventions and products, with a broader appeal and relevance, to encourage SMP through OST platforms.
- Stock Exchanges
  The study will provide an understanding of the interaction of technology and SMP. This information will be helpful for stock exchanges in product development and market regulation, including stockbrokers.
- Stockbrokers

The study will help brokers to develop technology solutions and other complementary services to grow their client base.

- FinTech companies
  The study will provide FinTech companies with insights they can use to develop alternative products and services.
- Retail Investors
  The study will ultimately benefit retail investors because service providers will develop products and services informed by a greater understanding of the customer approach and attitude towards SMP through OST.

1.6 Delimitations of the study

The research study will focus on factors affecting the adoption and usage of OST and other FinTech solutions in South Africa. The study excludes the following financial services and products:

- Non-exchange traded products like collective investment schemes (unit trust),
- Over the counter (OTC) investment and trading products,
- Foreign Exchange,
- Cryptocurrencies.

The study will be limited to affluent people who have the means to invest. The study will not examine affordability and actual product knowledge. The study will rely on respondents self-reporting; actual use adoption and usage will not be verified. Lastly, the research study will be cross-sectional, based on data taken at a point in time.

1.7 Definition of terms

Brokers are agents engaging in the business of effecting transactions in shares on behalf of their clients (Congress, 2012; Harris, 2003).

A dealer purchases and offers shares on the stock exchange for their account as their primary business (Congress, 2012).

Online Share Trading is an online platform to enable a retail customer to access and manage account information, conduct research, access market and company information, utilise online tools, and invest in a large selection of shares traded on a regulated electronic stock exchange (IOSCO, 2017; Khan et al., 2020).

Financial Technologies (Fintech) describes various ground-breaking business models and developing technologies that can transform the financial services industry (IOSCO, 2017).

1.8 Assumptions

The study makes the following assumptions:

- Respondents have an excellent comprehension of English, all instruments used in the research study will be in English,
- Respondents will answer all survey questions honestly,
- Respondents have a basic understanding and usage of internet technologies,
- Respondents have a basic knowledge or familiarity with financial markets terminology.

1.9 Chapter Outline

Chapter 2 will provide a comprehensive literature review of key themes for the OST value chain. The chapter is divided into five sections covering the following topics: stock exchanges; SMP; multi-sided market platform; technology adoption and conceptual research model. Chapter 3 will cover the research methodology and its related sub-topics. The study's findings are presented in Chapter 4. The results will be discussed in Chapter 5. Conclusions and recommendations will be presented in Chapter 6.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

The chapter consists of five sections. The first section looks at the stock exchanges and the evolution of electronic markets as the foundation layer of the share trading value chain. The second section looks at stock market participation (SMP). The third section looks at the multi-sided market platforms in the setting of the stock exchange and online share trading (OST). The fourth section reviews the technology adoption models in the OST context. The fifth section presents the proposed conceptual research model. Due to the limited availability of scholarly journals on the evolution of the stock market in South Africa and South African market regulation that tends to follow its peers in developed markets, a significant portion of the review is based on internationally published literature examining other markets. Figure 2–1 below depicts a conceptual outline of the topics to be discussed in the literature review.

Figure 2–1 Literature review conceptual outline

2.2 Background discussion

OST is an online platform to enable a retail customer to access and manage account information, conduct research, access market and company information, utilise online tools, and invest in a large selection of shares traded on a regulated electronic stock exchange (IOSCO, 2017; Khan et al., 2020). OST helps speed up share trading and lowers costs for brokers and investors, while at the same time enhancing their trading volumes (Khan et al., 2020). The adoption of OST has increased in the last decade but remains low in absolute terms, and adoption

does not always translate to usage (Eaton et al., 2021; Guiso & Sodini, 2013; Intellidex, 2020; Lee, 2009b). OST is part of the share trading value chain with a stock exchange at the centre. This study will examine various pertinent components of the OST value chain, starting with stock exchanges.

2.3 Stock Exchanges

Stock exchanges in various forms have been an integral part of ancient civilisations' societies (Bradley, 2002; Sobel, 2000). An active market resembling the present-day market structure first emerged in the Netherlands in the 17th century (Sobel, 2000). Brokers pounded the streets of trading districts, buying and selling shares. Stock exchanges have since developed from their humble beginnings to complex and technological institutions operating today. According to the Financial Markets Act (FMA), an exchange is an infrastructure provider that brings buyers and sellers together for matching bids and offers for securities (RSA Parliament, 2012).

Similarly, the Securities Exchange Act (SEA) defines an exchange as an organisation that organises and maintains a marketplace for bringing buyers and sellers of securities together (Congress, 2012). Various jurisdictions offer a variation of what constitutes a stock exchange. Market organisation, information distribution, market regulation, standards-setting, and business operations are the significant functions of a stock exchange (Fleckner, 2005).

Stock exchanges serve their countries and the public in several ways. Firstly, they bring together the issuers (i.e., companies and entrepreneurs) who need capital and investors who supply it (Fleckner, 2005; Philips et al., 2014). Secondly, they enable investors to decrease their risk by distributing their investments over a portfolio of shares listed on the exchange (Fleckner, 2005; Philips et al., 2014). Furthermore, they ensure that investments are sufficiently liquid to trade in without significant fluctuations in valuations. This is done by attracting a wide array of brokers and traders who, in turn, serve a heterogonous group of clients with different needs (Fleckner, 2005; Philips et al., 2014).

2.3.1 *Market Organisers*

The essential purpose of a stock exchange is to create and operate a marketplace where traders and brokers gather to trade shares (Fleckner, 2005; Harris, 2003). The market can be physical or electronic, where traders and brokers can easily interact (Harris, 2003). Stock exchanges act as intermediaries amongst intermediaries by bringing together sellers and buyers, and knowledgeable and uninformed market participants (Fleckner, 2005; Philips et al., 2014).

2.3.2 *Market regulators & standards setters*

Stock exchanges are not ordinary financial market participants because they are regulators while simultaneously being regulated entities (Fleckner, 2005). They supervise the market they organise as regulators, and are governed by a body established to oversee the functioning of a broader financial market in the economy as a regulated entity (Fleckner, 2005). Stock exchanges in many jurisdictions operate under the self-regulatory organisations (SRO) framework (Bradley, 2002; IOSCO, 2000). According to IOSCO (2000), the authority to define and administer standards governing bodies subject to the SRO's authority and adjudicate over disputes, is included in self-regulation. The authority is usually acquired through legislative delegation of power to a non-governmental organisation. Under the SRO framework, stock exchanges developed listing requirements, membership criteria, and market conduct rules (Bradley, 2002; IOSCO, 2000). Brokers, traders, and the companies whose shares are traded, are subject to rules and regulations enacted by the stock exchanges (Fleckner, 2005; IOSCO, 2000). The self-regulation approach has been demonstrated to be efficient and effective in that it offers better flexibility to adapt to the regulatory environment in line with industry developments (IOSCO, 2000; Keaveny, 2004).

2.3.3 *Brokers and traders*

Stock exchanges generally allow only their members to access the business directly for trading; non-members - retail clients, hedge funds, money managers

and other investors - must engage members to trade on their behalf (Harris, 2003). The crucial reason why stock exchanges exclude non-members from trading is due to risk management services - involving clearing and settlement operations - and the requirement to regulate members overall activities (Banner, 1998; Harris, 2003). For most stock exchanges, members are either brokers or dealers. Brokers are agents engaging in the business of effecting transactions in shares on behalf of their clients (Congress, 2012; Harris, 2003). Dealers are persons who purchase and offer shares for their own account (Congress, 2012).

In contrast to dealers, brokers trade on behalf of their clients' orders and get paid commissions for their services (Harris, 2003). Many brokers also provide additional services like financial advice, research, and market and investment information which often influence the trading decisions of their clients (Harris, 2003). Brokers fall into broad categories: retail; discount; full-service; and institutional (Harris, 2003). OST is a by-product of retail brokers, discount brokers and full-service brokers facilitated by growth in internet connectivity.

2.3.4 *Distributors of information*

A distinguishing feature of any well-functioning market is the ability of market participants to find the best price when they want to trade. This process is known as price discovery (Fleckner, 2005; Hasbrouck, 1995). During price discovery and other phases of market operations, stock exchanges generate crucial information (orders, quotes, trades, indices, bond yields, volatility levels and others) which they distribute to the market participants (CME Group, 2021; Fleckner, 2005). Stock exchange generated information takes two primary forms (post-trade and pre-trade), and its knowledge is important from two viewpoints. The post-trade information consists of the executed trades, including volume, price, type and timestamp (Alan & Schwartz, 2013; Fleckner, 2005). Knowledge of that type has a significant economic value to many stakeholders, including those who generate market reports, analyse stocks, recommend particular securities for buy and sell, market makers for pricing derivatives, and risk managers (Alan & Schwartz, 2013; Fleckner, 2005). Pre-trade information refers to order quotations at which the market is prepared to either purchase "bid orders" or offer "ask orders" (Fleckner,

2005). To some degree, possession of quality and timely market information is vital for predicting future stock prices, making access to such information highly valued to traders (Fleckner, 2005; Stoll, 2003). Exchanges also generate secondary data for valuation as input to the post-trade or settlement cycle (CME Group, 2021).

2.3.5 *Deregulation and demutualisation*

Stock exchanges were traditionally organised as not-for-profit organisations, incorporated either under mutual or cooperative ownership structure (Fleckner, 2005). Thus, they were like an exclusive club; founded, owned, and managed by brokers and dealers with high entry requirements for new applicants, and a monopoly comparable to an old-fashioned gild (Aggarwal & Dahiya, 2006; Bradley, 2002; Fleckner, 2005). Under the mutual structure, the broker and dealers put on three hats in that firstly, they were the only, or primary customers of the stock exchange; secondly, they were proprietors of the stock exchange; and finally, they were often also the managers of the stock exchange (Fleckner, 2005). As the primary customers of the stock exchange, the not-for-profit structure meant the founding brokers and traders were not troubled with the profitability of the stock exchange, since they paid all the fees charged by the stock exchange (Fleckner, 2005). Brokers and traders, as owners, were not interested in technological developments that reduced operating costs because it did not translate to additional earnings but instead reduced trading fees (Aggarwal & Dahiya, 2006; Fleckner, 2005; Philips et al., 2014). Stock exchanges began to demutualise and list on their marketplaces in reaction to deregulation and competition (Aggarwal & Dahiya, 2006; Bradley, 2002; Christiansen & Koldertsova, 2009; Fleckner, 2005). Demutualisation refers to the change from not for profit and member-owned organisations into public companies required to return a profit (Keaveny, 2004). Stock exchanges needed to raise capital to invest in advanced technology to remain competitive (Bradley, 2002; Fleckner, 2005; Keaveny, 2004). Running modern stock exchanges with the latest technology requires considerable investments, which could not be funded under the mutual ownership structure (Christiansen & Koldertsova, 2009; Fleckner, 2005). As openly traded public companies, stock exchange members were no longer the

only owners; the focus of the stock exchanges changed from primarily serving the needs of members, to a for-profit company with external shareholders to please (Fleckner, 2005; Keaveny, 2004).

2.3.6 *The rise of electronic markets*

Historically, the trading floor was the core of a stock exchange where the brokers and traders congregated to negotiate trades (Fleckner, 2005). Advances in technology pushed stock exchanges to evolve their business structure and operations (Amihud et al., 1997; Philips et al., 2014). As a result, trading floors have become uninhabited and unfashionable; stock exchanges now exist mostly in cyberspace, directly accessible to everyone with an internet connection (Fleckner, 2005; Strader & Shaw, 1997). Like in numerous other industries, where people are gradually being substituted with machines, stock exchanges are now using automated systems to execute orders, to distribute information, for risk management, and to help manage regulatory compliance (Amihud et al., 1997; Fleckner, 2005; Harris, 2003; Philips et al., 2014). Stock exchanges offer their members technology for trading, information distribution, and dissemination and trade settlement which can happen within seconds (Fleckner, 2005). As a result, technological developments signify one of the leading factors behind competition among stock exchanges, enabling operators with modern technology to reduce operating costs and trading fees without incurring losses (Harris, 2003; Philips et al., 2014). Lower trading costs enable more frequent trades, and additional transactions result in vast economies of scale, leading to further costs cuts and, once again, to more business (Fleckner, 2005; McNamara, 2018; Philips et al., 2014).

2.3.7 *Rise of global multi-exchange organisation*

Stock exchanges are best positioned to benefit from economies of scale (Fleckner, 2005; Philips et al., 2014). After an exchange has established an electronic trading system and drafted the rules, their incremental costs are low, irrespective of the volume of trades executed at the stock exchange (Fleckner, 2005). Post the demutualisation phase, stock exchanges have increasingly

engaged in mergers and acquisitions (Hasan et al., 2012). Philips et al. (2014) note that while reasons for mergers and acquisitions are not always the same, the following factors are the most common in most of the transactions: cross-selling opportunities, opportunities to lower operating costs, geographical diversification, and improved profitability.

When stock exchanges merge, they can reduce their fixed expenses by using the same technology. Against this backdrop, several global multi-exchange groups emerged after exchanges were demutualised (Fleckner, 2005; Philips et al., 2014). Consolidation between stock exchanges is a visible illustration of how advanced technology can facilitate changes to market structure (Fleckner, 2005). Philips et al. (2014) additionally highlight that the benefit of post stock exchange mergers extends to issuers who can access a wider pool of capital at a lower cost, and for investors having access to a broader selection of instruments across multiple geographics to reduce their risk or diversify their portfolios at a lower cost. Globalisation and the need for stock exchanges to have a presence in foreign markets with other electronic platforms offering trading access, also played a pivotal role in the stock exchange consolidation (Philips et al., 2014).

2.4 Stock Market Participation

2.4.1 *Stock market participation puzzle*

SMP is an essential financial outcome for individuals because stock markets have empirically demonstrated as being the best place to invest surplus capital (Sivaramakrishnan et al., 2017). Notwithstanding the strong case for the stock market and the opportunity costs for not investing in them, economists, scholars, and market practitioners have been puzzled by the low participation in the stock market by retail or individual investors (Guiso & Jappelli, 2005). While the level of adoption will vary per country based on various factors, studies have demonstrated that SMP remains consistently low across geographies (Ali et al., 2012).

Several studies have examined factors and characteristics common amongst stockholders. Christiansen et al. (2008) examined the connection between education and SMP and found a high positive correlation between individuals with higher education and stock holding. This finding was supported by Cole et al. (2012). Markus and Alexander (2013) found a positive and causal effect between internet usage and SMP, supporting findings from Bogan (2008). Guiso and Jappelli (2005) found a positive connection between financial assets and education awareness, affecting SMP. Grinblatt et al. (2011) found a high correlation between intelligence quotient (IQ) and investing in shares controlling for wealth. Van Rooij et al. (2011) found financially knowledgeable people are highly prone to invest in shares. Hong et al. (2004) found a strong connection between social influence and investment in shares.

Despite the above, it is universally known that many people who possess the said characteristics still do not invest in shares, further compounding the problem (Ali et al., 2012; Guiso & Jappelli, 2005; Hong et al., 2004; Sivaramakrishnan et al., 2017)

2.4.2 *Intention to invest*

Other scholars have approached the stock market puzzle differently, examining factors affecting participation in the stock market. These studies' primary aim was to understand the interaction between various variables leading to individuals deciding to invest in the stock market. Understanding factors common amongst stockholders is insufficient to explain actual participation in the stock market or infer future intention to participate if certain conditions are met. Scholars examined the SMP puzzle by looking at various factors and theories. Sivaramakrishnan et al. (2017) adapted TPB to analyse how consumer financial literacy, risk avoidance, financial well-being, regulatory perception, social influence, and hassles of investing influence investors intention to invest in shares. Figure 2–2 shows results the from Sivaramakrishnan et al. (2017) with perception of shareholding amongst the social circles (PISO) created as a new factor to measure the perception of shareholding amongst the social circle of the subjects. The study proved intention to be the predictor to invest in shares. It also

found financial literacy to affect SMP, supporting findings from Van Rooij et al. (2011).

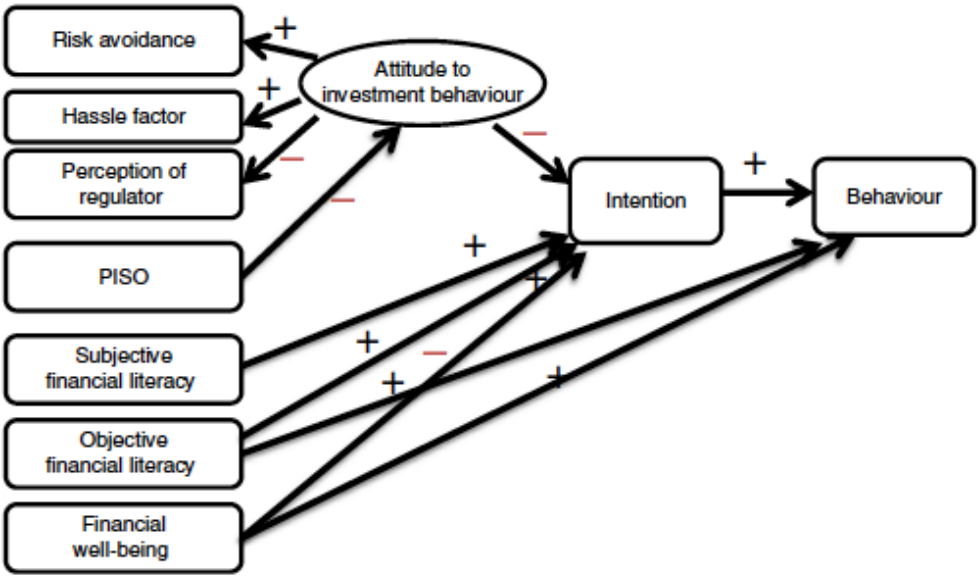

Figure 2–2 SMP Model: Research results

(Sivaramakrishnan et al., 2017, p. 833)

Akhtar et al. (2018) examined the link between financial sophistication, personality (extroversion, consciousness, agreeableness, and neuroticism) and SMP. Extroversion and openness to experience have a positive influence on investing in line with earlier studies. In contrast, consciousness, agreeableness, and neuroticism have a negative effect. Chu et al. (2020) found a connection between investing and Chinese stock market dynamics (using various stock market indices). Georgarakos and Pasini (2011) found trust and sociability to positively impact SMP. They also found trust to be higher in advice on investment matters when given by financial institutions. There is a lack of extensive research for SMP in emerging or developing countries. McDonald and Sandada (2018) found trust, awareness, transaction costs, perceptions, cognitive skills, and internet access to be key factors influencing SMP in Zimbabwe. Mauricas et al. (2017) found that inadequate financial knowledge, low-risk acceptance, and inadequate trust in financial institutions explained low SMP in Lithuania. They further found prohibitive fees, high return prospects, or market immaturity to not

significantly affect SMP in Lithuania. Banyen and Nkuah (2015) examined behavioural influences on individual decisions to invest in the shares in Ghana; they found that share market awareness, trust, education, and herding behaviour were positive influencers. Ali et al. (2012) found low awareness, financial literacy, and social interaction as critical factors that affected SMP in Pakistan. They also found overall high costs as the main barrier.

2.5 Stock Exchange as Multi-sided Market Platform

2.5.1 *Introduction to Multisided Market Platform*

The platform business model has emerged in recent literature as underlying many of today's big and fast-growing businesses (Parker et al., 2016). However, this model is not a new phenomenon, having existed long before the current interest (Eisenmann et al., 2006). Building on the foundations from other scholars, Parker and Van Alstyne (2014) characterised a platform business as an interconnection of policies and infrastructure that enable connections between buyers and sellers (network users) and are usually subject to network effects. Put differently, Rochet and Tirole (2006) defined a two-sided market platform as one in which the volume of transactions between buyers and sellers is contingent on the structure and the platform fees. Hagiu and Wright (2015) argued that multi-sided platforms (MSP), at their foundation level, allow direct communication between two or more parties, each linked to the platform. By their very nature, stock exchanges are fundamentally MSPs through which disparate groups (traders, brokers, institutional investors, retail investors, speculators, and others) come together electronically to transact (McNamara, 2018). Stock exchanges act as intermediaries among other intermediaries (brokers and traders) to assemble the trading orders and execute them (Philips et al., 2014).

2.5.2 *Elements of multi-sided market platform*

Building on literature, Armstrong and Lee (2021) identified elements critical for multi-sided market platforms: frictionless transaction; network effects; externalised assets; and software realisation.

a. *Frictionless transaction*

MSPs often lower transaction and search costs by certifying and monitoring participants on the platform (Hagiu, 2015; McNamara, 2018). Stock exchanges only allow admitted members (brokers and traders) to access the marketplace directly (Harris, 2003). Before accepting members to a stock exchange, they need to meet the minimum requirements (skills, qualification, capital infrastructure and others) defined by the stock exchange and external regulator. Reduction in transaction costs can be achieved through search, transaction, or post-transaction costs (Armstrong & Lee, 2021). Because trading is a search problem, buyers and sellers search the market for a counterparty they can trade with at a desired price and quantity; the stock exchange offers the most cost-effective mechanism to achieve this outcome (Harris, 2003).

b. *Network effects*

Network effects are reenforcing feedback loops that can increase exponentially with the increasing users and complements adoption of the platform (Gawer & Cusumano, 2014; Katz & Shapiro, 1985).

Stock exchanges experience positive network effects on two levels. Firstly, traders are attracted to venues with the highest level of liquidity because it increases the chances of finding a counter partner to their trade. The resulting trades increase the volume traded, making the stock exchange more attractive to other traders (McNamara, 2018).

The second network effect on stock exchanges results from technological advances allowing newer technology operators to reduce costs and fees without affecting profitability (Harris, 2003; Philips et al., 2014). Declining trading costs results in an increase in trades. More trades lead to vast economies of scale, leading to further costs cuts and, once again, to more trades (Fleckner, 2005; McNamara, 2018; Philips et al., 2014). The increase in trades will, in turn, attract more traders due to the increasing liquidity on the market.

c. *Externalised assets*

Like other platform businesses, stock exchanges tend to externalise various costs associated with trading to users (Haberly et al., 2019). Brokers and traders incur the bulk of the costs of acquiring, servicing, and maintaining clients. The innovation behind recent developments, like high-frequency trading, directly led to increased trading activity on stock exchanges funded by brokers and their clients (Gomber & Haferkorn, 2015). Entrepreneurs seeking capital can secure funding from external investors through the exchange at minimal costs and maximum benefit. The exchange will benefit from trading in the secondary market for each company raising capital on the stock exchange. A share in the same company can be traded endlessly, with the exchange charging a fee for each transaction at minimal or no incremental costs (Harris, 2003).

Investment in OST infrastructure and related activities is another example of externalised assets for stock exchanges that positively impact the exchange's profitability. Due to regulatory requirements, stock exchanges' asset externalisation while fully digital are constrained, thus limiting the pool of potential customers. Table 2–**1** below outlines the framework for platform assets externalisation.

Table 2–1 Constraints on external assets

Nature of Assets	Fully Digital	Regulatory, Licensed	User-generated content
	Physical	Capital, Equipment, Scarce materials and metals	Consumer assets, High-value commercial assets
		Constrained	Abundant
	Level of abundance		

(Armstrong & Lee, 2021, p. 475)

d. ***Software realisation***

Modern stock exchanges operate computer systems that automatically match orders (Fleckner, 2005; Harris, 2003; Philips et al., 2014). Stock exchanges offer their members technology for trading, information distribution and dissemination, and trade settlement which can happen within seconds. As a result, technological developments characterise one of the leading forces behind competition among stock exchanges (Harris, 2003, p. 37; Philips et al., 2014).

2.5.3 *Platform growth strategies*

Achieving sustainable network effect critical mass continues to be a significant challenge for platform businesses (Parker & Van Alstyne, 2014). While many stock exchanges operate profitably, servicing their existing clients, many markets still experience low SMP as a percentage of the population (Ali et al., 2012).

Platform businesses can use eight growth strategies: follow the rabbi; piggyback; seeding; marquee; single-side; producer-evangelism; big bang; and micro-market (Parker & Van Alstyne, 2014; Parker et al., 2016).

2.6 Online Share Trading Adoption

2.6.1 *Online share trading*

OST is a consumer tool and service used to provide retail consumers access and other auxiliary services to the stock market for investment and trading purposes (Huang et al., 2005; Loh & Yee-Shyuan, 1998). The use of the internet has evolved from a tool to service existing clients with basic needs like services (like access to the latest portfolio valuation and balances, statements and transaction history, latest company announcements, and live market data), to a channel used to deliver highly developed and differentiated services and products in the fiercely competitive marketplace (Huang et al., 2005; Loh & Yee-Shyuan, 1998). Customers can access real-time market information, submit trading orders (without human brokers), research companies, and view account balances and statements (Tai & Ku, 2013).

2.6.2 *Adoption introduction*

The adoption of OST is dependent on various factors. Numerous scholars have studied factors affecting the adoption of OST (Abroud et al., 2015; Khan et al., 2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013). Table 2–2 below outlines the summary of the studies. Several scholars used a variety of theoretical frameworks. TAM was the general theoretical framework utilised for many studies, where it was adapted and combined with the TPB. DOI, SCT and UTAUT were used as theoretical frameworks for other studies.

Table 2–2 Summary of OST Studies

Theoretical Framework	**Constructs**	**Study**					
		(Khan et al., 2020)	(Singh & Malhotra, 2016)	(Abroud, Choong, Muthaiyah, & Fie, 2015)	(Tai & Ku, 2013)	(Malek, 2012)	(Lee, 2009)
TAM	Perceived Ease of Use (PEU)		X	X		X	X
	Perceived Usefulness (PU)		X	X		X	X
TPB	Attitude		X				X
	Perceived Behavioural Control (PBC)		X				X
	Subjective Norms (SN)		X				X
DOI	Relative Advantage (RA)						
	Compatibility						
	Complexity					X	
	Trialability					X	
	Observability						
SCT	Perceived Technology Uncertainty (PTU)	X					
	Perceived Regulatory Uncertainty (PRU)	X					
	Perceived Service Intangibility (PSI)	X					
	Perceived Information Asymmetry (PIA)	X					
UTAUT	Performance Expectancy (PE)				X		
	Effort Expectancy (EE)				X		

Theoretical Framework	Constructs	Study					
		(Khan et al., 2020)	(Singh & Malhotra, 2016)	(Abroud, Choong, Muthaiyah, & Fie, 2015)	(Tai & Ku, 2013)	(Malek, 2012)	(Lee, 2009)
	Facilitating Conditions (FC)						
	Social Influence (SI)				X		
	Trust	X	X			X	X
	Awareness					X	
	Perceived Benefits (PB)	/	/				X
	Perceived Risk (PR)		X		X		X
	Security Risk (SR)				X		
	Economic Risk (ER)				X		
	Functional Risk (FR)				X		
	Intention		X				X
	Economic Constructs (EC)			X			
	Time Saving (TS)			X			
	Cost Reduction (CR)			X			

2.6.3 *Technology Acceptance Model*

TAM is a variation of the Theory of Reasoned Action (TRA) by Ajzen (1980) and was aimed at modelling individuals' acceptance of technology (Davis et al., 1989). TAM postulates that technology use is determined by behavioural intention (BI) to use it, which is influenced by individuals' attitudes regarding using the technology and the perceived usefulness (PU) of the technology. Attitudes and PU are also affected by perceived ease of use (PEU). PU reflecting an individual's belief in the use of the technology will enhance performance. PEU is an individual's belief that using the technology will be free of effort. The attractiveness of this model lies in that it is both precise and has a high-level projection power of technology use (Lee, 2009b).

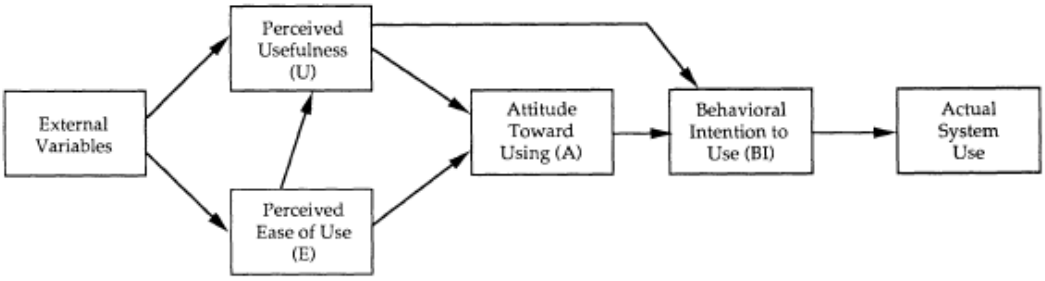

Figure 2–3 TAM.

(Davis et al., 1989, p. 985)

2.6.4 *Theory of Planned Behaviour*

According to TPB, BI is the immediate motivator for individuals to perform the behaviour, which is an outcome of combining attitude (A), social norms (SN) and PBC towards performing the behaviour. BI is a degree of the strength of an individual's readiness to exert energy while performing certain behaviours. Attitude towards a behaviour is an individual's general feelings, indicating their favourableness or unfavourableness to the behaviour. Attitude (favourable or unfavourable) influences the degree of the behaviour and beliefs concerning the likely result. SN is the perceived organisational or social pressure of an individual who plans to accomplish the intended behaviour. PBC is an individual's view of the ease or the effort in implementing the concerning behaviour, relating to the existence or absence of necessary control factors. Therefore, control beliefs concerning resources and opportunities are the fundamental elements of PBC and can be shown as the control beliefs in question (Ajzen, 1991).

The TPB has proven to be a reliable model in forecasting and explicating human behaviour across various technologies (Ajzen, 1991).

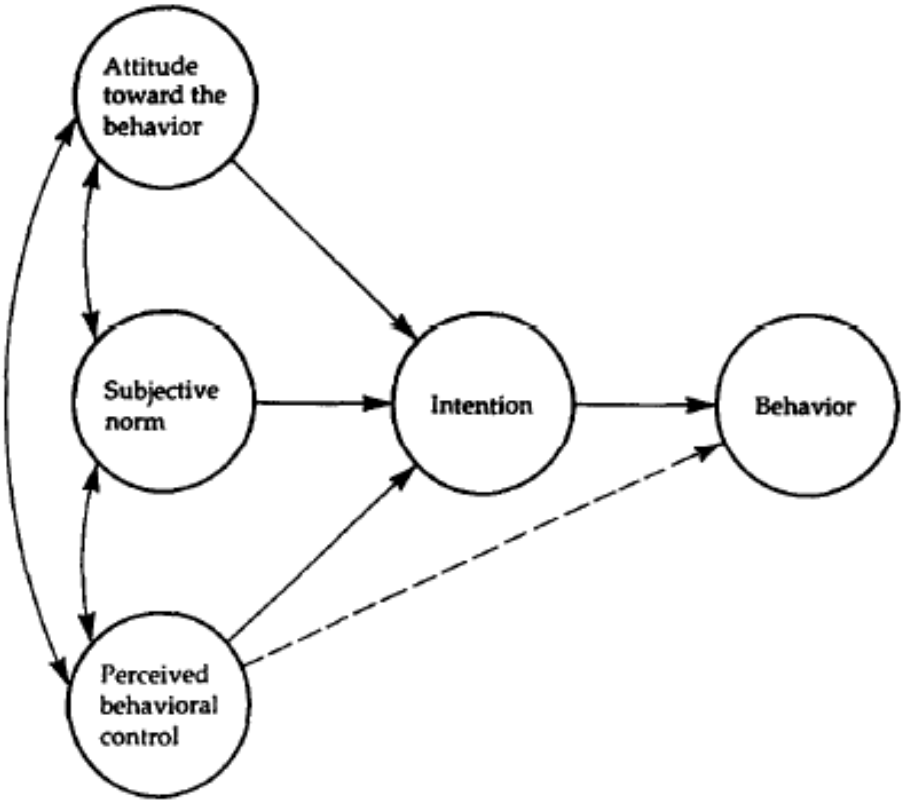

Figure 2–4 TPB.

(Ajzen, 1991, p. 182)

2.6.5 *Diffusion of Innovation Theory*

DOI was developed by Rogers (2003). Diffusion is how innovation is conveyed to members of a social system over time through specific routes. DOI has five characteristics that help explain an individual's perception towards innovation adoption. Relative advantage is the extent to which an innovation is thought to be superior to the idea it replaces. Compatibility is the extent to which a new idea is believed to be compatible with potential users' current values, past experiences, and needs. Complexity is the extent to which an idea is thought to be challenging to grasp and apply. Trialability is the extent to which an innovation can be tried out on a small scale. Observability is the extent to which an innovation's consequences are visible to others.

2.6.6 *Social Cognitive Theory*

SCT defines an individual's behaviour as an active connection between environmental (physical, social or virtual) and personal factors, cognition, and behaviour (Bandura, 1986, 1989). SCT's model of reciprocal causation, action, all factors, and events, operate as interacting determinants of the individual's behaviour (Bandura, 1989; Khan et al., 2020; Middleton et al., 2019). The primary emphasis of SCT is on individuals acquiring knowledge in response to incitements in their environment (Khan et al., 2020). People can gain understanding through involvement in a task or witnessing others in their social cluster (Middleton et al., 2019).

2.6.7 *The unified theory of acceptance and use of technology*

The UTAUT was designed to examine an individual's acceptance and use of technology (Venkatesh et al., 2003). UTAUT is grounded on four core determinants of intention and usage, and four key relationship moderators (Venkatesh et al., 2003). The core constructs affecting determinants are performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC). The UTAUT suggests that the four core constructs are determinants of BI and, eventually, behaviour, which is in turn moderated by gender, age, experience, and voluntariness of use (Venkatesh et al., 2003; Williams et al., 2015). UTAUT argues that by investigating the existence of constructs in a natural environment, scholars will be able to measure an individual's intent to use technology, making it possible to identify the critical motivators for acceptance in any given setting (Venkatesh et al., 2003; Williams et al., 2015). UTAUT was developed through a systematic and comprehensive examination and amalgamation of eight leading theories and models: TRA, TPB, TAM, SCT, DOI, a combined TPB/TAM, the Motivational Model, and the Model of PC Utilisation (Williams et al., 2015).

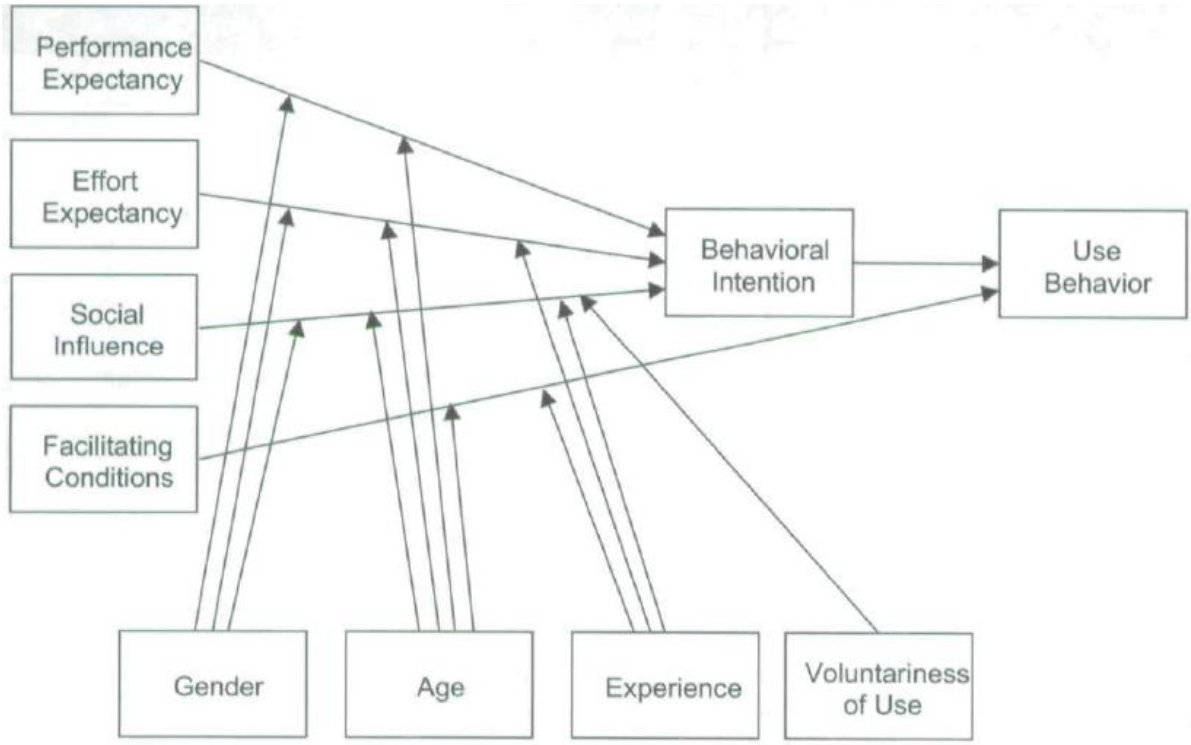

Figure 2–5 UTAUT.

(Venkatesh et al., 2003, p. 447)

2.6.8 *The extended unified theory of acceptance and use of technology*

UTAUT2 extends UTAUT to examine the acceptance and use of technology in a consumer setting (Venkatesh et al., 2012). UTAUT2 incorporates three extra constructs: hedonic motivation; price value; and habit, into UTAUT together with age, gender, and experience as moderating factors (Venkatesh et al., 2012).

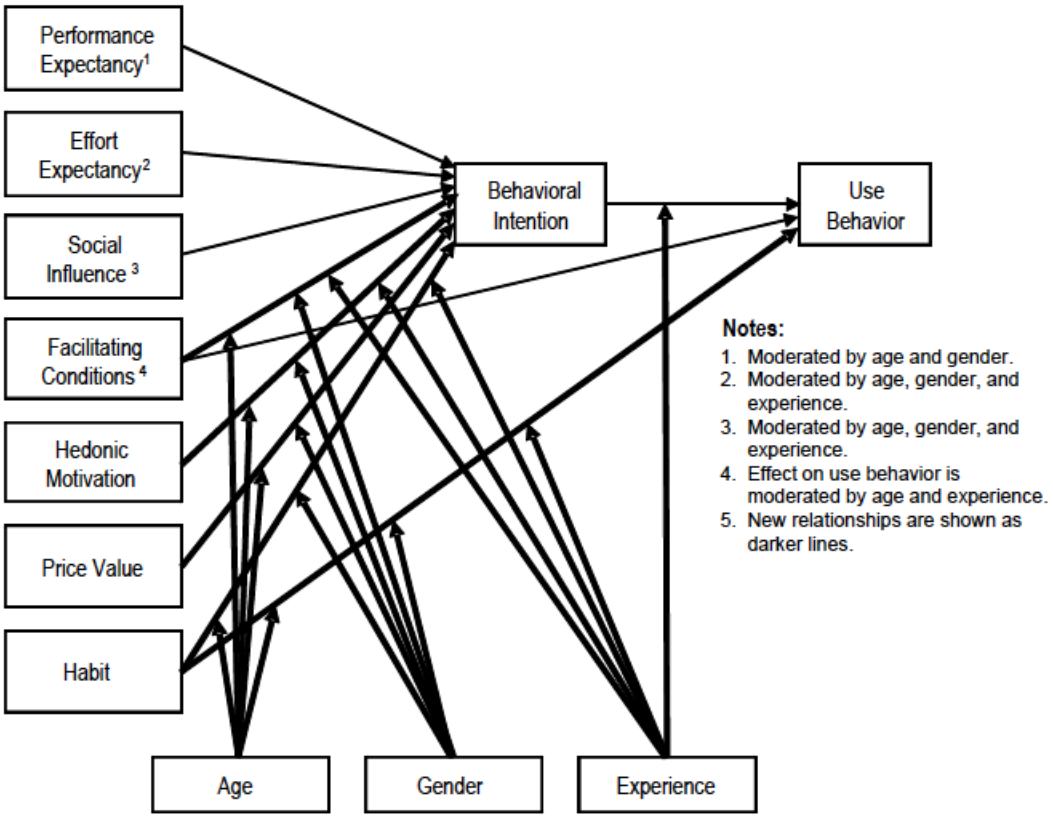

Figure 2–6 UTAUT2.

(Venkatesh et al., 2012)

2.6.9 *OST adoption*

OST adoption can be explained and predicted by integrating TAM and TPB with perceived benefits (PB) ,perceived risks (PR) and Trust (TR) (Lee, 2009b). Singh and Malhotra (2016) adapted the model from Lee (2009b) by adding ten demographic characteristics. Their results did not link homeownership, income, trading experience, occupation, and adoption. In contrast, age, gender, marital status, education, trade type, and trading regularity affected adoption. Singh and Malhotra (2016) results on the core constructs were consistent with Lee (2009b), except for perceived benefit and perceived risk which they found not to impact the adoption of OST. Malek (2012) found a positive relationship between the adapted DOI theory - which included TR, PU, PEU and Awareness – and the adoption of OST. Malek (2012) is consistent with Lee (2009b) on the function of TR, PU and PEU in overall adoption. Abroud et al. (2015) adapted TAM by

incorporating TR and EC. Their results were consistent with previous studies in the function of TR, PU, and PEU in adoption; they also found the economic means (EC) to positively impact the adoption of OST. Khan et al. (2020) highlight studies that capture the limitations and criticism of TPB and TAM, including it being too simple to investigate technology adoption. UTAUT aimed to address limitations and criticisms levelled against TPB and TAM amongst other models (Venkatesh et al., 2003). Tai and Ku (2013) utilised an adapted UTAUT (excluding FC) incorporated with PR to examine the adoption of OST. They found a positive influence between PE, EE, and SI, while PR was found to have an undesirable impact on the adoption of OST. Khan et al. (2020), using SCT adapted to include TR and PB, found significant positive effects on all core constructs, except for perceived service intangibility which had a negligible impact on the individuals' intentions to adopt.

2.7 Conceptual Model

Given the importance of investing in the stock market pertaining to the wealth accumulation of individuals and the pervasive nature of digital technologies, this study will combine key constructs emanating from literature to examine the adoption of OST from a consumer perspective. The study will further investigate the customer survey results by interviewing experts to help explain the results, and gain additional insights based on their accumulated experience and opinions. The study will use UTAUT2 as the primary theoretical model, as shown in Figure 2–7. UTAUT2 is the ideal framework to use for this study as it deals with technology adoption from a consumer perspective (Venkatesh et al., 2012). For this study, habit is excluded because the study subjects are not necessarily current users of OST, thus, this construct will be inappropriate. Based on previous studies examining the adoption of OST, TR has emerged as a critical influence in the adoption studies (Abroud et al., 2015; Khan et al., 2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016). Thus, this study will include TR as a critical predictor influencing the behavioural intention to adopt OST. This study will further add basic financial literacy (BFL) as a predictor influencing the behavioural intention based on the review of SMP (Sivaramakrishnan et al., 2017; Van Rooij

et al., 2011). BFL will be based on a measurement instrument from Van Rooij et al. (2011).

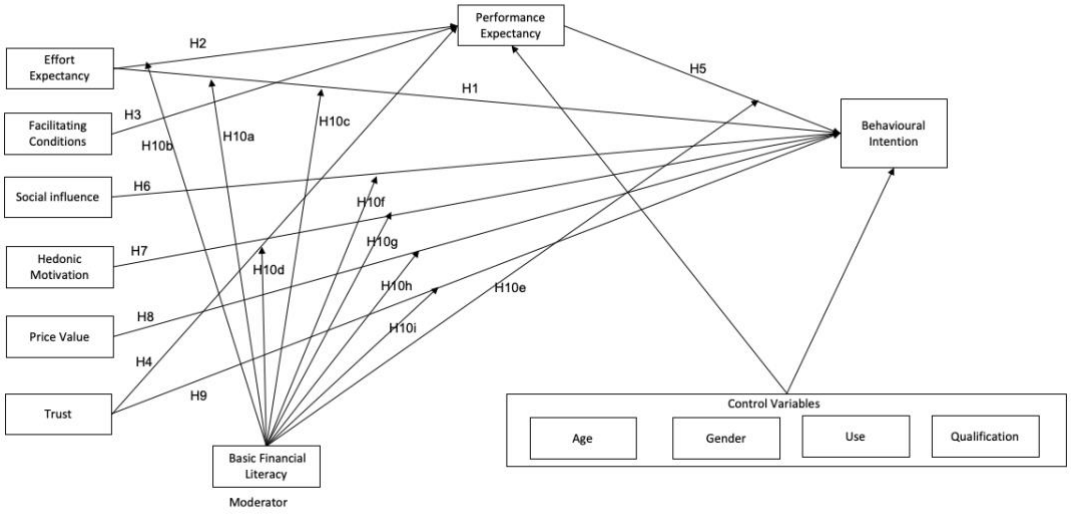

Figure 2–7 Proposed Research Model: OST

(Gefen et al., 2003; Van Rooij et al., 2011; Venkatesh et al., 2012)

2.7.1 *Effort Expectancy*

EE is the level of ease related with consumers' use of technology (Venkatesh et al., 2012). EE was found to be a predictor of behavioural intention to use a technology in previous studies (Venkatesh et al., 2012). OST requires technical knowledge and skill, thus EE could play a vital role in the consumers' intention to adopt OST (Singh & Malhotra, 2016). As a result, the following hypotheses are proposed in this study:

H1: EE will positively influence customers' BI to adopt OST.

H2: EE will positively influence customers' PE of OST.

2.7.2 *Facilitating Conditions*

FC refers to consumers' perceptions of the availability of resources and support to use a technology (Venkatesh et al., 2012). Usage of OST requires wide-

ranging resources and technical infrastructure (Liu et al., 2012). The existence and availability of resources, support and infrastructure could impact the behaviour towards OST and how it will perform towards servicing the customers' intentions. As a result, the following hypothesis is proposed in this study:

H3: FC will positively influence customers' PE of OST.

2.7.3 *Trust*

Trust is the belief that a trusted party will fulfil their obligations (Gefen et al., 2003). Trust has been shown to be important in online trading because they operate in a virtual world without physical branches where customers can interact with brokers (Lee, 2009b). As a result, the following hypotheses are proposed in this study:

H4: TR will positively influence customers' PE of OST.

H9: TR will positively influence customers' BI to adopt OST.

2.7.4 *Performance Expectancy*

PE is referred to as the degree to which employing a technology will benefit customers in executing specific activities (Venkatesh et al., 2012). In the context of OST, PE is conceptualised as the degree to which customers believe that OST will help them improve the trading performance (Tai & Ku, 2013). As a result, the following hypothesis is proposed in this study:

H5: PE will positively influence customers' BI adopt OST.

2.7.5 *Social Influence*

SI is the degree to which consumers feel that those important to them believe they should use a specific technology (Venkatesh et al., 2012). In the context of OST, SI is conceptualised as the degree to which customers believe their peers expect that they should be using OST (Tai & Ku, 2013). As a result, the following hypothesis is proposed in this study:

H6: SI will positively influence customers' BI to adopt OST.

2.7.6 *Hedonic Motivation*

HM is described as the enjoyment obtained from utilising a technology, and it is a key factor in consumer adoption and use of technology (Tamilmani et al., 2019). Venkatesh et al. (2012) included intrinsic utilities because it has been demonstrated in the literature that intrinsic utilities are important in technology adoption (Alalwan et al., 2017). As a result, the following hypothesis is proposed in this study:

H7: HM will positively influence customers' BI to adopt OST.

2.7.7 *Price Value*

PV is defined as the consumers' rational trade-off between the perceived benefits of the technology and the economic cost for using it (Venkatesh et al., 2012). High positive price value will influence customers to adopt a technology (Alalwan et al., 2017). As a result, the following hypothesis is proposed in this study:

H8: PV will positively influence customers' BI to adopt OST

2.7.8 *Basic Financial Literacy*

BFL is a metric for knowing how interest rates operate and compound interest, as well as the effects of inflation, discounting, and nominal versus real values (Van Rooij et al., 2011). BFL has an effect on investing in shares (Sivaramakrishnan et al., 2017; Van Rooij et al., 2011). For this study, BFL will be used as a moderating variable. BFL competency will be classified as either low or high based on a measurement instrument from Van Rooij et al. (2011). As a result, the following hypotheses are proposed in this study:

H10a: High BFL will have a positive moderating effect on EE influence towards customers' BI to adopt OST.

H10b: High BFL will have a positive moderating effect on EE influence towards customers' PE of OST.

H10c: High BFL will have a positive moderating effect on FC influence towards customer's PE of OST.

H10d: High BFL will have a positive moderating effect on TR influence towards customers' PE of OST.

H10e: High BFL will have a positive moderating effect on PE influence towards customers' BI to adopt OST.

H10f: High BFL will have a positive moderating effect on SI influence towards customers' BI to adopt OST.

H10g: High BFL will have a positive moderating effect on HM influence towards customers' BI to adopt OST.

H10h: High BFL will have a positive moderating effect on PV influence towards customers' BI to adopt OST.

H10i: High BFL will have a positive moderating effect on TR influence towards customers' BI to adopt OST.

2.7.9 *Control Variables*

This study will use the following control variables: age group, gender, highest education qualification and current use of OST. To provide an unbiased estimate, control variables are used to account for the potential influence of these variables on the measurement variables (Collier, 2020) .

CHAPTER 3. RESEARCH METHODOLOGY

The study followed a pragmatic worldview by adopting a two-phase mixed-method explanatory sequential research methodology. The explanatory design combines data from quantitative and qualitative studies (Cameron, 2009). According to Li et al. (2015), the mixed-method is an approach to collect, analyse and combine qualitative and quantitative data while simultaneously being a methodology to integrate qualitative and quantitative methods in several phases of the research progression, thus making it both a method and a methodology.

The chapter will explain the research approach, design, data collections methods, sampling procedure, data analysis and interpretation, study limitations, validity and reliability, and ethical considerations.

3.1 Research approach

Pragmatism is a philosophy of knowledge production that emphasises applied explanations to research questions and the consequences of analysis (Giacobbi et al., 2005). Pragmatists dispute the incorrect contradiction between the qualitative and quantitative research approaches and encourage the well-structured use of both (Cameron, 2009). According to Creswell and Creswell (2017), pragmatists argue that research occurs in several contexts, thus, for a mixed-method scholar, pragmatism opens up to multiple methods, diverse worldviews, and norms, including various methods of data collection and exploration. Jick (1979) argued that triangulation, defined by Denzin (1978) as the use of multiple methods to investigate the same phenomenon, helps to uncover the unexpected dimensions of a phenomenon which in turn helps to refashion or develop new theories. This study is well suited for pragmatism because it occurs in a convergent space between technology, behavioural finance, and economics. This study used a mixed-method explanatory sequential research methodology. The mixed-method approach allowed for a thorough interrogation of the topic by integrating insights from customers and suppliers in the OST value chain. Mixed-methods enabled the study to expand its scope and

breadth, and offset the weaknesses of the quantitative and qualitative approaches when used alone (Driscoll et al., 2007).

3.2 Research design

A mixed-method explanatory sequential research methodology refers to when an examiner first conducts quantitative research and the output is then used as input for the qualitative research, which will build on and explain the initial quantitative results to extract a more detailed understanding (Creswell & Creswell, 2017; Subedi, 2016). Subedi (2016) notes that mixed-method methodology minimises single method bias, and that many scholars have utilised it to look for opportunities to hear from a broader range of people with different points of view. This methodology was used for this study because it allowed for a structured interrogation and integration of consumer perceptions towards adoption of OST, combined with insights from subject matter experts on the constructs of the study. Including subject matter experts (stockbrokers, market analysts and regulators) offered insights previously not included in studies investigating factors affecting the adoption of OST.

3.2.1 *Research procedure*

The study implemented the mixed-method explanatory sequential methodology using a six-step process to integrate quantitative and qualitative analysis techniques as depicted in Figure 3–1 (Creswell, 2015; McCrudden & McTigue, 2019). Step one involved collecting quantitative data using an online survey to produce a nominal scales and ratios dataset. Step two focused on screening and cleaning the data before it was analysed to create a set of descriptive and regression statistical outputs. Step three used the analysis output from quantitative analysis to develop a set of semi-structured interview questions. Step four involved the collection of qualitative data from interviews. Data was collected by recording the discussions to produce transcripts as the primary output in step five. Step five included data coding and thematic analysis. Step six involved interpreting how themes, codes and quotations from the qualitative phase explain the quantitative findings.

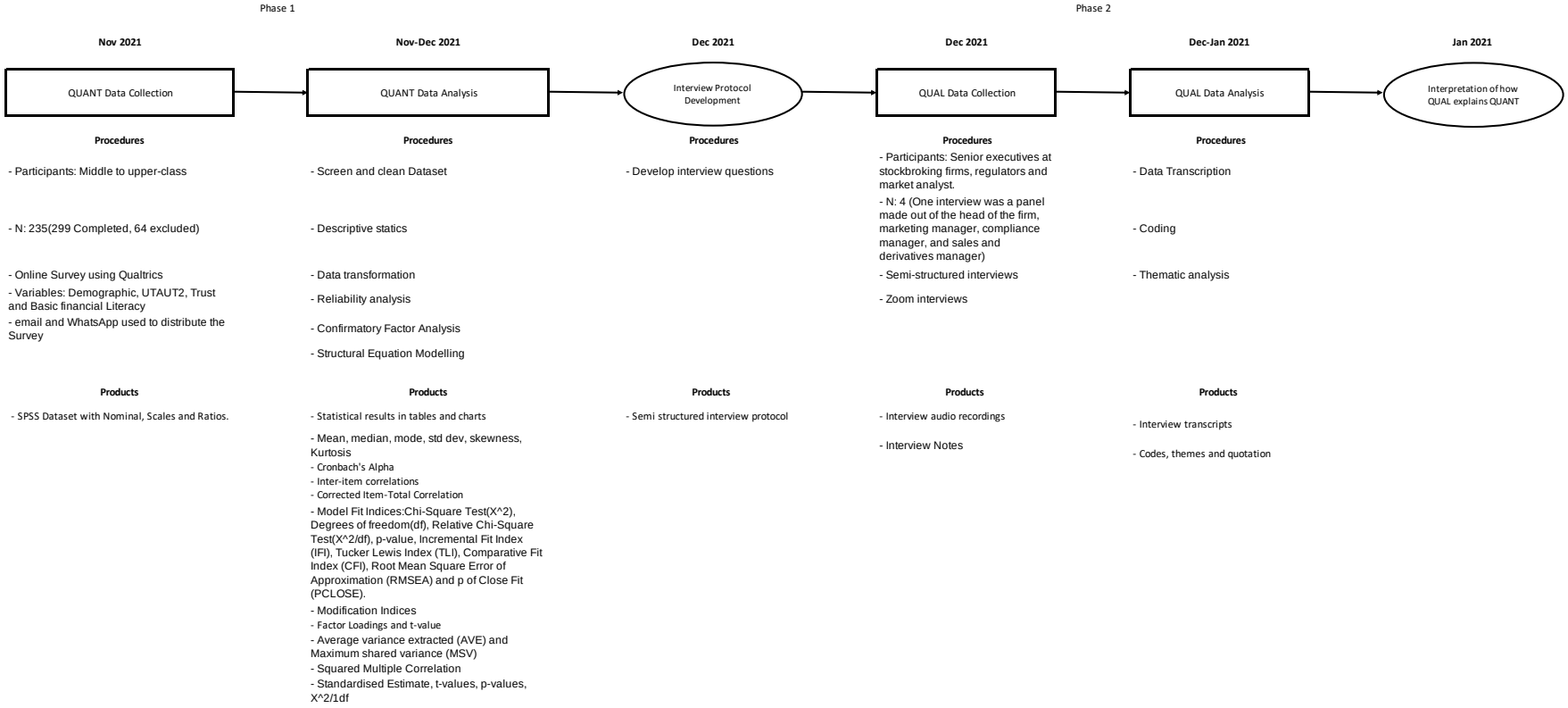

Figure 3–1 Sequential Mixed-Model study for OST adoption factors

3.2.2 *Phase 1: Quantitative study*

A quantitative survey was used because it is best suited to help researchers answer questions about predictive relationships between variables (Creswell & Creswell, 2017). In line with UTAUT2, which says behavioural intent is the precedent to actual behaviour in technology adoption (Venkatesh et al., 2012), this study used an adapted quantitative survey based on UTAUT2 to collect primary data to test the research hypothesis.

3.2.3 *Phase 2: Qualitative study*

Qualitative analysis was used to examine the opinions and insights of subject matter experts based on the outcomes of the quantitative survey (Creswell & Creswell, 2017; Ryan et al., 2009). The interview method was used because it is best suited to obtain information and insights informed by people's perceptions (Ryan et al., 2009). As part of the mixed-method research methodology, the interview collected qualitative data through discussions, to explain and refine outcomes from the quantitative phase (Doyle et al., 2009; Fetters et al., 2013; Ivankova et al., 2006).

3.2.4 *Advantages and Disadvantages*

The advantage of the proposed design includes examining and explaining factors influencing OST adoption from both, the consumer and practitioners' point of view. The practitioners were best positioned to explain unexpected results emerging from the proposed research conceptual model (Ivankova et al., 2006). The major disadvantage of the mixed-method is that it made the study lengthy, and required more resources and time to gather and examine quantitative and qualitative data points (Ivankova et al., 2006).

3.3 Data collection methods

Phase one collected data using the quantitative method, and phase two used the qualitative method in line with the mixed-method research design.

3.3.1 *Phase 1: Quantitative study*

An internet-based, cross-sectional survey questionnaire was used for phase one. Online surveys provide complex tools and services with a wide range of rich features to help researchers collect data for their studies (Evans & Mathur, 2005, 2018). An online survey was well suited for this study primarily due to its flexibility, speed, convenience, and ability to reach a wider audience (Evans & Mathur, 2005). While online surveys have significant strengths, they are not without weaknesses. Potential weaknesses relevant to this study included the survey being treated potentially as junk mail, privacy issues for respondents, and lack of clarity before answering questions (Evans & Mathur, 2005). To mitigate these weaknesses, the researcher ensured that:

- The survey was sent from a trusted e-mail address to the potential respondents (info@justonelap.com).
- The distribution on social media (mainly WhatsApp) was from a known number.
- A detailed letter with information on the study's purpose and instructions on how to complete the survey, was distributed with the questionnaire.
- The survey was administered from a credible and secure service provider, Qualtrics, which alleviated privacy and security issues.
- The study did not collect personal identification information as part of the survey.

3.3.2 *Phase 2: Qualitative study*

Semi-structured interviews were used for phase two of the study. Semi-structured interviews are an oral exchange where the examiner endeavours to extract information from the examinee by questioning in a self-conscious, orderly, and partially structured manner (Longhurst, 2003). Semi-structured interviews are ideal for the explanatory part of this study phase due to their relative flexibility and ability to explore a topic based on the answers provided (Alshenqeeti, 2014). The ability to involve reality based on the experience of the subject matter expert significantly benefits the study (Alshenqeeti, 2014). Potential disadvantages of

semi-structured interviews relevant to this study include the lack of anonymity, being potentially time-consuming, and possible inconsistencies of the interviewer (Alshenqeeti, 2014). To mitigate these disadvantages, the researcher ensured that:

- Interviews were timed to be less than 45 minutes each.
- The respondents were given code names to maintain their anonymity.
- Focus was placed on respondents' experience and knowledge, not their place of work, to further protect their employers.
- Practice sessions were held before the formal session with external parties not part of the study.
- Structured questions were always used to guide the interview.
- The interviewer focused on soliciting input from the interviewee and not on expressing an opinion during the interviews.

3.4 Population and Sample

3.4.1 *Population*

a. *Phase 1: Quantitative study*

The target population for the study was adults with gainful employment or other means of income generation. This study focused on the middle to upper classes citizens with online access in South Africa as primary subjects for examining factors affecting SMP and OST. For this study, middle class meant non-manual, professional workers with income between R10 000 and R25 000; and income above R25 000 being classified as upper class (Ndletyana, 2014). The middle and upper classes are more likely to have excess capital required to invest in shares.

b. *Phase 2: Qualitative study*

The target population for the study was senior executives at stockbroking firms, experienced market analysts, regulators, and educators in South Africa with at least ten years of experience in retail investing. Their cumulative experience

positioned them well to help explain the findings of the quantitative customer survey and the strategies employed by the industry to drive consumer adoption.

3.4.2 *Sample and Sampling*

a. *Phase 1: Quantitative study*

The study used non-probability sampling for convenience and availability (Creswell & Creswell, 2017). The survey was distributed to subscribers of a personal finance weekly newsletter (justonelap.com) because they represented a sample of the study's target population. Additionally, the survey was further distributed on social media (WhatsApp). According to Galawe (2017), researchers have no consensus on the theoretical framework for determining the ideal sample size for studies using factor analysis and multiple regression analysis. This study followed the approach of determining the sample size based on the participant/variable ratio. Following prevalent practice in the literature, of using between 10 to 15 observations per variable, this study aimed for a minimum sample size of 130 (13 variables multiplied by 10 observations) (Galawe, 2017).

b. *Phase 2: Qualitative study*

A judgement sampling technique was used for the study (Marshall, 1996). The researcher chose individuals best suited to provide industry and practical knowledge relevant to the study. Individuals with at least 10 years first-hand knowledge of, and experience in, the South African retail stockbroking industry were selected. Due to the similarities between providers of online stockbroking services in South Africa, a sample of four market participants provided enough information to reach data saturation (Boddy, 2016). Two Managing Directors (MD) of stockbroking firms in South Africa were interviewed (one interview was a panel made up of the firm’s MD, Marketing Manager, Compliance Manager, and Sales and Derivatives Manager). A single market analyst who is also a market educator and commentator in retail stock trading and investment, was interviewed as well. In addition, a regulatory representative was also interviewed.

3.5 The research instruments

3.5.1 *Phase 1: Quantitative study*

The qualitative survey instrument is based on the UTAUT2 instrument from Venkatesh et al. (2012), adapted to include basic financial literacy from Van Rooij et al. (2011), and Trust from Gefen et al. (2003).

An online survey was used to administer the questionnaire. The survey was divided into four sections. The survey questionnaire can be found in APPENDIX A .

1. Demographic information

   Demographic information was used as control variables in examining factors affecting the adoption of OST.
2. UTAUT2

   The questionnaire is based on existing scales adapted for OST. A seven-point Likert scale is used in all scales, with response options ranging from 1 ("strongly disagree") to 7 ("strongly agree") (Venkatesh et al., 2012).
3. Trust

   The questionnaire is based on existing scales adapted for OST. A seven-point Likert scale is used in all scales, with response options ranging from 1 ("strongly disagree") to 7 ("strongly agree") (Gefen et al., 2003).
4. Basic financial literacy

   BFL questions covered a range of financial topics, from numeracy to money illusion. All questions were single response multiple-choice, with the majority having five options (Van Rooij et al., 2011).

To test understanding and content, the survey was piloted with five participants from the selected sample. This process assisted in refining the survey before it was formally opened.

3.5.2 *Phase 2: Qualitative study*

The results of hypothesis testing from the quantitative analysis and unexplainable observations (i.e. skewed demographics) were used to formulate the qualitative questionnaire guide (Longhurst, 2003). Questions were structured to focus the semi-structured interview while allowing room for follow-up questions based on the responses, and for respondents to express their opinions broadly within the focus area. The questions elicited descriptive information based on the respondent's knowledge and experience. Questions and themes also included those related to examining the extent to which platform theory and platform growth strategies affect consumers' adoption of OST. The interview guide can be found in APPENDIX E .

3.6 Procedure for data collection

3.6.1 *Phase 1: Quantitative study*

The survey questionnaire was administered using the Qualtrics platform (wits.eu.qualtrics.com). The questionnaire was distributed via e-mail to JustOneLap newsletter subscribers because they represent the target demographic of the study. The questionnaire was also distributed using social media (WhatsApp) to solicit participation. Data was first stored online at https://wits.eu.qualtrics.com during the data collection phase. Post collection, data will be exported into SPSS format and stored in a secure Google drive cloud location and the researcher’s secured personal computer during analysis.

3.6.2 *Phase 2: Qualitative study*

Qualifying candidates were contacted by phone for exploratory discussions, which were followed by e-mails containing explanatory participation information and informed consent forms to interested candidates. After signed informed consent forms were received from candidates, interviews were scheduled. Due to Covid-19 restrictions, interviews were conducted online using ZOOM video conference technology, and recorded locally on the researcher's personal

computer. The researcher took notes where respondents emphasised essential information. The recordings were vital to ensure an accurate record of the interview (Longhurst, 2003). The recordings were used as a base for interview transcription. The recordings and transcriptions were stored in a secure Google drive cloud location and the researcher's secured personal computer during analysis.

3.7 Data analysis and interpretation

3.7.1 *Phase 1: Quantitative study*

The study used SPSS Statistics V27 and SPSS AMOS V27 software for analysis. Before commencing data analysis, data was screened for errors (Pallant, 2013). All categorical variables were checked to establish if values are within the expected range. For continuous variables, a test was conducted to find outliers using the following descriptive statistics functions: mean, minimum, maximum (Pallant, 2013). Incorrect values and incomplete surveys were eliminated. Collected data was tested for duplicates. Descriptive statistics was utilised to summarise all variables - dependent and independent (Creswell & Creswell, 2017). To evaluate paths between latent and measured variables, the study used the structural equation modelling technique (SEM) (Streiner, 2006). SEM is a set of analytical tools that makes it possible to investigate established relationships (Collier, 2020; Tabachnkick & Fidell, 2013). The study followed a two-step approach advocated by Anderson and Gerbing (1988). First, the model measurement was assessed for fitness by using confirmatory factor analysis (CFA). CFA examined the relationship between unobserved and observed constructs (Collier, 2020). SEM estimation was then used for hypothesis testing.

3.7.2 *Phase 2: Qualitative study*

The study used the thematic analysis approach and guidelines advocated by Braun and Clarke (2006). The study adopted a theoretical thematic analysis focused on developing themes to primarily explain the output of the qualitative analysis results, which examined factors affecting the adoption of OST (Braun &

Clarke, 2006). The thematic analysis process involved transcribing data, reviewing the transcripts for accuracy, and developing initial ideas. Transcription was followed by the systematic data coding of features across the data set. Data coding was conducted to organise interview data from the transcripts into themes (Creswell & Creswell, 2017). Coding involves two operations: separating interview data into units; and establishing themes into which units can be classified (Guetzkow, 1950). Portions of interview data, including a word, a paragraph, and a page, were examined for coherence and labelling with a word or short description that summarizes its content into a theme (Linneberg & Korsgaard, 2019). Following Linneberg and Korsgaard (2019), coding created an inventory of the data, which enabled the following:

- Getting a deep, comprehensive, and thorough understanding of the data.
- Making the data conveniently available and retrievable.
- Data organisation and categorisation.
- Safeguarding transparency.

The thematic analysis approach was used to methodically detect and organise emerging themes (Braun & Clarke, 2012; Costa et al., 2016). The flexibility of thematic analysis enabled this study to use an inductive approach driven by data from the bottom up (Braun & Clarke, 2012). ATLAS.ti V22 computer software was used for this study phase. The use of the software was valuable in improving the rigour of the analytical steps for validating data not reflecting the researcher's impression (Alhojailan, 2012). As part of the process of categorising different codes into themes, thematic maps in ATLAS.ti were used to graphically represent codes (Braun & Clarke, 2006). Clear definitions for each theme were developed to help create a story informed by the analysis. The definitions of the themes were used as a basis for the detailed qualitative analysis used to produce the final report.

3.8 Limitations of the study

The following were potential limitations:

- Misunderstanding of the questions by the respondent, resulting in wrong responses. The limitation was mitigated by using a known combination of questionnaires, adjusted for this study, and a pilot survey to test and address any issues on the final questionnaire.
- Lack of sufficient respondents to have a statically significant sample. The survey was distributed to as broad a base as possible to increase the response rate.
- Incomplete questionnaires can lead to inaccurate analysis. Data was screened before analysis to remove incomplete questionnaires.
- The researcher's lack of experience could have impacted the interviews for the qualitative phase of the study. A semi-structured approach and practice rounds were held before the actual interviews to mitigate this risk.
- The study lacks generalisability due to the limitation of scope, scale, and timing to interrogate relevant constructs deeply and broadly.

3.9 Validity and reliability

To minimise measurement errors, validity and reliability properties were calculated (Field, 2013). The validity of an instrument is determined by whether it measures what it claims to measure, while reliability assesses whether the instrument can be understood consistently across various circumstances (Field, 2013).

3.9.1 *Phase 1: Quantitative study*

a. *External validity*

External validity, according to Lynch (1999), can only be assessed by gaining a more profound knowledge of how the major variables interact in theory with moderator variables that are considered unimportant in literature. This study did not include moderator variables from literature deemed irrelevant, thus rendering the analysis unable to confirm external validity. Due to the limitations of scope, scale, and timing, this study cannot be extended to all background factors as moderating variables. Due to this limitation, insights from the examination must

be used with caution. Scholars, researchers, and practitioners can use the study as a foundation to examine the study area with more depth and rigour.

b. *Internal validity*

Internal validity, according to Winter (2000), relates to whether the measurement instruments are accurate and measure what they are supposed to measure. Internal validity is improved because this study is based on an empirically established theoretical framework and instrument. There are internal validity threats applicable to this study: mortality and selection. Mortality refers to participants dropping out during the study, thus affecting the study (Creswell & Creswell, 2017). These threats were addressed by recruiting enough participants to meet the minimum threshold to be statistically significant. Selection threat refers to selecting participants based on certain characteristics predisposing them to specific outcomes (Creswell & Creswell, 2017). To mitigate the selection threat, participants are chosen without any background or link to any of the factors examined by the study, thus reducing internal invalidity threat.

c. *Reliability*

Internal reliability was tested using Cronbach's Alpha (Alpha) coefficient, which measures how all items on the scale measure the same thing (Collier, 2020; Field, 2013, 2018; Pallant, 2013).

d. *Convergent and Discriminant Validity*

Convergent and discriminant validity respectively examined whether indicators will converge to measure a single concept and tests to see if a construct is unrelated to other constructs (Collier, 2020). Convergent validity was measured by average variance extracted (AVE), whereas discriminant validity was measured using maximum shared variance (MSV) (Collier, 2020).

3.9.2 *Phase 2: Qualitative study*

a. *Credibility*

Member checking was used to determine the accuracy of parts of the study, thus enhancing the study's credibility, which requires that the study's findings be verified from multiple standpoints or match reality (Creswell & Creswell, 2017; Sharan & Elizabeth, 2016). In this study, the results were confirmed by the researcher and the respondents.

b. *Transferability*

A study's findings are said to be transferrable if they can be used in other similar environments where they can be beneficial, and where there is evidence to support their integrity (Byrne, 2001; Daniel, 2019). Daniel (2019) further argues that the content of the interviews must be representative of the participants' lives for them to be transferable. The demographic and experience information of the participants must be furnished in the study, including sample recruitment and selection based on expert knowledge of the area of focus (Daniel, 2019). The study will achieve transferability because it meets the conditions established in literature. The selection criteria, sample size, recruitment process, demographic and experience information of the participants are detailed in the study.

c. *Dependability*

The study is dependable because the research findings are based on a replicable set of the processes, methods and instruments (Sharan & Elizabeth, 2016). The study documented all the steps to enable other researchers to replicate it (Creswell & Creswell, 2017). The research report outlined in detail the processes, methods and instruments used in both quantitative and qualitative phases of the study.

d. *Confirmability*

Confirmability can be accomplished by keeping detailed records that allow an impartial assessor to trace the decisions made and steps taken during the study (Byrne, 2001). The study will achieve confirmability because it followed the

processes prescribed in the literature. Steps and decision points are well documented and articulated in the research report for both quantitative and qualitative phases of the study.

3.10 Demographic profile

The demographic profile of the sample for both quantitative and qualitative studies, was both males and females aged 25 and above from all racial and ethnic groups in South Africa.

3.11 Ethical considerations

- The researchers shall be accountable for the research and conduct the study in line with the ethics code of Wits University (Greaney et al., 2012).
- The Wits University ethics committee was provided with all the relevant information to enable the committee members to fulfil their obligations (Greaney et al., 2012).
- Honesty and integrity: All the work in this study is the researcher's work. Data from other researchers was always referenced to acknowledge the original creators of the work. Turnitin was used to measure the plagiarism of the final report.
- Professional courtesy and fairness: The researcher extended professional courtesy to all parties involved in the study, including all participants (Greaney et al., 2012; Greenwood, 2016).
- The confidentiality and privacy of all the participants were prioritised, consistently maintained, and protected (Greenwood, 2016).
- The participants were given sufficient information to provide informed consent (Greaney et al., 2012; Hopf, 2004).
- To maintain sufficient anonymity and confidentiality, no descriptive demographic data was collected, which can potentially identify respondents identify (Hopf, 2004).

Table 3–1 Consistency Matrix: Quantitative Survey

<table>
<tr><th colspan="8">Factors Affecting Online Share Trading Adoption in South Africa</th></tr>
<tr><td colspan="8">Main Objective: To explore factors affecting the adoption of OST in South Africa</td></tr>
<tr><th>Sub-Aims/Objectives</th><th>Literature Review</th><th>Hypotheses /Propositions</th><th>Research questions</th><th>Variables (Independent & Dependent)</th><th>Source of data</th><th>Type of data</th><th>Analysis</th></tr>
<tr><td>To examine the influence of EE, FC and TR on PE of OST.</td><td rowspan="2">(Abroud et al., 2015; Gefen et al., 2003; Khan et al., 2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013; Van Rooij et al., 2011; Venkatesh et al., 2012)</td><td>• H2: EE will positively influence customers PE of OST.
• H3: FC will positively influence customers PE of OST.
• H4: TR will positively influence customers PE of OST.</td><td>To what extend does EE influence customers PE?
To what extend does FC influence customers PE?
To what extend does TR influence customers PE?</td><td>IV1=EE
IV2=FC
IV3=TR
DV1= PE
MV=BFL
CV1=Age
CV2=Gender
CV3=OST Use
CV4=Qualification</td><td rowspan="2">Questionnaire
Section A
Section B
Section C
Section D</td><td rowspan="2">Section A: Nominal Data
Section B: Ordinal (7 Likert Scale)
Section C: Ordinal (7 Likert Scale)
Section D: Ratio</td><td rowspan="2">1. Descriptive
2. Partial least squares
3. Structural equation modelling</td></tr>
<tr><td>To examine the influence of EE, PE, SI, HM, PV, and TR on the consumers intentions to adopt OST.</td><td>• H1: EE will positively influence customers BI to adopt OST.
• H5: PE will positively influence customers BI adopt OST.
• H6: SI will positively influence customers BI to adopt OST.
• H7: HM will positively influence customers BI to adopt OST.
• H8: PV will positively influence customers BI to adopt OST
• H9: TR will positively influence customers BI to adopt OST.</td><td>To what extend does EE influence customers BI to adopt OST.
To what extend does PE influence customers BI to adopt OST.
To what extend does SI influence customers BI to adopt OST.
To what extend does HM influence customers BI to adopt OST.
To what extend does PV influence customers BI to adopt OST.
To what extend does PR influence customers BI to adopt OST.</td><td>IV1=EE
IV3=TR
IV4=SI
IV5=HM
IV6=PV
IV7=TR
DV2= BI
MV=BFL
CV1=Age
CV2=Gender
CV3=OST Use
CV4=Qualification</td></tr>
<tr><td colspan="8">KEYWORDS - Online share trading, consumer technology adoption, retail investing, UTAUT2</td></tr>
<tr><td colspan="2">IV: Independent Variable</td><td>DV: Dependent Variable</td><td>CV: Control Variables</td><td colspan="2">MV: Moderating Variables</td><td></td><td></td></tr>
</table>

Table 3–2 Consistency Matrix: Qualitative Survey

Research Title: Factors Affecting Online Share Trading Adoption in South Africa							
Main objective: To explore factors affecting the adoption of OST in South Africa							
Sub-Objectives	**Literature Review**	**Propositions**	**Research questions**	**Phenomenon/ Keywords**	**Source of data**	**Type of data**	**Analysis**
To understand and explain the factors affecting the adoption of OST quantitative study results	(Abroud et al., 2015; Gefen et al., 2003; Khan et al., 2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013; Van Rooij et al., 2011; Venkatesh et al., 2012)	There are factors affecting the adoption of OST.	Why are certain factors affecting the adoption of OST?	OST adoption	Semi-structured Interviews	Nominal	Thematic Analysis
To explore the extent to which platform growth strategies affect the adoption of OST.	(Parker & Van Alstyne, 2014; Parker et al., 2016)	The choice and deployment of platform growth strategies play a pivotal role in the consumer's adoption of OST.	How are platform growth strategies are driving consumer adoption of OST?	Platform growth strategies	Semi-structured Interviews	Nominal	Thematic Analysis

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results of the data analysis based on collection methods as described in Chapter 3. The study examined factors affecting the adoption of online share trading (OST) in South Africa. The examination focused on OST as a function of stock market participation (SMP) through a technology-based platform. The technology adoption model was adapted to include additional constructs and variables. The study followed a two-phase mixed-method explanatory sequential research methodology.

The first phase was based on a quantitative research method. An online questionnaire was distributed using social media and a personal finance newsletter. Survey response data were anonymously collected using Qualtrics. Survey responses were stored in the password-protected Qualtrics cloud, the researcher's password-protected personal computer for analysis, and a password protected cloud storage facility. The study used SPSS Statistics V27 for data validation & transformation, descriptive and regression statistics. SPSS AMOS V27 was used for structural equation modelling (SEM). The quantitative data presentation began with the presentation of the sample characteristics of the respondents using descriptive statistics (frequency, mean, median, standard deviation, skewness and kurtosis). The reliability of the scale's measurement was assessed next, followed by an examination of the model measurement using confirmatory factor analysis. Lastly, the structural model was analysed using a three-stage approach to gradually incorporate control variables in stage two and moderating variables in stage three.

The second phase of mixed-method research methodology used qualitative research methodology. The quantitative research findings were used as input into phase two semi-structured interview questionnaire formulation. The role of the platform strategies was integrated into the interview questionnaire.

4.2 Phase one

4.2.1 *Adoption survey construct definition*

The study examined eight constructs which had between three and six indicators, excluding BFL (see Table 4–1) (Gefen et al., 2003; Venkatesh et al., 2012). The indicators were measured using a seven-point Likert scale, with response options ranging from 1 ("strongly disagree") to 7 ("strongly agree"). BLF was examined using a measurement tool based on five questions (Van Rooij et al., 2011).

Table 4–1 Constructs definition

Constructs definition	Items
Performance Expectancy (PE): PE is referred the degree to which employing technology will benefit customers in executing specific activities	PE1: I find Online Share Trading useful in my daily life. PE2: Using Online Share Trading increases my chances of achieving investment or trading goals that are important to me. PE3: Using Online Share Trading helps me accomplish investing or trading in shares more quickly PE4: Using Online Share Trading increases my ability to make profitable investments/trades.
Effort Expectancy (EE): EE is the level of ease related to consumers' use of technology	EE1: Learning how to use Online Share Trading is easy for me. EE2: My interaction with Online Share Trading is clear and understandable. EE3: I find Online Share Trading useful in my daily life. EE4: It is easy for me to become skilful at using Online Share Trading.
Social Influence (SI): SI is the degree to which consumers feel that those important to them believe they should use a specific technology.	SI1: People who are important to me think that I should use Online Share Trading. SI2: People who influence my behaviour think that I should use Online Share Trading. SI3: People whose opinions that I value prefer that I use Online Share Trading.
Facilitating Conditions (FC): FC refers to consumers' perceptions of the availability of resources and support to use a technology.	FC1: I have the resources necessary to use Online Share Trading. FC2: I have the knowledge necessary to use Online Share Trading. FC3: Online Share Trading is compatible with other technologies I use. FC4: I can get help from others when I have difficulties using Online Share Trading.
Hedonic Motivation (HM): HM is described as the enjoyment obtained from utilising a technology, and it is a key	HM1: Using Online Share Trading is fun. HM2: Using Online Share Trading is enjoyable. HM3: Using Online Share Trading is entertaining.

Constructs definition	Items
factor of consumer adoption and use of technology.	
Price Value (PV): PV is defined as the consumers' rational trade-off between the perceived benefits of the technology and the economic cost of using it.	PV1: Online Share Trading is reasonably priced. PV2: Online Share Trading is good value for the money. PV3: At the current price, Online Share Trading provides good value.
Behavioural Intention (BI): BI is the degree to which an individual intends to engage in a particular behaviour.	BI1: I intend to use Online Share Trading in the future. BI2: I will always try to use Online Share Trading in my daily life. BI3: I plan to use Online Share Trading in future. BI4: I predict I would use Online Share Trading in the future.
Trust (TR): TR is the belief that a trusted party will fulfil their obligations.	TR1: I believe that Online Share Trading is trustworthy. TR2: I trust in Online Share Trading. TR3: I do not doubt the honesty of Online Share Trading. TR4: I feel assured that legal and technological structures adequately protect me from problems on Online Share Trading. TR5: Even if not monitored, I would trust Online Share Trading to do the job right. TR6: Online Share Trading has the ability to fulfil its task.
Basic financial literacy (BFL): BFL is a metric for knowing how interest rates operate, The effects of inflation, discounting, and nominal versus real values.	BL1N: Numeracy BL2N: Interest compounding BL3N: Inflation BL4N: Time value of money BL5N: Money illusion

4.2.2 *Research Model*

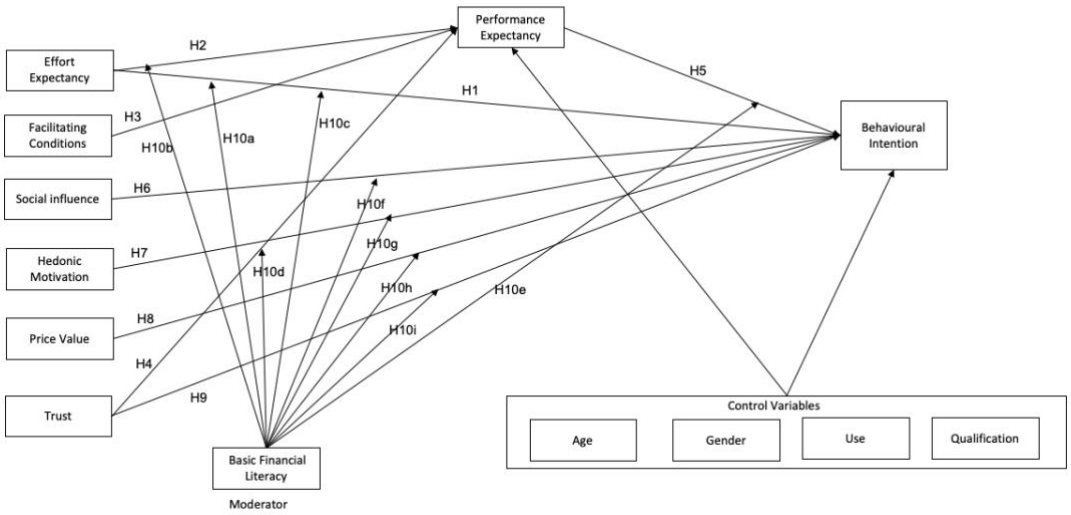

Figure 4–1 Proposed Research Model: Adoption of OST

(Gefen et al., 2003; Van Rooij et al., 2011; Venkatesh et al., 2012)

4.2.3 *Sample Characteristics*

The online survey was piloted before public participation. Feedback was used to enhance the clarity of several questions. 299 people responded to the online survey. Five respondents declined to give consent, so those entries were eliminated. An additional 59 incomplete responses were ruled out. After screening and cleaning in line with Collier (2020), 235 responses (N) were deemed fit for analysis. Most respondents were between 26 and 55 years of age (79,7%). Males made up the majority (68.5%) of the respondents. Those who had at least a bachelor's degree made up 78.7% of the respondents. Table 4–2 shows the characteristics of respondents.

Table 4–2 Characteristics of respondents

Item	Category	Frequency	Percentage
Gender	Male	161	68.5
	Female	71	30.2

Item	Category	Frequency	Percentage
Age Group	18-25 Years	6	2.6
	26-35 Years	61	26.0
	36-45 Years	73	31.1
	46-55 Years	53	22.6
	56- years and older	42	17.9
Highest Education Qualification	High School	26	11.1
	Diploma	25	10.6
	Bachelor's degree	53	22.6
	Postgraduate degree	131	55.7
Currently Use OST	Yes	184	78.3
	No	51	21.7

Approximately 78.3% of respondents currently use OST, with an average usage duration of 7.9 years. The OST usage duration is heavily skewed to the left (Skewness=.895) because most respondents have been using OST for ten years or less (see Table 4-3), which is the mode, as depicted in Figure 4–2 (Field, 2018). The data distribution was slightly peaked with the Kurtosis at 0.465. The Skewness and Kurtosis values are within an acceptable range for the data to pass the normality test (Field, 2018). Table 4–3 shows OST usage descriptive statistics.

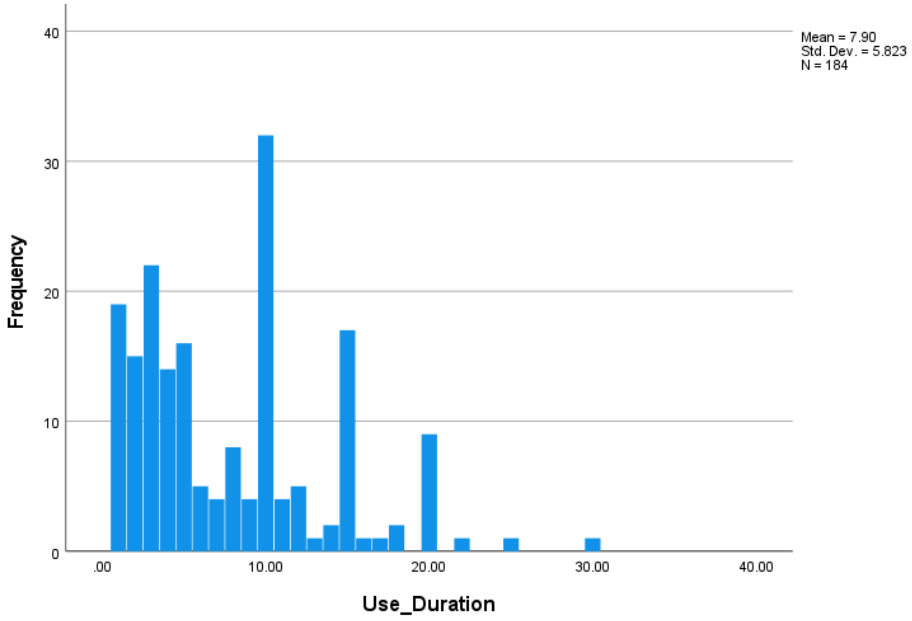

Figure 4–2 OST usage duration histogram

Table 4–3 Descriptive statistics for OST usage duration

N	Min	Max	Mean	Median	Mode	Std. Dev	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
184	1.00	30.00	7.9	7	10	5.82	.895	.179	.465	.356

4.2.4 *Adoption survey responses*

a. *Performance Expectancy*

Participants agree and strongly agree (between 70% and 55%) with performance expectancy proposition. Ability to make profitable trades had the highest non-comital in neither agree nor disagree (20%).

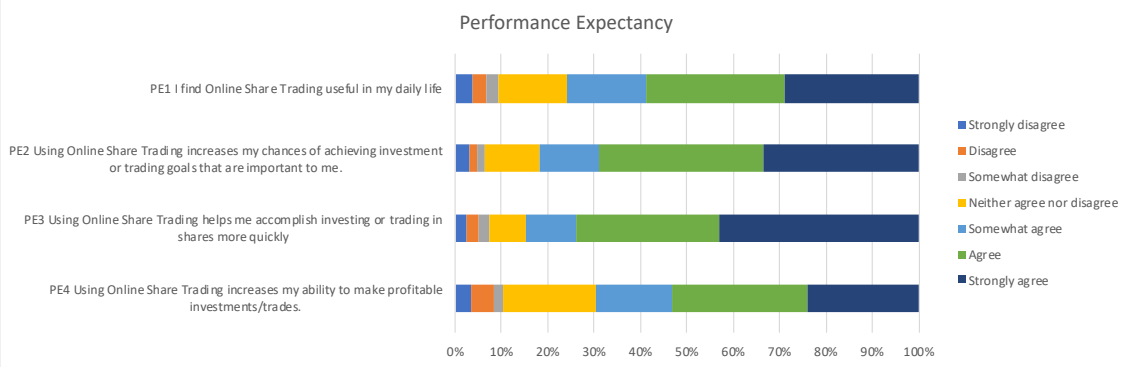

Figure 4–3 Adoption survey responses - Performance Expectancy

b. *Effort Expectancy*

Four propositions of effort expectancy were agreed on and strongly agreed on by participants (between 65% and 55 %). Becoming skilled at using online share trading had a noticeable somewhat agree (25%).

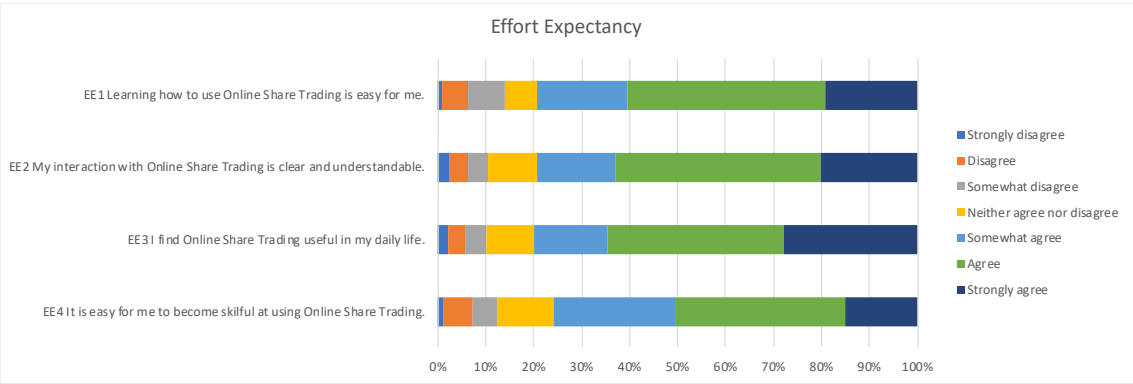

Figure 4–4 Adoption survey responses – Effort Expectancy

c. *Social Influence*

Participants were inclined to neither agree nor disagree (35%) with all social influence statements.

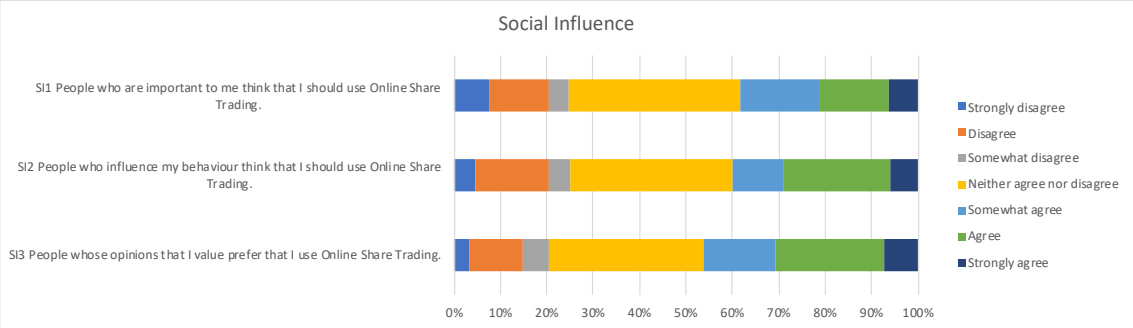

Figure 4–5 Adoption survey responses – Social Influence

d. *Facilitating conditions*

Participants somewhat agree, agree, and strongly agree (between 90% and 70%) with four propositions of facilitating conditions. The percentage of people who agree or strongly agree that they have access to necessary resources, is relatively high (80%).

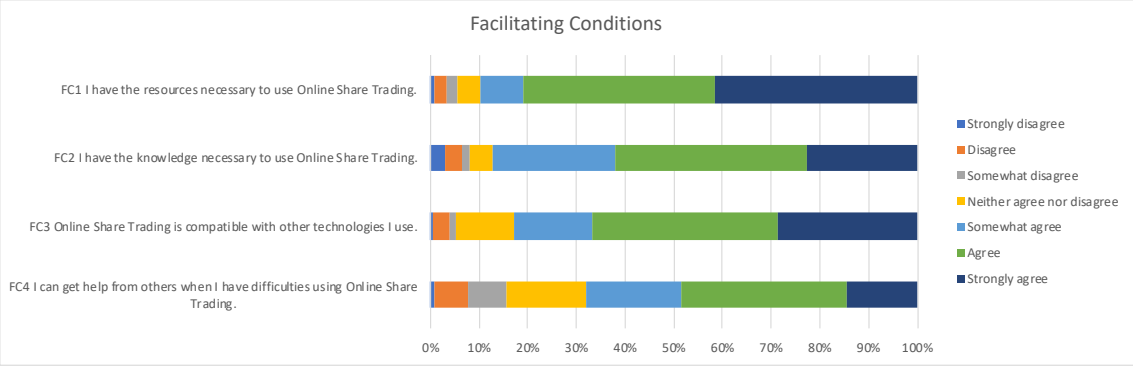

Figure 4–6 Adoption survey responses – Facilitating Conditions

e. *Hedonic Motivation*

Participants agree and strongly agree (between 45% and 25%) with three propositions of hedonic motivation. Across all propositions, participants scored somewhat agree at 25%.

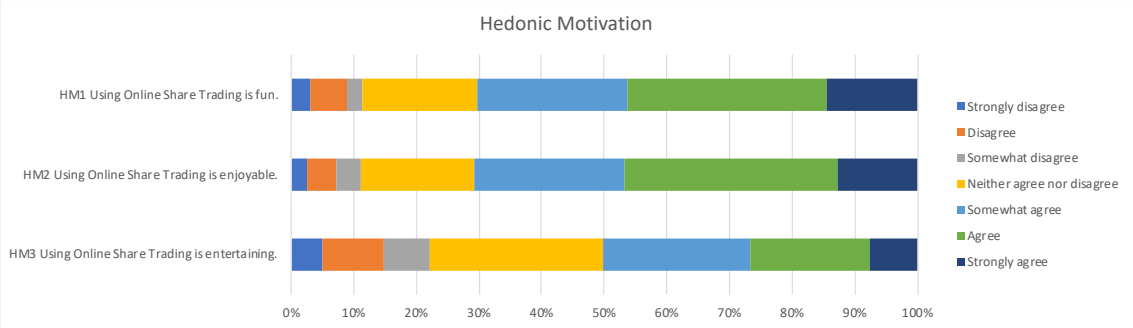

Figure 4–7 Adoption survey responses – Hedonic Motivation

f. *Price Value*

Participants somewhat agree, agree, and strongly agree (+-70%) with the three propositions of price value.

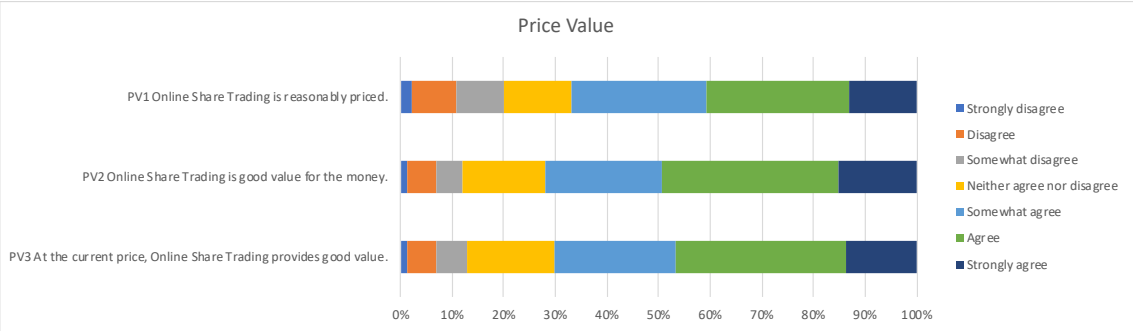

Figure 4–8 Adoption survey responses – Price Value

g. *Behavioural Intention*

Participants agree and strongly agree (+-80%) with three propositions of behavioural intention. The use of online share trading in daily life had the highest (30%) ranking of neither agree nor disagree and somewhat agree.

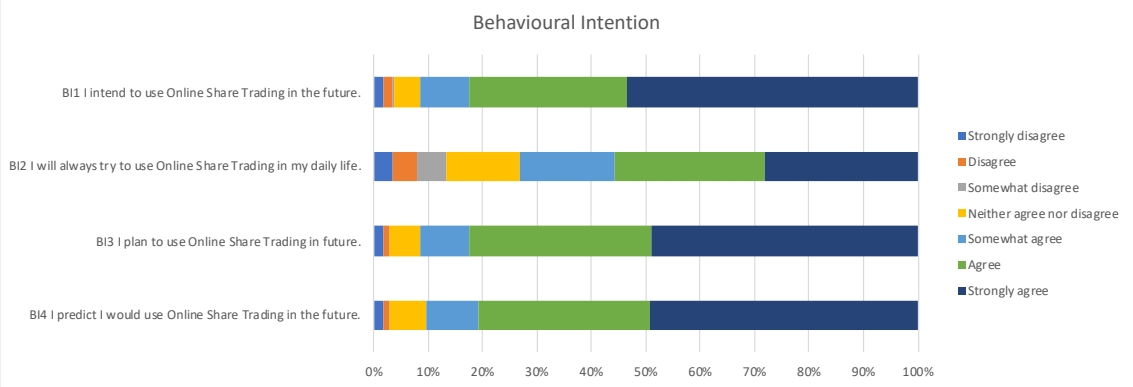

Figure 4–9 Adoption survey responses – Behavioural Intention

h. *Trust*

Participants agree and strongly agree (between 70% and 50%) with five of the propositions of trust. The proposition to do the job right, even when not monitored, had the highest strongly disagree and disagree (20%).

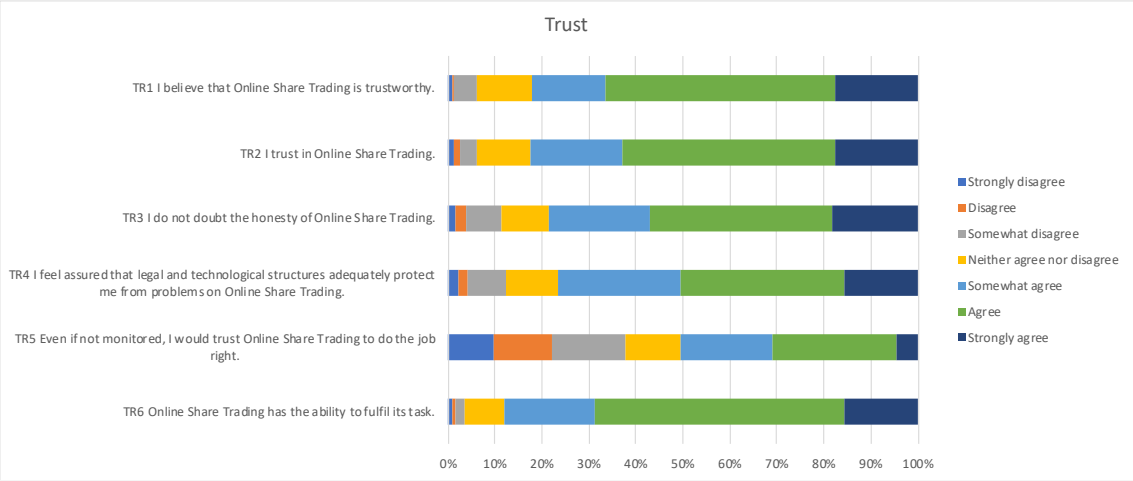

Figure 4–10 Adoption survey responses – Trust

i. *Basic Financial Literacy*

An overwhelming majority (94.5%) of respondents selected the correct options for the numeracy questions in the BFL assessment. However, the number of respondents who selected the correct option declined after the numeracy question, as shown in Table 4–4. Money illusion had the lowest correct scores (76.6%). Only 53.6% of respondents selected the right options on all five questions (See Table 4–5).

Table 4–4 Basic financial literacy: Weighted percentages (Simplified)

	Numeracy	Interest compounding	Inflation	Time value of money	Money illusion
	BL1	BL2	BL3	BL4	BL5
Incorrect	5.5	17	12.8	18.7	23.4
Correct	94.5	83	87.2	81.3	76.6

Table 4–5 Basic financial literacy

Number of Correct Answers	Frequency	Percentage
0	4	1.7
1	7	3
2	7	3
3	22	9.4
4	69	29.4
5	126	53.6

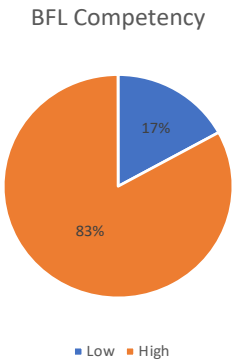

Figure 4–11 BFL Competency

A BFL index was adapted from Van Rooij et al. (2011). The original index utilised quartiles to categorise the BFL competency (only used lower quartile classified as low, and upper quartile as high). This study divided the data into two categories, high and low. A decision to use two categories was necessary to

enable the integration of BFL into the structural equation modelling as a moderating categorical variable. A High competency status was assigned to respondents who correctly answered four or five questions. Respondents with a score of three and below were assigned a competency status level of Low. Four was deemed an appropriate cut-off point for High competency because it was equivalent to a score of 80%. Figure 4–11 and Table 4–5 show the BFL competency categorisation, indicating that 83% of respondents had a High BFL competency. The High BFL competency level closely mirrored the high number (78%) of respondents with a bachelor's degree. The percentage of correct answers by gender was lower for females across all five questions. Money illusion performed the worst at 67.6% incorrect compared to 81.4% for males. A summary of the BFL assessment is shown in Figure 4–12.

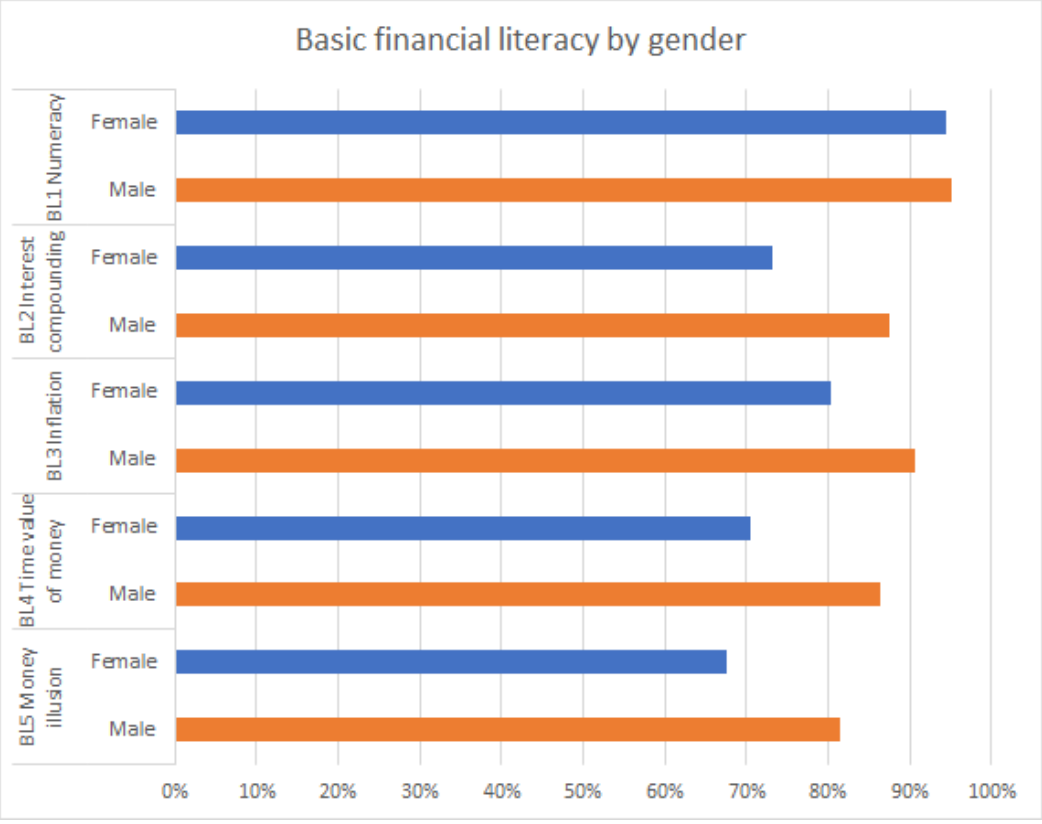

Figure 4–12 Basic financial literacy by gender

(Prefer not to say was excluded due to low response rates.)

A cross-examination of the data combining gender, age, qualification, BFL and OST usage showed three major heterogeneous groups who collectively made up 50.5% of all respondents. The first group (29.3% of respondents) had the following characteristics: male, over 26 years, postgraduate degree, High BFL competency, and currently use OST . The second group (12.8% of respondents): male, over 26 years, undergraduate degree, High BFL competency, and currently use OST. The third group (8.1% of respondents): female, over 26 years, graduate degree, High BFL competency and currently use OST. The distribution of males within various age groups above 26 years was nearly evenly spread, ranging from 12.34% to 16.17%. The same comparison for females had a broader range of 2.13% to 7.23%, with the 26-45 age group accounting for a significant portion of the female respondents (see Table D–10 in APPENDIX D). The profile of respondents was heavily skewed towards males, holders of a bachelor's degree (both male and female) and current users of OST. This skewness will be considered in the study's analysis, discussion, and conclusion sections.

4.2.5 *Normality*

Skewness and kurtosis statistics are <2 and <7, respectively, thus confirming that data normality (Curran et al., 1996). Figure 4–13 shows a graphical representation of Skewness and Kurtosis. Detailed statistics are shown in Table D–5 (in APPENDIX D). From Figure 4–13, all the indicators had a negative Skewness meaning they were distributed to the right of the measurement scale, confirming observations in Section 0. Most indicators had a positive Kurtosis, with a few having substantial peaks.

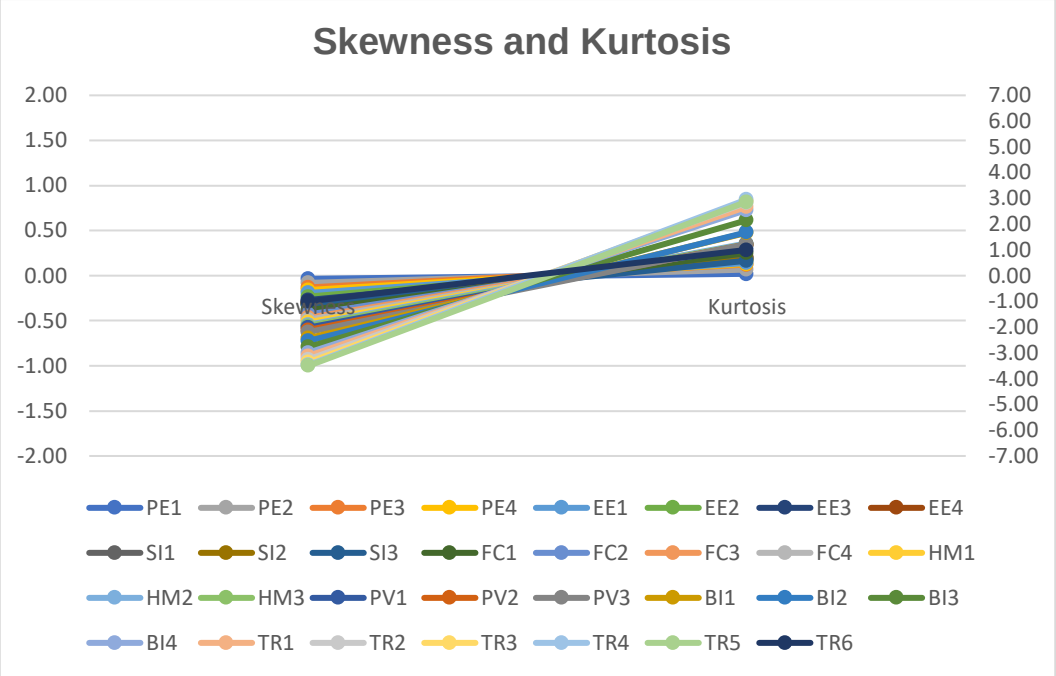

Figure 4–13 Skewness and Kurtosis

4.2.6 *Reliability of Measurement Scale*

The reliability of the indicators to predict constructs was measured using Cronbach's Alpha (Alpha) and inter-item correlations (Collier, 2020; Field, 2013, 2018; Pallant, 2013). Alpha > 0.7 is deemed acceptable (Collier, 2020; Field, 2013, 2018; Pallant, 2013). Alpha in some constructs could be improved by deleting potentially problematic indicators. These indicators are highlighted in the Item-Total Statistic table for each construct (Collier, 2020; Field, 2013, 2018; Pallant, 2013). The degree to which each item correlated with the total score was measured using corrected item-total correlation; they should be > 0.3 to be acceptable (Field, 2013, 2018). Inter-item correlations ≤ 0.2 indicate questionable internal consistency and potentially problematic indicators. They should be > 0.2 to demonstrate convergent validity (Collier, 2020; Field, 2013, 2018; Pallant, 2013). The reliability of PE, EE, SI, FC, HM, BI, PV, and TR were individually tested following the literature (Collier, 2020; Field, 2013, 2018).

a. ***Performance Expectancy***

PE had an Alpha of .865, thus proving all the indicators were reliable (Table 4–6). However, Alpha could be improved to .877 if PE4 were to be deleted, and which was removed from the construct going forward. All corrected item-total correlation were > 0.3 proving good internal consistency. All inter-item correlations were > 0.2, thus demonstrating convergent validity (Table 4–7) (Field, 2013, 2018).

Table 4–6 PE Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
PE1	16.82	15.048	.675	.497	.843	.865
PE2	16.55	14.539	.830	.709	.781	
PE3	16.38	14.870	.774	.657	.803	
PE4	17.00	15.722	.594	.394	.877	

Table 4–7 PE Inter-Item Correlation Matrix

	PE1	PE2	PE3	PE4
PE1	1.000	.671	.662	.450
PE2	.671	1.000	.790	.625
PE3	.662	.790	1.000	.530
PE4	.450	.625	.530	1.000

b. ***Effort Expectancy***

EE had an Alpha of .927, thus proving all the indicators are reliable (Table 4–8). All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2 demonstrated convergent validity (Table 4–9) (Field, 2013, 2018).

Table 4–8 EE Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
EE1	16.17	15.298	.862	.746	.893	.927
EE2	16.12	15.425	.840	.713	.901	
EE3	16.00	15.466	.824	.699	.906	
EE4	16.34	16.107	.790	.646	.917	

Table 4–9 EE Inter-Item Correlation Matrix

	EE1	EE2	EE3	EE4
EE1	1.000			
EE2	.784	1.000		
EE3	.782	.794	1.000	
EE4	.783	.722	.691	1.000

c. ***Social Influence***

SI had an Alpha of .906, thus proving all the indicators are reliable (Table 4–10). All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2 demonstrated convergent validity (Table 4–11) (Field, 2013, 2018).

Table 4–10 SI Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
SI1	8.70	8.945	.788	.651	.886	.906
SI2	8.59	8.346	.870	.757	.815	
SI3	8.38	9.356	.782	.641	.890	

Table 4–11 SI Inter-Item Correlation Matrix

	SI1	SI2	SI3
SI1	1.000		
SI2	.803	1.000	
SI3	.688	.796	1.000

d. *Facilitating Conditions*

FC had an Alpha of 0.752, thus proving all the indicators are reliable (Table 4–12). However, Alpha could be improved to .814 if FC4 were to be deleted, and which was removed from the construct going forward. All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2, demonstrated convergent validity (Table 4–13) (Field, 2013, 2018).

Table 4–12 FC Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
FC1	16.30	10.289	.591	.458	.674	.752
FC2	16.78	8.966	.676	.529	.618	
FC3	16.64	9.873	.628	.414	.653	
FC4	17.26	10.971	.342	.135	.814	

Table 4–13 FC Inter-Item Correlation Matrix

	FC1	FC2	FC3	FC4
FC1	1.000			
FC2	.656	1.000		
FC3	.524	.599	1.000	
FC4	.221	.312	.340	1.000

e. *Hedonic Motivation*

HM had an Alpha of .833, thus proving all the indicators are reliable (Table 4–14). However, Alpha could be improved to .914 if HM3 was to be deleted, but that would then reduce the number of indicators to a recommended minimum of three (Galawe, 2017). As a result, HM3 was retained. All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2 demonstrated convergent validity (Table 4–15) (Field, 2013, 2018).

Table 4–14 HM Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
HM1	9.52	7.268	.842	.779	.773	.833
HM2	9.50	7.704	.822	.765	.795	
HM3	10.17	7.885	.669	.450	.931	

Table 4–15 HM Inter-Item Correlation Matrix

	HM1	HM2	HM3
HM1	1.000		
HM2	.871	1.000	
HM3	.661	.633	1.000

f. ***Price Value***

PV had an Alpha of .930, thus proving all the indicators are reliable (Table 4–16). All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2 demonstrated convergent validity (Table 4–17) (Field, 2013, 2018).

Table 4–16 PV Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
PV1	10.26	7.426	.827	.684	.926	.930
PV2	9.98	7.884	.875	.778	.884	
PV3	10.05	7.934	.872	.774	.887	

Table 4–17 PV Inter-Item Correlation Matrix

	PV1	PV2	PV3
PV1	1.000		
PV2	.800	1.000	
PV3	.796	.862	1.000

g. ***Behavioural Intention***

BI had an Alpha of .865, thus proving all the indicators were reliable (Table 4–18). However, Alpha could be improved to .951 if BI4 were to be deleted, and

which was removed from the construct going forward. All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2 demonstrated convergent validity (Table 4–19) (Field, 2013, 2018).

Table 4–18 BI Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
BI1	17.60	12.693	.874	.822	.849	.905
BI2	18.47	12.045	.645	.440	.951	
BI3	17.64	12.899	.888	.887	.847	
BI4	17.66	13.173	.820	.800	.869	

Table 4–19 BI Inter-Item Correlation Matrix

	BI1	BI2	BI3	BI4
BI1	1.000			
BI2	.660	1.000		
BI3	.896	.617	1.000	
BI4	.808	.568	.894	1.000

h. ***Trust***

PE had an Alpha of .880, thus proving all the indicators were reliable (Table 4–20). However, Alpha could be improved to .920 if TR5 were to be deleted, and which was removed from the construct going forward. All corrected item-total correlation > 0.3 proved good internal consistency. All inter-item correlations > 0.2 demonstrated convergent validity (Table 4–21) (Field, 2013, 2018).

Table 4–20 TR Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
TR1	25.98	29.072	.810	.825	.843	.880
TR2	26.03	28.692	.806	.822	.842	
TR3	26.19	27.213	.805	.704	.839	
TR4	26.31	27.918	.736	.546	.851	
TR5	27.39	28.838	.443	.250	.920	
TR6	25.89	31.167	.711	.530	.860	

Table 4–21 TR Inter-Item Correlation Matrix

	TR1	TR2	TR3	TR4	TR5	TR6
TR1	1.000					
TR2	.893	1.000				
TR3	.801	.786	1.000			
TR4	.658	.665	.647	1.000		
TR5	.340	.331	.420	.458	1.000	
TR6	.663	.677	.658	.605	.367	1.000

4.2.7 *Construct reliability results summary*

The following indicators were removed: PE4, FC4, BI2, and TR5. The constructs of the modified scale all had an Alpha > 0.7, ranging from .814 to .951, suggesting that the indicators were reliable. Table 4–22 shows modified constructs reliability results (Field, 2013, 2018).

Table 4–22 Modified construct reliability results

Constructs	Code	No. of Items before modification	Before Modification-Alpha	No. of Items deleted	After Modification-Alpha
Performance Expectancy	PE	4	.865	1	.877
Effort Expectancy	EE	4	.927	0	.927
Social Influence	SI	3	.906	0	.906
Facilitating Conditions	FC	4	.752	1	.814
Hedonic Motivation	HM	3	.833	0	.833
Price Value	PV	3	.930	0	.930
Behavioural Intention	BI	4	.905	1	.951
Trust	TR	6	.880	1	.920

4.2.8 *Measurement model*

The study utilised SPSS AMOS V27(AMOS) to examine the measurement model and assess its fitness. The model fit indicates how well the research model closely represents the collected data (Collier, 2020). AMOS has a vast array of tests for model fit. This study used reliable model fit indices based on recommended literature (Collier, 2020; Meyers et al., 2016; Tabachnkick & Fidell,

2013). The study utilised the following indices: Chi-Square Test(X^2), Degrees of Freedom(df), Relative Chi-Square Test(X^2/df), p-value, Incremental Fit Index (IFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and p of Close Fit (PCLOSE). A model is said to have a good fit if the majority of indices are in line or better than the reference value thresholds (Collier, 2020; Tabachnkick & Fidell, 2013). Indicators loading factors were examined. Loading factors are acceptable if they load at > 0.7 (Collier, 2020). Standardised residual covariances were utilised to test for possible model misspecification. Residual values > 2.58 indicated possible model misspecification (Collier, 2020).

a. *Confirmatory factor analysis*

The measurement model produced X^2 = 460.924 (df = 296, p < 0.001), suggesting that the model was not a good fit. All other model fit indices were within their reference threshold, suggesting that there was a good model fit between observed data and the measurement model (X^2/df = 1.557, p< .001, IFI =.970, TLI= .964, CFI = .970, RMSEA =.049, PCLOSE =.582). Table 4–24 shows a detailed breakdown of the indices (under the Before Modification Results heading) and the reference threshold. All loading factors were > 0.7, except for HM3, which loaded at 0.688. HM3 was retained even though its loading was below the acceptable level because removing it would have reduced the number of indicators below the recommended minimum of three (Galawe, 2017). Table 4–25 shows the details of the loading factors. The loading factor for FC3 (0.702) was uncomfortably low, and close to the minimum threshold when compared to other loading factors for the rest of the indicators, but it was retained for the same reason as HM3. The examination of standardised residual covariances showed that all residual values were < 2.58, thus confirming the non-existence of possible model misspecification (Collier, 2020). Detailed residual values are provided in Table D–13 (in APPENDIX D). While the observed data and the model fit were good, the Modification Indices' examination recommended adding five covariances to the error terms to improve the model fit. The proposed modifications are provided in Table 4–23.

Table 4–23 Modification Indices

Construct	Indicator	Error Terms	Indicator	Error Terms
EE	EE3	EER3	EE4	EER4
EE	EE1	EER1	EE4	EER4
TR	TR1	TER1	TR6	TER6
TR	TR2	TER2	TR6	TER6
TR	TR3	TER3	TR4	TER4

The model was modified over several iterations. The final measurement model is depicted in Figure 4–14. Post model modification, model fit indices improved, showing an improvement (increase and decrease) across all indices. Final model fit indices are also tabled in Table 4–24, under the After Modification Results heading. Some loading factors (see (Collier, 2020; Field, 2013, 2018; Meyers et al., 2016; Pallant, 2013)

Table 4–25) and standardised residual covariances (see Table D–14 in APPENDIX D) also improved post-modification.

Table 4–24 Model Fit Indices

Model Fit Indices		Before Modification Results	After Modification Results	Reference value	Fit
Chi-Square Test	X^2	460.924	410.143		-
Degrees of freedom	df	296	291		-
Relative Chi-Square Test	X^2/df	1.557	1.409	< 3	Good Fit
p-value	p-value	.000	.000	>0.05	Poor Fit
Incremental Fit Index	IFI	.970	.978	>0.9	Good Fit
Tucker Lewis Index	TLI	.964	.974	>0.9	Good Fit
Comparative Fit Index	CFI	.970	.978	>0.9	Good Fit
Root Mean Square Error of Approximation	RMSEA	.049	.042	=<0.05	Good Fit
p of Close Fit	PCLOSE	.582	.929	>0.05	Good Fit

Reference values (Collier, 2020; Field, 2013, 2018; Meyers et al., 2016; Pallant, 2013)

Table 4–25 Factor Loadings

Path			Before Modification		After Modification	
			Loading Factor	t-value	Loading Factor	t-value
BI1	<---	BI	0.908	**	0.908	**
BI3	<---	BI	0.986	28.895	0.986	28.906
BI4	<---	BI	0.905	22.895	0.905	22.93
EE1	<---	EE	0.896	**	0.875	**
EE2	<---	EE	0.89	20.133	0.897	19.066
EE3	<---	EE	0.874	19.353	0.888	18.676
EE4	<---	EE	0.827	17.285	0.809	18.05
FC1	<---	FC	0.735	**	0.736	**
FC2	<---	FC	0.877	12.225	0.878	12.243
FC3	<---	FC	0.702	10.168	0.7	10.149
HM1	<---	HM	0.945	**	0.945	**
HM2	<---	HM	0.924	21.885	0.924	21.898
HM3	<---	HM	0.688	12.947	0.688	12.947
PE1	<---	PE	0.762	**	0.762	**
PE2	<---	PE	0.893	13.973	0.893	14.012
PE3	<---	PE	0.878	13.803	0.877	13.823
PV1	<---	PV	0.861	**	0.861	**
PV2	<---	PV	0.933	20.187	0.934	20.201
PV3	<---	PV	0.922	19.83	0.922	19.818
SI1	<---	SI	0.841	**	0.842	**
SI2	<---	SI	0.951	18.016	0.951	18.004
SI3	<---	SI	0.835	15.828	0.836	15.843
TR1	<---	TR	0.937	**	0.943	**
TR2	<---	TR	0.942	27.454	0.948	27.889
TR3	<---	TR	0.847	20.165	0.815	18.777
TR4	<---	TR	0.719	14.315	0.699	13.991
TR6	<---	TR	0.741	15.116	0.863	15.042

** = Items constrained for identification purposes.

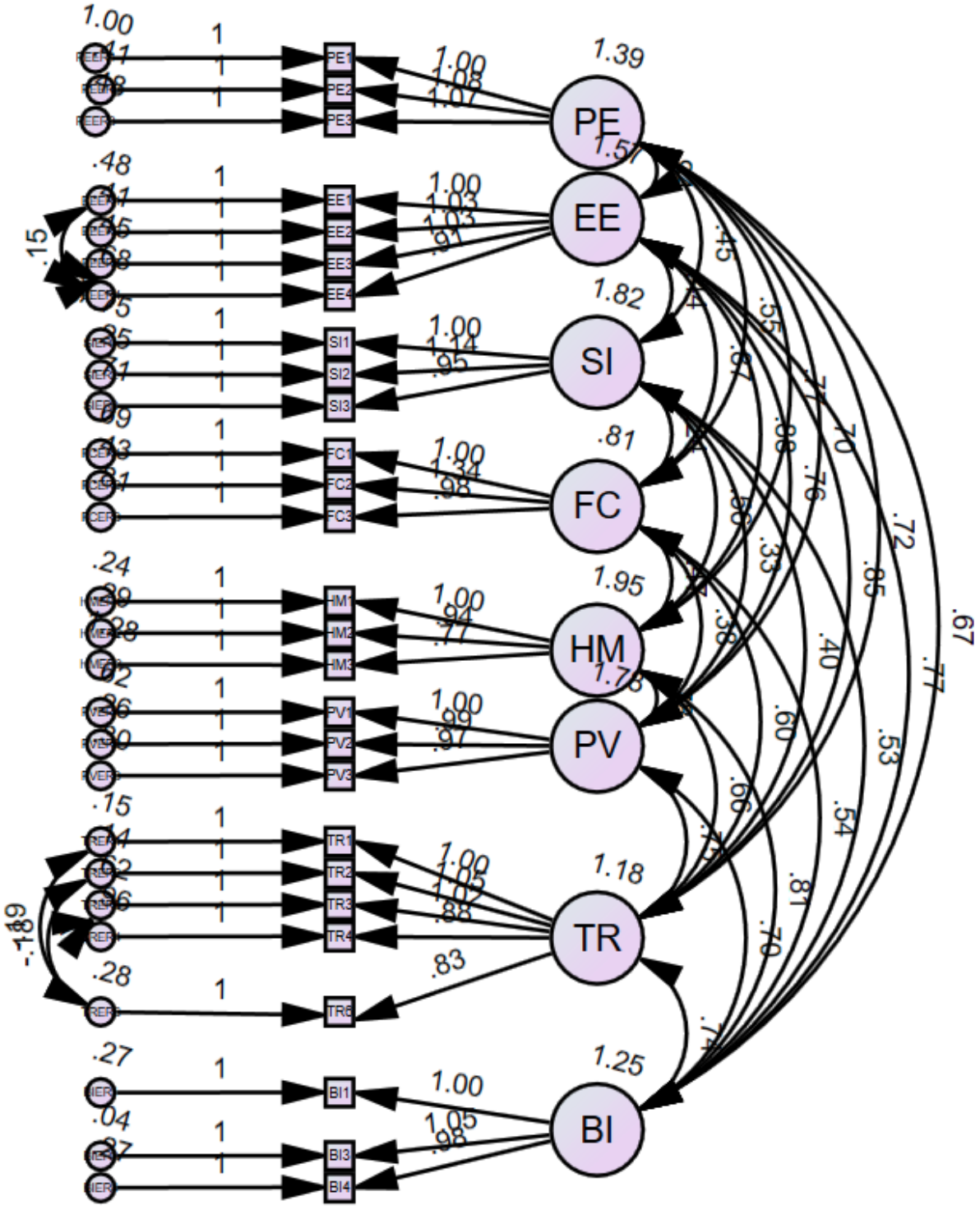

Figure 4–14 Modified measurement model

b. ***Convergent and Discriminant Validity***

Convergent and discriminant validity respectively examined whether indicators will converge to measure a single concept, and tested to see if a construct was unrelated to other constructs (Collier, 2020). Convergent validity is measured by average variance extracted (AVE), whereas discriminant validity is measured using maximum shared variance (MSV) (Collier, 2020). To indicate convergent validity, the AVE value must be > 0.50 (Collier, 2020). The AVE values for all constructs in the study were > 0.5, thus proving convergent validity. Discriminant validity exists when MSV < AVE (Collier, 2020). All constructs in our model had the MSV < AVE, thus proving discriminant validity, meaning that all constructs were unrelated.

Table 4–26 Convergent and Discriminant Measures

Construct	Average variance extracted (AVE)	Maximum Shared Variance (MSV)
BI	0.93	0.35
EE	0.87	0.46
FC	0.77	0.46
HM	0.85	0.2
PE	0.84	0.34
PV	0.91	0.23
SI	0.88	0.11
TR	0.85	0.35

4.2.9 *Structural Equation Modelling*

An examination of the structural model was conducted in three iterations. The first iteration examined the structural model hypotheses without control and moderating variables. Control variables (age group, gender, highest education qualification, and current use of OST) were added on the second iteration. The third iteration, the final structural model, included both the control and moderating variables. This approach was adopted to examine the model evolution and its predictive power with the increased complexity in the relationships between the various constructs and variables.

a. *Base Structural Model*

The model fit results suggest the structural model had sufficient goodness of fit with observed data (X^2/df = 1.438, p < 0.001, IFI = .976, TLI = .972, CFI = .976, RMSEA = .043, PCLOSE = .889), even though X^2 = 424.246 (df = 292, p < 0.001). It must be noted that the model fitness indices of the structural model had not significantly deteriorated when compared to the measurement model fitness indices detailed in Table 4–24. Path analysis of the proposed conceptual research model yielded mixed results. Five relationships were found to be significant, three relationships were insignificant, and one relationship was nearly significant. EE significantly predicted PE (Standardised estimate (γ) =.522, p < 0.000) and TR (γ = .267, p < 0.000). In contrast, FC was an insignificant predictor of PE (γ = -.058, p < .594). PE (γ = .076, p < .289) and EE (γ = 0.135, p < .094) were poor predictors of BI with insignificant relationships. PV (γ = .114, p < .061) nearly met the threshold, with the p-value needing to be close to 0.05 to have a significant relationship with BI. The strength of this relationship will be further examined with control and moderating variables. BI was found to be significantly predicted by SI (γ = .13, p < .014), HM (γ = .202, p < .001), and TR (γ = .302, p < 0.000). Therefore, hypotheses H2, H4, H6, H7 and H8 are supported, and H1, H3, H5 and H8 are rejected. The current structural model predicted 45.6% of the variance in PE and a slightly higher variance of 49.7% in BI. The current model's ability to predict BI is not satisfactory, thus necessitating further examination. A graphical representation of the model is presented in Figure D–2 (in APPENDIX D).

Table 4–27 Base Structural Model Results

Hypothesised Relationship	Standardised estimate (γ)	t-values	p-values	Hypothesis supported
H1: EE → BI	0.135	1.674	0.094	Not supported
H2: EE → PE	0.522	4.654	<0.001	Supported
H3: FC → PE	-0.058	-0.533	0.594	Not supported
H4: TR → PE	0.267	3.595	<0.001	Supported
H5: PE → BI	0.076	1.059	0.289	Not supported
H6: SI → BI	0.13	2.458	0.014	Supported
H7: HM → BI	0.202	3.264	0.001	Supported
H8: PV → BI	0.114	1.872	0.061	Not supported
H9: TR → BI	0.302	4.362	<0.001	Supported
Squared Multiple Correlation(R^2):				
PE	.456			

BI	.497
Model Fit Statistics:	
X^2= 424.246, df=292, X^2/df = 1.438, p-value < 0.001, IFI = .976, TLI = .972, CFI = .976, RMSEA = .043, PCLOSE = .889	

b. *Structural Model – Control Variables*

The introduction of control variables (age group, gender, highest education qualification (Qualification) and current usage of OST) to the structural model, slightly changed the model fit indices. The overall results were consistent with the model fitness for the base structural model, where the structural model had sufficient goodness of fit with observed data (X^2 = 496.945, df = 371, X^2/df = 1.339, p < 0.001, IFI = .978, TLI = .972, CFI = .972, RMSEA = .038, PCLOSE = .991). The standardised estimation in the strength of the relationships between the dependant variables (PE and BI) and the independent variables (EE, FC, SI, HM, PV and TR) experienced a slight change except for PV and BI changing to be statistically significant (γ = .143, p < 0.016). With the introduction of control variables, only two relationships were statistically significant. Gender was found to influence PE negatively (γ = -0.007, p < 0.001), albeit weak. The current use of OST also had a weak negative influence on BI (γ = -0.006, p < 0.001). Age group and Qualification did not have any statistically significant influence on both PE and BI. Notwithstanding the weak and negative influence of the control variables on PE and BI, their introduction to the structural model improved the prediction of variance of PE and BI to 50.6% and 54.1%, respectively. A graphical representation of the model is presented in Figure D–3 (in APPENDIX D).

Table 4–28 Structural Model Results with Control Variables

Hypothesised Relationship	Standardised Estimate	t-values	p-values	Hypothesis supported
H1: EE → BI	0.076	0.955	0.34	Not supported
H2: EE → PE	0.392	3.508	<0.001	Supported
H3: FC → PE	-0.077	-0.726	0.468	Not supported
H4: TR → PE	0.212	2.955	0.003	Supported
H5: PE → BI	0.044	0.614	0.539	Not supported
H6: SI → BI	0.15	2.878	0.004	Supported
H7: HM → BI	0.183	3.05	0.002	Supported
H8: PV → BI	0.143	2.405	0.016	Supported
H9: TR → BI	0.284	4.273	<0.001	Supported
Control Variable Relationship	Standardised Estimate	t-values	p-values	Significance test
Gender → BI	-0.202	-0.135	0.893	Not significant
Gender → PE	-0.007	-4.102	<0.001	Significant
Age Group → BI	-0.084	0.363	0.716	Not significant

Age Group → PE	0.019	-1.776	0.076	Not significant
Qualification → BI	0.013	1.48	0.139	Not significant
Qualification → PE	0.079	0.279	0.78	Not significant
Current Use → BI	-0.06	-3.896	<0.001	Significant
Current Use → PE	-0.279	-0.905	0.366	Not significant
Squared Multiple Correlation(R^2):				
PE	.506			
BI	.541			
Model Fit Statistics:				
X^2= 496.945, df=371, X^2/df = 1.339, p-value < 0.001, IFI = .978, TLI = .972, CFI = .972, RMSEA = .038, PCLOSE = .991				

c. *Structural Model with Moderation*

BFL competency was introduced as a moderation variable in the structural model analysis. A multi-group analysis technique was used to analyse the effect of BFL competency. The multi-group approach is the best-suited technique where the moderator is a categorical variable which was the case in this study. BFL competency was classified as either Low or High. The model fitness results were consistent with the model fitness for the base structural model (including control variables). The structural model had sufficient goodness of fit with observed data (X^2 = 1219.778, df = 742, X^2/df = 1.644, p-value < 0.001, IFI = 0.921, TLI = 0.897, CFI = 0.918, RMSEA = 0.053, PCLOSE = 0.209). While most of the model fit indices were within the threshold reference values, a few changed to be below the reference values (TLI 0.897 < .9 and RMSEA 0.053 > 0.05). The new values were close enough to the reference values to accept that the structural model had sufficient goodness of fit with observed data. The model fit indices comparison between the moderated structural models indicated that there was a difference in the structural models for BFL Low and High (X^2 = 25.738, df = 17, X^2/df = 0.003, p-value = 0.079, IFI = 0.002, TLI = 0.001, CFI = 0.001, RMSEA = 0.001, PCLOSE = 0.009). To identify the relationships where the moderator had a statistically significant effect on independent and dependent variables relationships, group differences for X^2/(1df) and p-value were determined. At one degree of freedom, X^2/(1df) had to have a value of < 3.84, at a level of 0.05 significance, to be statistically significant. A detailed examination of the standardised estimates highlights differences between the strength and nature of the relationships between independent and dependent variables for the two BFL groups (see Table 4–29). All but three of the relationships had statistically insignificant differences to affect the moderated structural model.

BFL had a statistically significant effect on TR's ability to predict BI, the influence of gender on PE, and the current use of OST's influence on PE. While differences could be seen in the standardised estimate of most relationships between independent and dependant variables, most differences were not sufficiently statistically different (see Table 4–29). TR power to predict BI (X^2/(1df) = 5.773, $p < 0.016$) was different between BFL Low ($\gamma = 0.662$, $p < 0.001$) and BFL High ($\gamma = 0.198$, $p < 0.005$). The role of TR was very high for BFL Low compared to BFL High. Gender's influence on PE (X^2/(1df) = 5.059, $p < 0.024$) was different between BFL Low (γ= -0.3, $p < 0.045$) and BFL High ($\gamma = 0.058$, $p < 0.345$). The role of gender had a negative influence on PE for BFL low, compared to BFL High which had a positive influence. Current use of OST influence on PE (X^2/(1df) = 4.529, $p < 0.033$) was different between BFL Low (γ=-0.035, $p < 0.805$) and BFL High (γ =-0.342, $p < 0.001$). The current use of OST had a negative influence on PE for BFL Low but was not statistically significant, however, compared to BFL High, current use of OST also had a negative influence on PE, and it was statistically significant.

Therefore, hypotheses H10a, H10b, H10c, H10d, H10e, H10f, H10g, H10h were rejected, and H10i was supported. The moderated current structural model prediction strength was much stronger for BFL Low, explaining the variance in PE and BI at 62.4% and 65.5% respectively, compared to BFL High which could only explain 48.3% and 53.1% variance in PE and BI respectively. A graphical representation of the moderated structural model is presented in Figure D–4 for BFL Low and Figure D–5 for BFL High (in APPENDIX D).

Table 4–29 Structural Model Results with Moderation

	BFL Low			BFL High			Group Differences	
Hypothesised Relationship	Standardised Estimate	t-values	p-values	Standardised Estimate	t-values	p-values	Δ X^2/1 df	p-value
H10a: EE → BI	0.331	1.415	0.157	0.094	1.039	0.299	0.997	0.318
H10b: EE → PE	0.499	2.19	0.029	0.358	2.791	0.005	0.065	0.798
H10c: FC → PE	-0.377	-1.289	0.197	-0.065	-0.563	0.574	0.809	0.368
H10d: TR → PE	0.544	2.569	0.01	0.15	1.961	0.05	2.808	0.094
H10e: PE → BI	-0.3	-1.84	0.066	0.057	0.716	0.474	3.675	0.055
H10f: SI → BI	-0.12	-0.908	0.364	0.222	3.761	<0.001	3.093	0.079
H10g: HM → BI	0.067	0.401	0.689	0.206	3.207	0.001	0.053	0.818
H10h: PV → BI	-0.021	-0.117	0.907	0.155	2.327	0.02	0.331	0.565
H10i: TR → BI	0.662	3.456	***	0.198	2.783	0.005	5.773	0.016
Gender → BI	-0.367	-2.994	0.003	-0.161	-2.944	0.003	3.419	0.064
Gender → PE	-0.3	-2.005	0.045	0.058	0.945	0.345	5.059	0.024
Age Group → BI	-0.216	-1.908	0.056	-0.068	-1.297	0.195	2.094	0.148
Age Group → PE	-0.08	-0.61	0.542	0.017	0.28	0.78	0.435	0.51
Qualification → BI	-0.092	-0.761	0.447	0.021	0.399	0.69	0.665	0.415
Qualification → PE	-0.067	-0.584	0.559	0.114	1.865	0.062	1.871	0.171
Current Use → BI	0.057	0.425	0.67	-0.073	-0.938	0.348	0.577	0.447
Current Use → PE	-0.035	-0.247	0.805	-0.342	-4.029	<0.001	4.529	0.033

Squared Multiple Correlation(R^2)	BFL Low	BFL High
PE	0.624	0.483
BI	0.655	0.531

Model Fit Across the Groups
X^2= 1219.778, df= 742, X^2/df = 1.644, p-value < 0.001, IFI = 0.921, TLI = 0.897, CFI = 0.918, RMSEA = 0.053, PCLOSE = 0.209
Model Fit Statistics – Model Comparison Δ
X^2= 25.738, df= 17, X^2/df = 0.003, p-value = 0.079, IFI = 0.002, TLI = 0.001, CFI = 0.001, RMSEA = 0.001, PCLOSE = 0.009

4.2.10 *Summary of quantitative survey findings*

Data analysis was conducted to examine factors affecting the adoption of OST in South Africa. The analysis integrated a modified technology adoption model with an economics and behavioural finance constructs to better understand the convergence of the two domains and their influence on consumers adoption of OST. The study used behavioural intention as a predictor of actual behaviour. Final OST adoption model is depicted in Figure 4–15.

Based on the analysis, effort expectancy as a measure for the degree of technology's ease of use does not affect the consumer's behavioural intention to adopt OST. The performance of OST as a tool for delivering investment objective also has no effect on consumers' intention to adopt it. However, effort expectancy and trust were found to affect consumers' performance expectation of OST. The availability of support resources did not affect consumers' performance expectation towards OST.

Social influence from family, friends, and peers directly and positively affected consumers' behavioural intention to adopt OST. The pleasure derived from OST, and the positive cost-benefit outcome also positively influenced consumers' behavioural intention to adopt OST. Trust in the providers of OST came out stronger than all other factors in its positive influence on customers adoption of OST. Gender, age, and highest educational qualifications played no role in consumers' adoption of OST. The current use of OST had a negative effect on the continued use of OST, albeit a negligible one.

Basic financial literacy had a limited impact on the adoption of OST. It only positively affected trust in OST in customers (all levels of financial literacy).

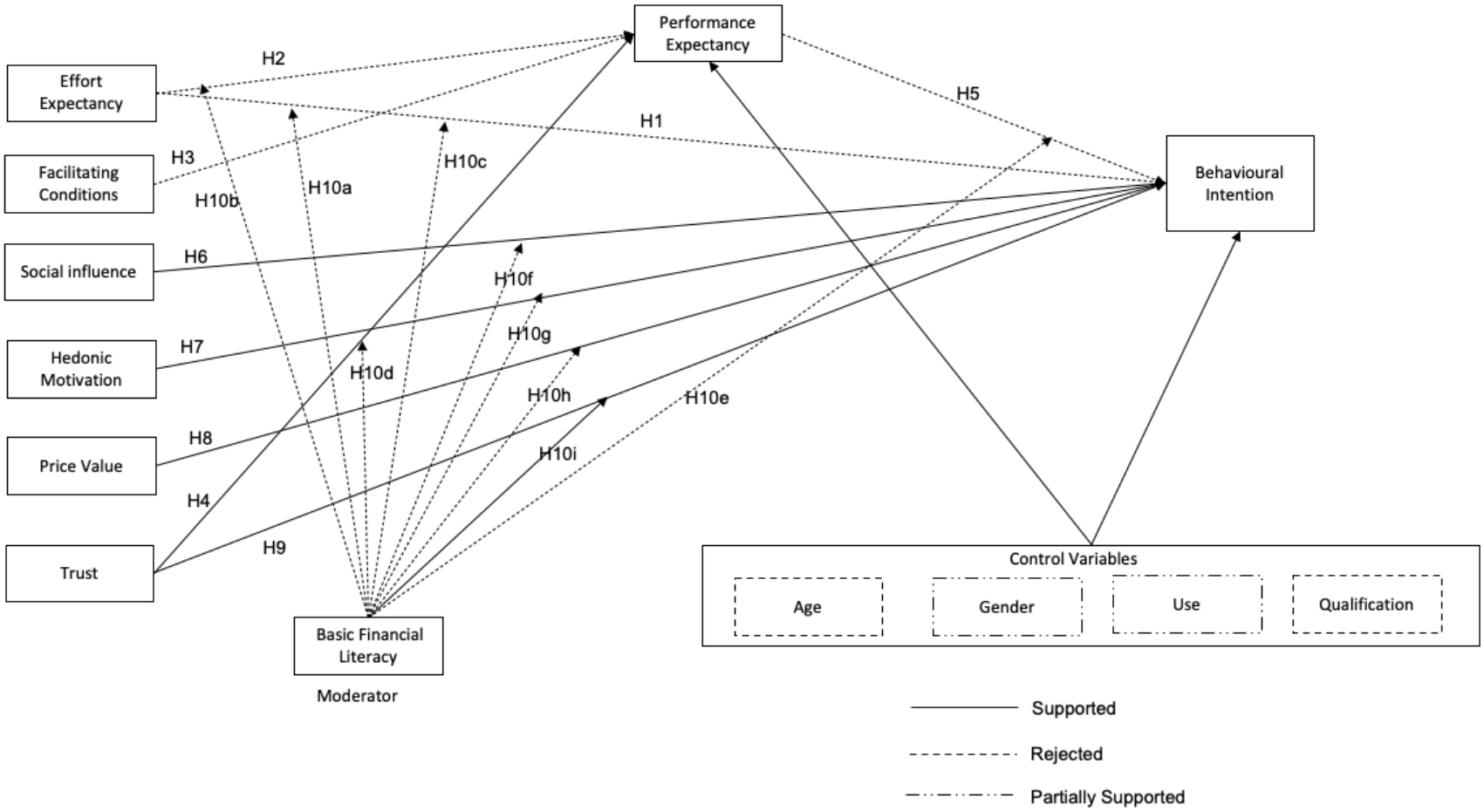

Figure 4–15 Final OST Adoption Model

4.3 Phase two:

4.3.1 *Introduction*

The quantitative findings from phase one were utilised to create a set of questions for the semi-structured interview questionnaire. The platform strategies' role was included in the interview questionnaire. The interviewees were given the opportunity to explain the quantitative finding as broadly as possible without being constrained by the questions. The questionnaire used in the study is depicted in Table E–1 (in APPENDIX E). The questionnaire examined the outcomes of SEM analysis, including broad drivers affecting OST, data skewness (age, gender, and qualification), and how platform growth strategies influence OST adoption.

4.3.2 *Participants*

Two Managing Directors of stockbroking firms (P2, P4) in South Africa were interviewed (one interview was a panel made up of the firm's MD (P4), Marketing Manager (P6), Compliance Manager (P7), and Sales and Derivatives Manager (P5)). A single market analyst who is also a market educator and commentator in retail stock trading and investment (P1), was interviewed as well. Additionally, a regulatory representative was also interviewed (P3).

Table 4–30 Participants profiles

Participant	Position	Type of Firm	Experience (Years)	Gender
P1	Owner & Managing Director	Education and market analysis	20-25	Male
P2	Managing Director	Online stockbroker	15-20	Male
P3	Senior Manager	Market regulatory institution.	15-20	Male
P4	Managing Director	Online stockbroker	15-20	Male

Participant	Position	Type of Firm	Experience (Years)	Gender
P5	Sales and Derivatives Manager	Online stockbroker	5-10	Male
P6	Marketing Manager	Online stockbroker	2-3	Female
P7	Compliance Manager	Online stockbroker	3-4	Female

4.3.3 *Concepts*

Thematic analysis technique was used as described in Chapter 3 (Research Methodology), and one hundred and nighty one (191) concepts were developed from transcripts after several coding iterations (see Table G–1 in APPENDIX G for coding concepts and APPENDIX F for transcripts).

4.3.4 *Themes*

Concepts were further refined and reduced to eleven themes (see Table 4–31).

Table 4–31 Themes from concepts

Themes	Definition	No of Concepts
DIY Investing	Do-It-Yourself (DIY) investing is a type of investing in which ordinary investors run their own share trading account.	42
Gamification	Gamification is a technique for increasing user engagement and encouraging positive behaviour patterns when using a service (Hamari et al., 2014).	21
Internet Adoption	Internet adoption is the measure of the number of individuals with broadband access and use of corresponding technologies.	14

Themes	Definition	No of Concepts
Female Participation	Female participation refers to the rate of females engaging directly with the stock market through online share trading platform.	23
Pandemic	The term "pandemic" relates to the World Health Organization's (WHO) designation of a novel coronavirus outbreak on March 11, 2020 (Cucinotta & Vanelli, 2020).	15
Platform	Platform refers to the use of platform business model and growth strategies.	22
Price Value	Price value is the perceived value for money associated with operating an online share trading account.	17
Prime Age Group	The prime age group is defined as those between the ages of 26 and 56 who have a bachelor's degree, are employed, have a high earning capability, and have excess disposable income.	13
Product Evolution	Product evolution is the progression of a product in terms of features and maturity level.	21
Social Influence	Social influence is defined as the direct or indirect influence from family, friends, and peers, towards the adoption of online share trading.	40
Trust	Trust that the online share trading service providers are appropriately regulated and that they will treat customers fairly and deliver on their promises.	26

The thematic maps for each theme can be found in APPENDIX G .

4.3.5 *Results*

This section discusses eleven themes including a section on basic financial literacy. All participants are assigned numbers to protect their anonymity.

a. ***Internet adoption***

Table 4–32 Internet adoption sub-themes

Themes	Sub-themes
Internet Adoption	Digital revelation, internet access, costs of access, generational preferences.

Respondents suggested that the digital revolution was the foundation upon which OST adoption is dependent. The rise in connectivity at home and via mobile devices was highlighted as the critical catalyst leveraging the digital revolution. This view was carefully expressed by P2, *"…obviously the biggest driver is obviously digital adoption as well as access to low-cost internet."*. It was indicated that while internet access is becoming more widespread, the high prices connected with mobile internet connections were a deterrent for some people. According P3, *"Access to data would be one of the things where people don't want to be online. It's still expensive to access data…"*.

A prevailing opinion was that younger people who grew up in the internet era find it easier to utilise and consume digital services than older generations, who must learn to consume well-known services in a new way. As a result, it was felt that for older generations, the requirement to learn new ways of consuming or interacting with services via internet-based channels created artificial adoption hurdles. In the context of OST, P1's view was that *"…I think a lot of the older generation when they started investing and when they were at their peak earning careers etc. There wasn't online trading."*. While these hurdles could be overcome, it was emphasised that, they encourage older generations to prefer familiar methods, channels, and products. The digital divide between young and older segments of the population was said to have resulted in generational preferences, with young people able to adopt more digital services with ease as they become available. On generational deference's, P1 said, *"And then this newfound excitement online thing came and they kind of missed it to a degree. But I also think it is to a degree at a technical barrier where you know the young kids are to them, mobile phones, tablets, computers, websites are just completely second nature."*. P1 went on to say, *"… whereas person in there you know, late*

60s, 70s, whatever the case may be, they still find the Internet not necessarily difficult, although in some cases but actually just a little bit daunting. And I know I've said to some older folks who look at the websites, and I think they're a thing of beauty and a ton of information and they just like movement. This is terrible. Can I just phone somebody, it's like no, you can't phone somebody…".

A view was voiced that a fundamental tenet of the internet is that it was the great equaliser that democratises access to information and provides anonymity for online transacting. This view was captured by P1 saying *"… I really thought that one of the whole points of making it online and the like is the democratisation of it…"*. It was felt that this tenet did not materialise for (1) those who cannot afford the high costs of internet access (especially mobile internet), (2) and the older generation who faced challenges due to technical barriers.

These results offered insights on why the effort expectancy hypotheses (H1 and H2) from phase one were not supported. The majority of the study's participants came of age during the digital revolution (57% of participants are between 26 and 45 years of age). They were accustomed to using digital services and switching to or adopting new technology such as online stock trading was thought of as second nature to them. There was consensus that the ease of using new technology was no longer a factor due to the similarity and maturity of design techniques and approaches of the technologies.

b. ***DIY Investing***

Table 4–33 DIY Investing sub-themes

Themes	Sub-themes
DIY Investing	Rising interest in markets, public share offering, poor investment performance, high costs, reduced barriers to entry, quality of service, market volatility, irrational investments.

A common sentiment was that a serendipitous mix of events culminated in a rise in individuals taking an interest in the stock market and deciding to manage their share portfolios. Demutualisation and black economic empowerment share offerings, it was stated, introduced new shareholders resulting in higher stock

market awareness. According to P3 *"…there was a lot of demutualisation as well as state owned entities actually going into a private space where people were being given shares...masses opted for SASOL BEE Share Scheme…. Vodacom BEE share scheme."*.

Some respondents felt that poor performance of investment products, like collective investment schemes, combined with high costs associated with such products led some investors to look for alternative financial products to utilise with the hope of getting better returns at a lower cost. According to P5, *"…It's a bit of the revolution against the status quo..."*. It was assessed that the parallel drive of simplifying access of the share market through the development of OST platforms, which offered tools and services to help aspiring investors access the share market at considerably lower costs, attracted investors disillusioned with previous investment products. The underlying theme from the views expressed was that OST platforms reduced barriers to entry into the market in several ways: low capital requirements to open and operate an account; easy to use interfaces; improved access to market information; demystified financial market terminology and simplified language; and awareness campaigns to highlight the benefits of participating in the market.

According to P1, *"…it's partly because we've almost made it too easy, right? Your FICA requirement is a, you know, an ID number, a selfie, and an address, and then you deposit 100 Rand…"*. P2 expressed a similar view regarding one of the service providers who is driving change in the market *" I think EasyEquities have done good work in the sense of lowering those barriers to entry, so I do think that will change and you will find it a little bit different, as the younger generations of the demographics have access to platforms and portals with the likes of fractional ownership and that definitely is a growing trend that I'm seeing …"*.

A different was view was presented that some investors were nevertheless ready to pay a premium for a higher quality of service, meaning OST rise and focus was not purely on offering the lowest price in the market. According to P2 *"…most of the time people will even consider paying a premium if they are comfortable with the service levels that they get."*.

Almost all participants emphasised that extreme market events, like a sharp rise or drop in share prices of known companies, drew investors hoping to capitalise on the unfolding events. It was thought that mainstream media coverage of the rise of technology companies and the wealth accumulated from earlier investors, attracted investors hoping to catch the next wave. While most of the technology companies are based offshore, it was believed local OST providers offering access to the market where these companies trade, benefited because those investors will inevitably invest in local markets. According to P4 *"…volatility. I think look I mean especially when 2020 hit, there was an explosion that happened in online share trading and that was worldwide…"*. That observation was shared by P1 referencing the price movement of a well-known local company, *"We saw shares likes SASOL at 20 Rands, etc and that obviously had a so a huge run of people into the market."*. P1 went on to say, *"Everyone wants to go buy Tesla or Apple or whatever, and well, you can, it's easier now.".*

It was stated that while improved access to the share market has arguably benefited some investors, especially those investing time in familiarising themselves with sound investing approaches made possible by the abundance of information on the internet, some investors' experience had been negative owing to irrational investment approaches and lack of understanding market dynamics. According to P3 *"…what we found is that I think there's a lot of people who are saying that actually, I don't want to be in the classroom. I want to learn at my own pace. I'd like to do my own research… So once they get into that space, people are actually doing the research. People are going into your YouTube and people are actually interested in how I trade."*. This approach is different to the observation by P4 on why some people invest, *"…I mean, the one is being the youth are more grab pulled towards it because they've all seen the Instagram posts of the multi-millionaires…"*.

These findings offer insights relating to the price value hypothesis (H8). When it came to adopting OST, it was felt that a combination of favourable market access pricing and the ability to take control of one's share portfolio in the hopes of delivering better-than-market returns, were critical elements for individuals. It appeared that disappointment with performance and costs of traditional

investment products may have played a role in customers moving away from them towards OST, because of the perceived poor price value of those products.

c. *Gamification*

Table 4–34 Gamification sub-themes

Themes	Sub-themes
Gamification	Mobile application economy, financial market simplification, entertainment, irrational financial decisions.

It was asserted that the rise of the mobile application economy brought with it a slew of different innovations to user interface design and engagement strategies in the form of gamification. This approach, it was stated, was adopted by OST service providers, who integrated elements of gamification into their product and service offerings. The gamification of OST is thought to have reduced the barriers to entry because it simplified financial market constructs, thus appealing to a new market segment, particularly young people who grew up with electronic games. P2 observed how gamification was implemented on one share trading platform, "*So, when you do your first trade, there's a bit of a fireworks and confetti that splashes on the screen that makes you excited about doing your first trade or if you bought your first, CFD, they'll give you some more other badge or that so that whole gamifying your experience has promoted and attracted maybe a younger market.”*. P5's view on how investors interacted with the gamified application was that *“… I mean now you get a fancy app, it's online trading, you're seeing charts. You're trying to analyse it, beat, beat, beat some price action. So, I also think it goes to the time and the psychology of the time.”*.

While acknowledging the positive benefits gamification brought to OST, there were unforeseen consequences that must be considered. A view was expressed that on gamified share trading platforms, some users prioritised pleasure over profit, thus making it a viable alternative to online gaming. The highs and lows associated with gaming, combined with the reduced need for users to understand financial markets fundamentals, is purported to have turned some users into gamblers. P1 expressed this observation saying *“It's when they start to lose*

consistently and then they run out of money. No problem, they refund. They put some more money in... At some point of course, either they have to face the stark reality that they they're getting cleaned out here, or the even starker reality that they simply don't have any available funds left to refund the account…". This view was similar to P3's observation that *"…people want to still enjoy the trip even if they are losing..."*.

The rise in gamified share trading platforms is thought to have effectively created an environment where users can deploy their financial resources, without clear and defined goals advocated in sound investing. According to P3 elaborating on the view above *"… most of these providers have actually used gamification … as one way of creating that comfort with people. And it is in that space where you find that they want to make it fun so that people can become interested and be hooked…what is the fun in it when you're losing money. But I guess people want to still enjoy the trip even if they are losing or enjoy the trip while they are making money."*.

The deployment of capital without clearly defined performance was hard to understand or explain for some participants. P1 said *"Well, I mean again, an amazing discovery, because obviously the stock market is there about you Do-it-yourself to beat the index and you do it to ultimately create wealth. Maybe it is that almost gamification..."*. P2 said *"That's strange… I can't think of any other reason why somebody would want to sort of invest in markets if that's not their primary reason. I mean there must be some other reason in terms of affinity to a brand or affinity to a company or anything of that sort or ESG investing. Hey, but that's an interesting one…"*. P4 had this to say "*... Oh, that's a tough one. We always teach people that you're supposed to set goals. I don't know. Maybe guys going to online share trading because they think they can just make quick money…*".

These findings offer insights on why the hedonic motivation hypothesis (H7) was supported. Gamification appears to have had an influence on the design and engagement strategies of OST product offering, making it enjoyable and entertaining. The gamification of share trading platforms provides additional context on why the performance expectancy hypothesis (H5) was not supported.

It seems like some users focused on non-financial incentives as their primary goal. The oversimplification of financial markets concepts may have led to diminished adoption of sound investing principles.

d. *Social Influence*

Table 4–35 Social influence sub-themes

Themes	Sub-themes
Social influence	Trust, personal experiences, online communities, customer acquisition, social aspiration, fear of losing out.

Social influence emerged as a double-edged sword rife with contradictions. It was highlighted that the trust placed in close social circles to share wisdom and insights that can positively help one develop and grow, is deeply rooted.

The personal testimonials about an experience or achievements from using a service or product is believed to carry more weight than any publicly available information, because it creates a sense of shared destiny. Some views were expressed that social circles are used to verify and validate one's thinking about a wide-ranging topic from investment ideas and strategies to which platforms or service providers to use. P3 said, *"…I think maybe it's because people want to hear from somebody. And they want to hear testimonials. They give them a trust factor."*. This view was shared by P2 and P5, who said, *"...you know a certain provider or player that you would want to engage with, but the fact is that when our friend or family gives it that rubber stamp… if it works for this person whom I trust I can, I can go along the journey…"* and *"... it's about confidence knowing that somebody is in the same boat as you and has the same amount of risk on their table. It's easier to adopt…"* respectively.

While social circles are commonly characterised as peers, family, and friends, it was pointed out that the term has expanded to encompass members of online communities in the internet era (often formed on social media networks). It was suggested that the broader social circles are often relied upon when one has

challenges or issues with the service provider's quality of products. The sense of community trust was thought to take precedence over brand equity trust.

This view was eloquently expressed by P1, who said, *"I see people who've got a problem with a with one of the online brokers …. They don't go to the broker; ... They go into social media. They go to Facebook. They go onto Twitter, and they find support from the community rather than the organisation… whereas your community on social media who you might never have met these people and half of them are using fake names. There's a much stronger sense of community and trust."*.

Certain OST service providers were said to rely on their existing clientele for client acquisitions because they recognised the importance of social influence. From this approach, it was inferred that service providers could expand their client base at a low cost by delivering a high-quality service and incentives (both monetary and non-monetary) to current clients. P1 said, *"…that their single biggest driver of new clients is existing clients to the point that some don't even bother marketing, they just let the existing clients sort of be that marketing..."*. P2 expressed a view from the client's point of view by saying, *"...I can go along the journey and also, that almost becomes an ambassador for the brand that service provider."*.

It emerged that the wisdom of crowds is not without direct benefit. It was seen as a great learning platform to learn from experienced and knowledgeable community members. The challenge, as it was pointed out, was distinguishing between the imposters and the experienced members of the community, because, as P5 puts it, *"Traders like talking, and they like talking about their successes more than their losses."*.

A common view was that aspiration for social status often had a detrimental influence leading people to make irrational and often uninformed decisions with predictable and undesirable outcomes. The need to be seen to either understand the technicalities of the market or to have had profited from topical market events, was thought to be behind why people invested without understanding. People invested for the sake of higher social standing. P2 explaining a client's

experience, said, *"…he absolutely had zero idea about stock markets, how it works, anything of that sort. But because he used to sit around speaking with his friends that were talking about MTN's and he felt that he wanted to own a couple of MTN's."*. P4 explaining why some people invest *"…pulled towards it because they've all seen the Instagram posts of the multi-millionaires."*. This ease with which someone can flaunt their riches or material things, frequently accompanied by a story about how they got there (instant millionaires), was said to lead social circle members to believe that those individuals were knowledgeable and that their strategies had been tried and tested.

Fear of losing out on the next significant investment recommended by friends or market mania was alleged to frequently lead to involvement in investment schemes with little comprehension of the dangers and rewards involved. According to P1, *"… maybe it's also some of the FOMO where you know you see your friend having fun doing something that's new …. It's around role models around he's having fun. I also want to have fun. He's happier than me because he's got a stockbroker account. Therefore, I want one as well."*. The same view was expressed by P2, who said, *"… let's call it social investing. If my friend is buying SASOL and I don't know a thing about SASOL, but because he told me to buy it, I am going to just to close my eyes and buy it."*.

These contradictory findings offered insights into several findings from the study's quantitative analysis phase. Support for the social influence hypothesis (H6) revealed additional insights into how social influence as a complex construct directly influences individuals' behaviour towards OST, while also directly and indirectly influencing several constructs examined in the study. The lack of support for the facilitating conditions hypothesis (H3) is clarified by the role of community support when faced with challenges. The lack of support for the performance expectancy hypothesis (H5) disclosed the insight that some people use OST not to improve their financial status, but to improve their social standing. Additionally, following the actions of influential community members without understanding the risks and rewards offered greater insight into why the H5 hypothesis was not supported. To have a positive performance expectation, it is believed that one must understand and comprehend the potential risks and

rewards of setting financial objectives. Finally, the findings added more context to why the H4 and H9 trust hypotheses were validated. Trust in a service provider, that came from people one trusted, was thought to have a powerful and beneficial impact on the overall outcome.

e. *Female participation*

Table 4–36 Female participation sub-themes

Themes	Sub-themes
Female participation	Traditional roles, gender stereo types, low risk appetite, group schemes

Some respondents were of the view that the traditional roles of women as primary caregivers and men as providers, had resulted in historical inequities in stock market exposure and understanding. It was alleged that the responsibilities of running a household left many women with little time to learn about the complexities of managing a stock portfolio. As a result of this series of events and circumstances, some respondents believe women's understanding of the stock market's potential benefits is still relatively low and difficult to overcome. According to P2 *"…I must say I think it still plays to the traditional role of a female in a household. You know they'll obviously take the responsibility of becoming home makers to a larger extent. And then I think also to some to some extent. It's also just education…"*. This view is echoed by P1 who said *"…then of course the final sort of a sort of gender stereotype is, you know, the household often the finances are the domain of the male, whether he does it well or not, it's not the relevant point, but it is at the domain of the male and sort of, you know, the woman must look after the child and keep the house clean, and the man will look after the money…"*. P7 added that *"I think the financial industry is saturated with men due to the fact that obviously going back a few decades, women weren't allowed to have the jobs that they have now, which obviously plays a part in females as having less experience and this knowledge of financial markets as opposed to men."*.

It was highlighted that the irony of women in financial markets extended beyond individuals managing their share portfolios. It was pointed out that women were

underrepresented in the broader financial markets, which was surprising considering that women tend to make better money managers. According to P2 *"…risk appetite, whereas you know from the participants that we do have that are female… still prefer very much to take a very cautious approach to investing so that element of risk in stock markets do drive them away."*. P1, highlighting the hidden missed opportunity to society by having less women in financial markets said, *"…Interestingly, anecdotally, you know, typically, I think women makeup better traders and often better asset managers, but they're not very representative in industry either, so it is a male dominated…"*.

A view was expressed claiming that when it comes to investing their money, most women tend to prefer low risk (but often high costs) financial products recommended to them by financial advisors or money managers. P6, sharing her market and personal experience, said *"…I feel like as a woman, and especially as a young woman who started working, you were just told to get an RA and you were told to put this money in here and then you did that, and you left that as that when someone else comes along and starts talking to you about trading and investing your money. You honestly don't know anything about it, and I don't think females are inclined to go and do the research on trading and investing."*.

A second shared observation was the increased participation of women in group investment schemes. It was accepted that the concept of group schemes is logical, considering possible economies of scale. There was a visible lack of basic financial literacy in the structure and operations of such schemes, according to P3 who said, *"The group savings investments are more on the women… They loan themselves money from the scheme. And with that they charge 20%. So, you loan yourself money and you charge yourself 20% to pay back… But I'm like, but you are short-changing yourself."*.

These findings offer insights into the observed low participation of females in the study. The high skewness in the data, with men representing 68.5% of participants, was not an anomaly but a reflection of observed behaviour in the market and society.

f. ***Price value***

Table 4–37 Price value sub-themes

Themes	Sub-themes
Price value	Trading costs, young investors, lower capital requirements, customer unhappiness, marketing influence.

According to a view from participants, trading costs have historically been one of the entry barriers into the stock market. It is now thought that trading costs have been coming down over the years. As a result of lower trading costs, combined with slightly redesigned and simplified product offerings, new investors are believed to be attracted to the stock market, especially young investors with limited capital. According to P2, the market was *"…crowded out in just in terms of high barriers to entry. So, you probably needed at least 25,000 Rands in terms of free cash flow to start up a broking account otherwise it did not make sense."*. P4 shared the sentiments saying *"...and I mean then the cost, the cost as a percentage for your trading is just too high on your small amounts. I mean, you're coming in with 1000 Rand. It's costing you 50 Rand I. I mean, that's already 5%..."*. The changing landscape was noted by P1: *"We've seen the minimum amounts decrease. We've seen the like of EasyEquities who offer no frills, but they also offer no admin fee, no minimums…So suddenly, instead of needing, you know 10, 15, 20 thousand Rands to do an economical transaction, i.e., a cost of under 1% all inclusive. Suddenly you can do it for 100 bucks."*.

It was highlighted that lower trading costs are often confused with price value or value for money, which was not the case. While customers are focused on cost optimisation because the costs of investing impact the final investing and trading outcomes, a view was expressed that not all customers are looking for low-cost offerings while searching for value. Some respondents said certain customers are willing to pay higher fees for value-added services (i.e., access to quality research) or higher quality of service (i.e., access to quality advice).

P3 expressed the importance of costs saying, *"…in the field where you are investing. Everybody is just looking at cost. No matter what because that will*

determine the true outcome at the end of the day. But also, with that there is that perceived value of it. If this thing does not cost me more than what I am making, then it's the right thing to do.". P2 offered a different perspective on price value and costs saying, *"…most of the time people will even consider paying a premium if they are comfortable with the service levels that they get. They happy with all the other interactions that they have with the service provider.".*

In the opinion of some participants, price value is linked to customers' disillusionment with traditional investment products, which often attracted high costs yet failed to live up to investment performance, leading to some customers concluding that they do not offer value for money. This view was well captured by P5, *"It's a bit of the revolution against the status quo... I feel like its people being disgruntled with the way financial services is set up that you'd rather do it on your own, even if you don't know what you're doing, or you don't even have a goal in mind…. A person is just like at least it's out of the hands of Momentum, and they're not charging me 2% a year."*.

Marketing efforts of OST providers were thought to have created a narrative in the market that they offer the best value for money without defining it. These marketing efforts were believed to have caused value for money to become a subjective measure in the customer's mind, subject to change based on various factors that may or may not be linked to the need to be effective as an investor or trader. P4, in summarising the industry approach to price value positioning with customers, said *"We sell that as well, so that's that, I mean, one of the things we do, every single broker does that as well. We never we, I don't think there's a broker in the country that says we the cheapest, but everybody says we have the best value, so brokers have obviously created that perception already."*

These findings offer insights into why the price value hypothesis (H8) was supported. Value for money is a crucial element that was top of mind for most investors, and its impact on the final benefits of any investment cannot be underestimated, according to participants.

g. ***Prime age group***

Table 4–38 prime age group sub-themes

Themes	Sub-themes
Prime age group	Access to disposable income, qualification, earning potential, internet familiarity.

Participants claimed that OST service providers deliberately concentrated their marketing and customer acquisition resources towards individuals over the age of 30 with gainful employment because they were more likely to have access to disposable income, which could be deployed in the share market. P4 said *"…we target that age group. You know because we know that age groups got much has got better disposable income."*. P2 held a similar view, saying *"I do think why it becomes more obvious in the 26 to 55 categories. Obviously, just your availability of disposable income..."*.

In South Africa, it was alleged that obtaining desirable employment is correlated to academic qualifications, with a bachelor's degree being the minimum needed in most occupations. Individuals with bachelor's degrees were said to be more likely to have higher confidence in taking up the challenge of learning how to invest on their own using online resources. P1 believed *"…if you don't have a degree of a sort, your odds of being employed or markedly lower, and maybe it's just a function of economics, don't have the Rands and cents."*. P4 expressed the same view saying *"I just think that it's the legacy of South Africa. People with a degree are more successful, earning better salaries than those without a degree."*.

The core demographic is thought to be people between the ages of 30 and 56 who were most likely to be working towards their peak earning potential or advancing their career prospects which would, in turn, increase their earning potential. According to participants, the higher earnings made it conducive to have access to disposable income that can subsequently be invested in the stock market. P2 summarised the points as follows, *"So, as you are becoming a bit*

more mature in your career choices, you might have more access to funds. So, that will find a home in equity markets and online accounts.".

It was noted by participants that this core demographic in question grew up when the internet was ubiquitous, and the mobile application economy was gaining traction, making it easier to adopt and consume digital services than previous generations (Details discussed in 4.3.5a).

The findings offered an additional perspective on the observations in the data, which showed that the bulk of the participants were between the ages of 26 and 46 and held bachelors or postgraduate degrees. Even though employment was not assessed in the survey, the findings suggested an existence of a link between academic qualifications and employability, which in turn enhanced access to economic resources. According to the survey data, the findings also offered insights into why this core group might be using OST at such a high rate. The age range of the core demographic with the average duration of OST use of ten years (from the quantitative survey), makes sense given that the average age of the core is $\pm$ 40 years. This implied that they might have begun using OST as early as 30 years of age, which happens to be the age targeted by marketers, according to the participants.

h. *Product evolution*

Table 4–39 product evolution sub-themes

Themes	Sub-themes
Product evolution	Lack of product differentiation, closed eco-system, new market entrants.

The South African OST product offered by different providers is believed to be relatively homogeneous and mature. According to participants, differentiating features are few and not easily noticeable. The result of the lack of differentiation is market homogeneity and means that the costs of switching between providers is low in monetary terms and effort because one does not have to learn a different user interface and related services. The core services are thought to be viewed as a tool to facilitate effective long investing, or short-term trading and not as a

primary focus. According to P2 *"…the industry has matured it to a sense that everybody is on a level playing field. I mean, you're not getting anything different... Your baseline of services is pretty much a bar here in there, you'll get one or two other cool features, but it's not going to be sort of really differentiating things that will sway you dramatically from one provider to the other."*. P4 supported the P2 observations, *"I mean, there's not much of a difference between everybody you know offering…. There may be one or two features that they want in the platform, but I don't think anybody really is platform specific. They're very much agnostic to it…"*. According to P3, investors are looking beyond *"What the platform does,.."* because *"...it's immaterial and the guys are looking at it from their fundamentals…".*

Strong opinions were shared about the broader eco-system encompassing the share trading that is thought to have established norms and practices, which while effective in an efficient market, was not conducive and open to innovation, thus creating artificial barriers. P2 expressed market challenges by saying *"I think the JSE is also as well as any exchange is always going to be at a bit of a disadvantage if they ever tried to sort of become a player in that space as well. So, if they start everything come right directly to the JSE if you want to open up broking account, I think that will be looked upon very badly by all the market participants that they serve…"*. P3 elaborated on that fact from a different perspective, *"And we haven't seen much of the platforms that actually bridges the gap on like Robinhood kind of, that would bridge that gap. I think to a greater degree you've got EasyEquities that is coming in in there and but also there is still some resistance from the market itself. For instance, if you look at the JSE is not so keen on the EasyEquities model, but the EasyEquities model is getting in the numbers. It's reaching more people and for that also EasyEquities also looked at ok fine you can do share trading."*.

It was pointed out that the entrance of new service providers offering bare bone basic service, with some unique product features, has attracted what is assumed to be mainly younger investors. The simplification of market access (both local and offshore) was thought to have further reduced financial, technical and knowledge barriers embedded within the OST product offerings. According to P2

the environment *"…will change and you will find it a little bit different, as the younger generations of the demographics have access to platforms and portals with the likes of fractional ownership and that definitely is a growing trend that I'm seeing that now you know; you're getting people that are in high school and varsity that are starting to you know, become interested in markets, not necessarily the equity market, but more broadly the crypto market, but the interest in you knows buying or selling an asset for a higher price is definitely becoming more popular between those lower entries."*. P1 highlighted the change introduced by one service provider *"in terms of pricing, for example, you know EasyEquities were the first to come in with a 0.25% no frills type of scenario. There's been some competitors to it, but the competitors are struggling to gain traction compared to EasyEquities. And I think that, again, is that my friends are all here, this is the hip broker, sorry, who are you like, you know, and they haven't come in at, you know someone came at 0 brokerage different game entirely, but if you just come and match the existing."*. P4 added that "*EasyEquities made it. Uh they you know Charles and then decided that they wanted to go and target that below 30 the age group and the only time I mean this year that they made a profit because while they had what 300,000 plus clients."*.

These findings partly offered additional insight into why the facilitating conditions hypothesis (H3) was not supported with the market maturity viewed as the primary reason. It was perceived that users were not influenced to adopt OST by facilitating conditions existing in the market because the focus was on effective investing, not the use or operations of the platform itself.

i. ***Trust***

Table 4–40 Trust sub-themes

Themes	Sub-themes
Trust	Intermediaries, regulatory compliance, fear of scams, brand equity, community trust, superficial trust.

OST service providers are said to be intermediaries who connect their clients with stock exchanges in the hopes of finding a counterparty with whom they can trade

at a fair price. Users of such services, it is contended, require trust on numerous levels including service providers must be regulated and adhere to local laws and regulations designed to protect customer rights. In addition to adhering to the laws, they must constantly be faithful to their word that they will not mismanage client's assets, and they must protect customers from scams on their platforms. According to P2, local brokers are favoured because *"You know that there are recourse and remedies that you can get based by on the FAIS Act as well as you know you've got the FAIS ombudsman or some legal channel to feed through the JSE and raise your query or complaint."*. P3 expressed similar views by saying *"There is the I'd call it the sanitary issues where you just need an organisation must be trusted, must be a registered entity that is being that looks like it will be around when I need my money. And I can actually go and complain if anything is untoward…"*. On longevity of the brokers, P4 said *"We are dealing with people money, they need to know it's, is safe…. I mean, this is especially when it comes to investing. It's a long-term gig. And I mean that means that you got to make sure that the person that you're dealing with will be around for the long term."*.

It was intimated that due to the rise in online scams, especially in financial services, customers relied on known local brands as the providers of choice (often universal financial services providers). The brand equity of local providers, thought to be leveraged to provide access to offshore markets, even though there are much cheaper platforms that offer access to those markets. P2 expressed the risks of offshore providers saying *"…with these international providers that are domiciled in all these crazy jurisdictions it might be a little bit harder to find some recourse with them. So, I think that just terms of you know, I trust Standard Bank because I see the big blue brand and they've got an office that I can go do in cause a ruckus in the foyer does give people some sort of comfort that there's a warm body that they can engage with in the events that they need to."*. P1 concurred saying *"…because people are nervous about going to an institution offshore, even if it's you know Vanguard or, you know, one of the big brand names. That you know truthfully, they can come to the EasyEquities offices or Standard Bank or PSG or ABSA and picket at the door…"*.

While the trustworthiness of the service provider was acknowledged as critical by to participants, they thought some customers did not invest sufficient time and effort in verifying the legitimacy of the service provers beyond trust based on referrals or superficial presentation. This reservation was expressed by P1 saying *"…truthfully, I think there's very little research being done, whether they are being trustworthy..."*. Based on experience with an investor who had fallen victim to a scam due to lack of research, P1 said *"She had decided he was trustworthy, yet as far as I could work out, she had that done no research in it except for perhaps some friends who had said to her hey, you know this guy is making great money for you, et cetera, et cetera."*. Lack of attention to detail was also highlighted by P3 who said, *"Because the guys just don't go into the details of what it is that they put their money in and then the next thing they don't understand what they're doing and then the money is gone."*.

Social or community trust was thought to significantly influence the choice of service provider, more than the marketing efforts of the service provider itself. Surprisingly, while institutional trust was noted as a prerequisite and critical, it still ranked behind social and community trust (which can sometimes originate from unverifiable sources) (Details discussed in 4.3.5d).

These findings presented additional insights into how the various components of trust contributed to the trust hypothesises (H4 and H9) being supported. At their core, OST providers, including other financial service providers like banks, are believed and sell trust as their primary product.

j. *Pandemic*

Table 4–41 Pandemic sub-themes

Themes	Sub-themes
Pandemic	Social conditions, economic conditions, lockdown, alternative entertainment, alternative gambling, source of income replacement.

The SARS-COVID-19 outbreak, which resulted in a global pandemic, produced what is thought to be unprecedented social and economic conditions. It was stated that people were confined to their homes and had minimal social opportunities. Because of the government's restrictions, many people are believed to have turned to OST, which they could conduct from the comfort of their own homes. It is alleged that OST was employed as an alternate kind of entertainment, as well as a source of income. According to P1, *"…I think during a lockdown period when folks couldn't go and play games or outside or bet at casinos, they kind of move to the Robinhood's of the world…You know people couldn't get to the casino, so they were literally gambling on the on the stock market rather than the roulette table or the or the slot machines…"*. The similar view was expressed by P5 who said, *"I mean since lockdown a lot of people, a lot of people have been trying to find escapes in terms of like you know you have cooped up in the house and there's gaming... It really it's like it's almost a game. I mean you look at our app. It looks like a game it's got bright colours, there's stuff flashing over the place, so it almost feels like you're playing a game and that's how I think investors are looking at the market and online trading right now. It's an escape for them as well from a normal day to day lives."*.

Participants observed that some sectors of the economy were more severely impacted than others due to the lockdowns, resulting in historic job losses. It was pointed out that highly qualified professionals who were unable to find work turned to the stock market as their sole source of income. This point was well illustrated by P2 who said, *"…pilots that couldn't fly during lockdown or still can't that had to take an alternative career choice and the stock market or trading becoming, an investor or trader. Short term trader it's quite easy to access…"*.

Because to low entry barriers (capital and knowledge) and an abundance of tools, online information, and service providers offering wide-ranging access to different stock market products and services (Details discussed in 4.3.5b), participants believed that becoming a stock market trader was effortless for willing, focused, and committed individuals.

Although the economic and social constructs were not incorporated into the conceptual research model, the pandemic's impact on the adoption of OST, as

intimated by the participants, cannot be overlooked due to the potential impact and possible lasting influence in the short to medium term.

k. *Basic financial literacy*

Table 4–42 Basic financial literacy sub-themes

Themes	Sub-themes
Basic financial literacy	Unexpected, gamification, social influence, pandemic

The subdued nature of the role of basic financial literacy was highly unexpected and challenging to explain, according to participants, because of its relevance and importance when it comes to the adoption and use of any financial product, especially OST. Participants thought the diminished role could only be attributed to a tri-factor of the rise in gamification (Details discussed in 4.3.5c), the extreme role of social influence (Details discussed in 4.3.5d) and probably the pandemic (Details discussed in 4.3.5j). It was felt that gamification reduced the need to know the technicalities of the market. At the same time, it was also thought that social influence focused on social status as being more important than understanding the action itself and the associated risks. The unprecedented economic and social conditions due to the pandemic is believed to have meant people were forced to look for different ways to spend their time or replace the lost income sources.

l. *Platform Business*

Themes	Sub-themes
Platform business	Technology, mobile application economy, resistance to change, regulatory fears, opportunity for new products.

The phrase platform business model generated emotive and passionate responses, often ambiguous and contradictory. Most respondents' default thinking mode leaned towards associating anything related to platform, with the

evolution of technology platforms which is not always the case, revealing a deficiency of appreciation and understanding of the platform business models and strategies. P1 spoke of *"…changes to design usability to bringing in things such as HTML5. I see very little of that and its usually big leaps."*. P4 approached the platform strategies and business model as follows, *"our platforms are very similar, but the one thing I have noticed I mean which, especially with us with the mobile app that we've got."*. P3 highlighted the possible confusion in the market saying, *"I think a lot of people are thinking that they know what platform means, but don't know what platform mean."*.

The development of mobile smartphones which is believed to have given rise to the mobile application economy, was acknowledged as having played a significant role in the adoption of OST. The ease of use associated with the mobile applications for share trading was credited by respondents for having removed previous barriers to stock market participation.

According to P1, *"More recently, we've had the advent of apps on your cell phone in your tablet, and that's just made it easier and made it more accessible, made it less scary. You know, you phone you're broker you tell them to buy a share."*. P2 supported a view that *"…access to a smartphone or a device or some sort of online portal that's going to help people access online platforms…"*. P5 used an example to demonstrate the benefit of the mobile applications *"I was talking to the game ranger explaining exactly what we do, and his questions were isn't it difficult to get into and I just pulled out an app and I was like it's as easy as downloading an app on Play Store and with 2000 Rand you can start going and for me had it not been for the platform. I don't think we would have seen a growth in our market that we are seeing right now."*.

In South Africa, participants said true platform business models and strategies are still in their infancy. In the broader eco-systems, incumbent service providers were perceived to be resistant to change, which resulted in limited business model innovation incorporating elements of platform thinking (Details discussed in 4.3.5h).

According to P2, *“There is a platform play that's within the online share trading space, and I think that still has to play out and venture out whereby you have two sides of coin always interacting on the same platform”*. P5 had a firmer viewer saying *“The platform business model has actually grown the market more than then one would actually think. I mean, I haven't done a study or even or any sort of modelling on it, but for me it's the ease of access. You know the markets have always seemed so inaccessible to the to the normal man on the street having to explain to somebody what you do and how easy it is.”*. The minimal use of platform business model thinking was limited to pricing innovation to attract young investors with limited capital.

There was a perception by participants that fear of regulatory scrutiny may have played a role in the share trading market's lack of innovation. According to P1, *“…there's a concern in the industry to push it too hard because of potential backlash from users which could then result in you know scrutiny from regulators.”*.

There was an acknowledgement by participants that South Africa has an untapped market of potential investors who could be attracted into the stock market by a different value proposition than what is now available. The requirement for a super financial services aggregator to meet end-to-end investor needs was considered as the ultimate differentiator, if not a disruptor, by some participants. Because of the scale of the South African market, there was a belief that the first mover with a differentiated offering would likely dominate the chosen segment. This point was well summarised by P2 who said “*The only other system platform plays that's being very broadly spoken about among all players is having everything integrated as a one stop financial services shop. So, you must come to me for your wealth management. You must come to me from your retirement planning. You must come to me for your stock broking. You must come to me for your banking, all those things are commingled as the one stop shop, and I think that is pretty much the Holy Grail for every single big financial institution.”*.

4.3.6 *Summary*

The qualitative analysis enriched the quantitative results by incorporating industry knowledge to offer insights into observed, unexpected and contradictory quantitative analysis results.

The gender imbalance observed in the study participants profile was not an anomaly; it reflected market participants where women are underrepresented. Gender stereotypes, low-risk appetite, and women's traditional responsibilities as primary family carers, seems to contribute toward women's lack of awareness and low adoption of OST. As a result, most women use money managers as their default option.

A combination of a high number of participants having at least a bachelor's degree, currently using OST, and being between the ages of 26 and 46 years could be of a function of South Africa's economic structure. Individuals with at least a bachelor's degree are thought to be more likely to have employment, making them more likely to have access to disposable income to invest in the stock market. People in the age group are believed to have grown up as the internet and mobile device adoption were rising, making it seamless to access the stock market using OST because they consumed digital services as their default option. These reasons offer insights into why the study participants' profile was skewed towards this group, and it is in line with the observed investor's profile in the market.

The impact of social influence on OST adoption emerged as one of the most significant and multi-dimensional factors. Social circles and online communities offer alternative channels where one can seek help and learn from experienced individuals. Unfortunately, the strong trust within social circles and communities can often influence individuals to participate in financial products without understanding the risks and rewards, leading to undesirable outcomes. Some service providers were thought to have recognised the value of social influence and used it as their principal source of new clients. The complicated, and often contradictory effects of social influence offered additional insights into why the hypotheses of social influence (H6) and trust (H4 and H9) were supported,

whereas the hypotheses of facilitating conditions (H3) and performance expectancy (H5) were rejected.

The application of gamification techniques in product development and user engagement has resulted in a fun and easy-to-use products and services. Gamification eliminated the need for users to familiarise themselves with financial markets concepts before using OST platforms. Gamified OST platforms distracted some users from the core purposes of investing because they acted as an alternative to online games and gambling. These findings added more context to why the hedonic motivation hypothesis (H7) was supported, whereas the hypotheses for performance expectancy (H5) and basic financial literacy (H10a-i) were rejected.

A combination of economic events, poor investment product performance and high costs associated with traditional investment, increased investors interest in taking control of their investments by investing directly on the stock market using an OST offering. Increased market knowledge and access to market information combined with the need to extract maximum value at a fair price, were a further catalyst for adopting OST offerings. These findings offered potential clarification on why the price value hypothesis (H8) was supported.

Lack of differentiation and high product maturity in the South African OST, reduced switching costs. Users' decision to adopt any platform was not dependent on service providers having additional support or possessing resources different from other providers. This finding offered a supplementary explanation on why the facilitating condition hypothesis (H3) was not supported.

Trust in the regulation of the service providers and working with known brands were strong drivers for the adoption of OST. While service providers were trusted to provide the services they advertised, users preferred community support when they experienced issues with the service offering. These findings provided additional context to why the trust hypotheses (H4 and H9) were supported.

The unprecedented impact of measurements implemented by governments to contain the spread of the SARS-COVID-19 outbreak, created unforeseen social and economic environments. Restricted social settings forced individuals to find

other means of keeping busy and entertaining themselves with OST was seen as a convenient tool because of the ease of access and low barriers to adoption. Share trading also offered a convenient and accessible alternative for individuals who lost their source of income.

The rejection of the basic financial literacy hypotheses (H10a-i) was unexpected and challenging to comprehend. The combination of gamification, social influence, and the pandemic offered a plausible reasoning for why basic financial literacy played such a diminished role in adopting OST.

Platform thinking was associated more with technology than with the business model. The use of accurate platform business models and growth strategies is still in its infancy. Lack of innovation embracing platform thinking could be attributed to protectionism by incumbent members of the share trading eco-system, and fear of regulatory scrutiny. The South African share trading is acknowledged to present an opportunity for innovators who are willing to fully embrace platform thinking to offer a differentiated service and product offering which can attract customers currently not in the market.

A summary table of the explanatory themes linked to the research hypothesis and control variables is presented in Table 4–43 and Table 4–44, respectively.

Table 4–43 Summary of research hypothesis and explanatory theme

Construct	Hypothesis	Explanatory theme
Performance Expectancy	H5	Gamification and Social influence
Effort Expectancy	H1 and H2	Social influence, Internet adoption
Social Influence	H6	Social influence
Facilitating Conditions	H3	Social influence and Product evolution
Hedonic Motivation	H7	Gamification
Price Value	H8	DIY investing and Price value
Trust	H4 and H9	Trust and Social influence
Basic Financial Literacy	H10a-i	Gamification, Social influence and Pandemic

Table 4–44 Summary of control variables and explanatory theme

Control Variable	Explanatory theme
Gender	Female participation
Age	Prime age group and Internet adoption
Qualification	Prime age group and Internet adoption
Current use of OST	Prime age group and Internet adoption

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

The findings of the research hypotheses testing, and the themes identified in the explanatory analysis phase are discussed in this chapter. The validity and efficacy of the research model to predict behavioural intention was intergraded with demographic control variables and moderated with basic financial literacy. The research base model's explanatory power for behavioural intention towards adopting online share trading (OST) measured by R-square was 49.7%. The model's predictive power improved to 54.1% after including control variables. The inclusion of basic financial literacy as a moderating variable improved the R-square value to 65.5% for Low BFL and slightly decreased to 53.1% for High BFL. This implied that the model could account for a fair amount of variation in the intention to adopt OST. The UTAUT2 model could explain 44% variance of the direct effects on behavioural intention and 74% variance when including other interactions in the model (Venkatesh et al., 2012). Compared with the UTAUT2 predictive powers and recommended values in literature, the study's variance in explaining the direct and direct effects towards behavioural intention is acceptable (Alalwan et al., 2017; Venkatesh et al., 2012).

5.2 H6: Social Influence will positively influence customers' Behavioural Intention to adopt Online Share Trading.

The hypothesis that social influence (γ=0.15, p = 0.004) positively influenced behavioural intention to adopt OST is shown to be true. This result is consistent with Venkatesh, Thong, and Xu (2012). Social influence is similar to subjective norms proposed by Ajzen (1991) in Theory of Planned Behaviour (TPB). Social influence and subjective norms are well-established constructs in literature as good predictors for behavioural intention to adopt OST (Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013).

The explanatory analysis reveals several sub-themes (trust, personal experiences, online communities, customer acquisition, social aspiration, and fear of losing out) that could shed light on the role of social influence in terms of influencing individuals' intentions to adopt OST, directly and indirectly through other constructs. Graf-Vlachy et al. (2018) noted that human behaviour in general, and technology adoption in particular, has been demonstrated to be substantially influenced by social influence. According to Lorenz and Buhtz (2017), social influence is a layered multidisciplinary field that can be represented in various ways, including “subjective norm, group norm, social identity, social capital, social network configuration, and critical mass”.

This perspective is supportive of the view from the explanatory analysis phase of the study. The prevalence of social media (i.e., LinkedIn, Twitter, etc.) and communication technologies in society (i.e., WhatsApp, Skype, etc), offer a plausible and viable explanation of why social influence plays a significant role in OST adoption. Social media technologies have made it easy for individuals to share their thoughts, lives, and experiences with those close to them and strangers alike, at an unprecedented rate. It has also become easier than ever for strangers to form online communities around a common cause or area of interest. Service providers are also using the rich data generated on social media platforms to better target customers directly and indirectly through their networks, offering tailored messages and product proposition, thus increasing the likelihood that customers' behaviour towards the said product will be enhanced.

5.3 H1: Effort Expectancy will positively influence customers’ Behavioural Intention to adopt Online Share Trading, and H2: Effort Expectancy will positively influence customers' Performance Expectancy of Online Share Trading.

As shared in Chapter 4, effort expectancy (γ=0.076, $p < 0.34$) is a poor predictor of behavioural intention to adopt OST. This finding was unexpected and contradicted Venkatesh et al. (2012). Effort expectancy is similar to perceived ease of use proposed by Davis et al. (1989) in the Technology Acceptance Model (TAM). Perceived ease of use and effort expectancy are well-established

constructs in literature, as good predictors for behavioural intention to adopt OST (Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013). The finding in this study is not without precedent; Zhang et al. (2012) found no substantive relationship in their study of mobile commerce adoption.

However, the hypothesis that effort expectancy (γ=0.392, $p < 0.001$) positively influenced OST performance expectancy was supported. This finding is consistent with Alalwan et al. (2017). The results from the study are in line with the previous studies, which found that effort expectancy and social influence positively influence performance expectation towards electronic banking (Fedorko et al., 2021). This means customers will have a favourable attitude towards technology use, and believe it is good to have in their lives if they think it is not challenging and it does not involve effort (Davis et al., 1989). This finding is consistent with the study of Oliveira et al. (2016) which scrutinised the adoption of mobile payments where effort expectancy had a meaningful influence on the performance expectancy, but not in explaining the behavioural intention to adopt it

The explanatory study proposes that the effort expectancy hypothesis (H1) was not validated owing to social influence and the accelerated digital advancement, which might have influenced the motives and attitudes of individuals towards the adoption of OST. The lack of support for effort expectancy in the broader social use context is supported by Morosan and DeFranco (2016), who examined customers' intentions to use near field communication mobile payments and found it played no role in customers' intention adoption.

The view that the accelerated digital advancement affected effort expectancy can be looked at through the evolution of technology. Since the start of civilization, technology innovation has been the driving force behind the advancement of human society (Sima et al., 2020). During the industry 4.0 era, technological progress considerably influences consumer behaviour and expectation (Ahmad et al., 2020).

While customers linked the effort of using OST with the expected performance (i.e., getting better returns), that did not influence their decision to adopt it. Effort

expectancy in this context can be seen as the investment in research about the share to be traded and not necessarily the use of the platform itself. The evolution of technology has made it possible for individuals to acquire tools and information that were previously hard to access, expensive, and often challenging to understand.

Failure of effort expectancy towards behavioural intention could be explained by the strength of social influence over the individual's decision to adopt OST. Individuals could adopt OST because they want to attain certain social standing or want to be part of a community. It can be argued that one's difficulty with using a platform is the price one pays for being part of the desired community.

5.4 H3: Facilitating Conditions will positively influence customers' Performance Expectancy of Online Share Trading.

The hypothesis that facilitating conditions (γ=-0.077, p = 0.468) positively influenced OST performance expectancy, was not supported. This finding was unexpected and contradicted Venkatesh et al. (2012). The results are also inconsistent with past OST adoption studies by Lee (2009b) that used perceived behavioural control from TPB, which is similar to facilitating conditions.

Singh and Malhotra (2016) replicated the model by Lee (2009b), but their findings contradicted the original study on perceived behavioural control's influence on intention to use OST.

Facilitating conditions in the context of OST referred to the: (1) availability of resources like information about stock markets and tools from service providers; (2) availability of support like call centres from the providers of OST (Huang et al., 2005; Loh & Yee-Shyuan, 1998).

Two themes from the explanatory analysis that might provide more information on the finding were social influence and product evolution. Social influence reduced customers' need to rely on service providers for support when they experienced difficulties because they could get quicker and often better quality of service from online communities and friends. The same communities were also

used to learn and exchange trading and investment ideas, thus reducing reliance on service providers.

5.5 H4: Trust will positively influence customers' Performance Expectancy of Online Share Trading, and H9: Trust will positively influence customers' Behavioural Intention to adopt Online Share Trading.

The hypothesis that trust (γ=0.212, p = 0.003) affects online stock trading performance expectations was validated. This finding is consistent with Alalwan et al. (2017). The hypothesis that trust (γ=0.284, p < 0.001) positively influenced customers' behavioural intention to adopt OST was supported. According to Gefen et al. (2003), trust in an online service provider is developed through a mix of characteristics similar to those investigated in the current research model. The results of this study are consistent with established literature where trust was empirically demonstrated to be a good predictor for behavioural intention to adopt OST (Khan et al., 2020; Lee, 2009b; Singh & Malhotra, 2016).,

Findings of the exploratory study also pointed to the important role of trust in influencing behavioural intention to adopt OST. This result is in line with Gefen et al. (2003); OST providers' compliance with local regulations and having inbuilt mechanisms to protect customers from online financial services scams builds trust, which will benefit them. Trust as a function of social influence was discussed in section 5.2, where customers' actions are based on information from trusted members of a close circle or community (often online).

While trust is undeniably critical, it is evident that some elements of trust are beyond the control of a single service provider. Individuals who fall victim to financial services scams are likely to look unfavourably at the industry because they failed to invest sufficient time in establishing the legitimacy of their provider.

Visible regulatory enforcement of the whole industry might significantly improve the level of trust in service providers.

5.6 H5: Performance Expectancy will positively influence customers' Behavioural Intention to adopt Online Share Trading.

The hypothesis that performance expectancy (γ=0.044, p = 0.539) positively influenced behavioural intention to adopt OST was not supported. This finding was surprising and contradicted the model proposed by Venkatesh, Thong, and Xu (2012). The result is inconsistent with technology adoption literature (Alalwan et al., 2018; Lee, 2009a; Miraz et al., 2022; Sarfaraz, 2017; Venkatesh et al., 2003; Venkatesh et al., 2012) and past studies on OST adoption (Abroud et al., 2015; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013).

From the study's explanatory analysis phase, gamification and social impact emerged as potential clarifying themes for this unexpected result. Social influence was discussed in section 5.2.

Gamification is a strategy that tries to improve user engagement while encouraging positive behavioural patterns around a product using design features from gaming, in non-gaming environments (Pal et al., 2021; Van der Heide & Želinský, 2021). Gamified products or services aim to create an enjoyable, user-friendly interactive interface, and entertaining user experience (Ahmad et al., 2020; Hamari et al., 2014). Gamification has been effectively implemented in healthcare and is now being adopted by the financial services industry to varying degrees, blurring the perceived lines between finance and play (Van der Heide & Želinský, 2021). While the finance industry has not universally adopted gamification, some enterprises have used it in financial education and trading simulations. Others, particularly OST providers, appear wary of publicly endorsing it for fear of undermining finance's claims to be a beneficial activity (Van der Heide & Želinský, 2021).

While research has demonstrated that gamification may be compelling and empowering in influencing individual behaviour, Pal et al. (2021) contend that it has not been thoroughly investigated whether gamification concepts can be effectively used to encourage people to adopt healthy and wise financial habits, hence enhancing their financial well-being. While this study does not look at

individual financial well-being, the discrepancy between gamified OST adoption and customer financial well-being cannot be overlooked because stock market participation has demonstrated to improve investors' economic standing in the long run if done correctly (Fabozzi, 2008; Fernández-López et al., 2018).

According to Van der Heide and Želinský (2021), there are three gamification paradigms: the first claims that gamification is a marketing tool invented by advisors for big business; the second emphasizes the dangers of turning finance into a game and their resistance to merging finance and play; and the third claims that the power of games can be exploited to advance society and business.

The three paradigms correspond with the view emerging from the explanatory phase of the study. Some services providers have adopted gamification with the express purpose of simplifying what was once a challenging domain used by a few individuals with knowledge and capital. The rapid rise in users to the OST platforms because they offered an alternative form of entertainment, does pose a danger about the role of share markets as a place to grow wealth and whether that image or status will be tarnished. The third paradigm that gamification has the power to advance society and business is undoubtedly more pertinent when we look at the number of people participating in the stock market as a function of society. Various studies highlighted the continued low stock market participation (Ali et al., 2012; Guiso & Jappelli, 2005; Sivaramakrishnan et al., 2017); if gamification can help improve the accessibility of stock markets without diminishing its importance, society at large will earn a dividend from increased wealth accumulating to those who invested in stock markets.

While the three paradigms may seem to be opposing each other, there is no significant evidence to support one paradigm's supremacy over the others. OST providers and regulators will have to balance the objectives and opportunities presented by each facet of gamification.

5.7 H7: Hedonic Motivation will positively influence customers Behavioural Intention to adopt Online Share Trading.

The hypothesis that hedonic motivation (γ=0.183, p = 0.002) influenced behavioural intention to adopt OST was found to be true. Past studies on the adoption of OST did not include hedonic motivation or its equivalence in their research models (Abroud et al., 2015; Khan et al., 2020; Lee, 2009b; Malek, 2012; Singh & Malhotra, 2016; Tai & Ku, 2013). The result of this study is consistent with Venkatesh, Thong, and Xu (2012), who incorporated hedonic motivation into UTAUT when they adapted it for use in consumer contexts. The significance of hedonic motivation in technology adoption studies as a positive influencer has been validated by several studies (Alalwan et al., 2017; Alalwan et al., 2018; Tak & Panwar, 2017). However, in their research, Salimon et al. (2017) found hedonic motivation did not have any mediating effect on the adoption of e-banking.

According to the study's explanatory phase, the developments in gamification of finance might have influenced customers' behavioural intention to adopt OST because it removed or reduced barriers to entry. This view is supported by research which found that gamified products or services aim to create an enjoyable, user-friendly interactive interface and entertaining user experience (Ahmad et al., 2020; Hamari et al., 2014). Pal et al. (2021) showed research as having demonstrated that gamification may be compelling and empowering in influencing individual behaviour. Due to its infancy, further research is required to study how gamification interacts with hedonic motivation factors.

5.8 H8: Price Value will positively influence customers' Behavioural Intention to adopt Online Share Trading.

The hypothesis that price value positively influenced behavioural intention to adopt OST was supported. This result backs up Venkatesh, Thong, and Xu (2012), who identified price value as a key antecedent in consumers' behavioural intention to adopt technology because they bear the cost of adopting such

technology. The price value construct is comparable to economic value (cost reduction and time-saving) as applied in the study of Abroud et al. (2015), whose study found that cost reduction positively influenced behavioural intention to adopt OST in line with past studies.

Timesaving did not have any influence on intention to adopt, in contrast to previous studies. The study results highlight the positive trade-off between the benefits and costs as a factor in consumers' behavioural intention to adopt technology and align with findings from past studies (Alalwan et al., 2017; Alalwan et al., 2018; Tak & Panwar, 2017).

The study's explanatory phase contends that there are various reasons which, when combined, could explain why the price value hypothesis was supported. With the introduction of inexpensive stock brokerage, greater internet usage, and the availability of 4IR technologies, OST platforms may now provide low costs and convenient access (Chan, 2013; GMSA, 2016; GSMA, 2021; Kador, 2002; Lee, 2009b).

High market volatility, as proposed in the explanatory phase, might have played a role together with traditional and social media outlets to emphasize various acts by different stakeholders on the stock exchanges (market analysts views, drop in the price of commodities, company management actions, trading by hedge funds, etc.). These factors have fuelled an increase in consumers who believe they can profit by trading when in their view, the expected benefits outweigh the costs (Chohan, 2021; Malz, 2021). The reduction in minimum capital requirements and client onboarding for some OST service providers, has made it affordable for a large portion of the population to start participating in stock markets.

5.9 Control Variables

The study found control variables (demographic factors: age, gender, and highest educational qualification; and current use of OST) to have an insignificant effect on most pathways between independent (PE and BI) and dependent variables (EE, FC, SI, HM, PV, and TR). The hypothesis that price value positively influences behavioural intention to adopt, is the only pathway significantly

affected by the introduction of control variables. Gender had a significant, but weak and negative influence on performance expectancy. Current OST use also had a significant, but weak and negative effect on behavioural intention to adopt OST.

The results are unexpected and inconsistent with the literature (Tai & Ku, 2013; Venkatesh et al., 2012). A study by Lee (2010) noted that females were historically observed to be at a disadvantage regarding technology adoption compared to men. According to Ahmad et al. (2020), younger individuals are far more involved with technology, particularly before making any purchase decisions. In their research, Goswami and Dutta (2015) discovered mixed results regarding the impact of gender on technological adoption. According to findings from a study by Lee (2010), demographic differences in technology usage are disappearing, and this view supports the finding of this study.

The explanatory phase of the study suggested low female participation might be a function of historical gender stereotypes. It is highly probable that the observed low participation of females and a high number of participants with at least a bachelor's degree observed in the sample of the study is due to the sampling method of the study, where convenience was prioritised due to costs associated with collecting data from a wide range of participants and limited time available for the study.

As mobile technology and internet connect devices becomes ubiquitous as part of the modern way of living, past demographic differences observed in the use of technology could be reduced, if not eliminated.

5.10 H10: BFL Moderation

The inclusion of basic financial literacy as a moderating effect (H10a-i) was found to have an insignificant influence on pathways between independent and dependent variables. This finding is inconsistent with stock market participation literature. According to a study by Van Rooij et al. (2011), consumers with a low level of financial literacy are much less interested in investing in shares. Participating in stock markets without a solid understanding of financial markets

can result in mistakes that negatively impact individual welfare and produce negative economic externalities (Akhtar et al., 2018).

The study's explanatory phase proposes three constructs that could better clarify why basic financial literacy had no moderating effect in the quantitative analysis: a coincidence convergence of gamification of OST; social influence; and the global pandemic. These, put together, reduced the need for individuals to master the technicalities of financial markets before they can start trading or investing in shares.

The SARS-COVID-19 outbreak, which resulted in a global pandemic, produced unprecedented social and economic conditions. To combat the pandemic, governments worldwide had to take medical and non-medical measures. The most prevalent non-medical strategy was to impose a lockdown, which restricts residents' civil liberties for a set period (Cucinotta & Vanelli, 2020; Khosrawipour et al., 2020; Salzberger et al., 2020). Individuals stranded at home sought alternative entertainment and discovered that gamified OST platforms were convenient, easy to use, and accessible. Mainstream media provided broad coverage of the surge in users to the trading platform during the pandemic, but few scholarly studies support the motives and reason behind the surge (Rooney, 2020). A study by Talwar et al. (2021) found interest in news, deliberate thinking, and the need for precaution, to be primary trading drivers of retail investors during the pandemic. Pagano et al. (2021) observed that in times of heightened volatility due to the pandemic, retail investors adapted their trading style from momentum to contrarian strategy style, indicating greater awareness of market dynamics. While these studies do not explicitly contradict the explanatory phase's claimed explanation, they illustrate the subject's complexity. The reasons behind the surge in trading by retail investors could also be affected by country and market structure where the various studies were conducted, accounting for the inconsistent views.

The last insight put forward by the explanatory comments is that some people could have been encouraged by social influence dimensions already discussed in this study, to adopt OST without comprehending basic financial concepts, which have been simplified by gamification.

5.11 Platform business

This explanatory study looked at how widely platform business models and techniques are used in South Africa and how this may be affecting the adoption of OST. In the last decade, the platform business models and strategies have dominated business writing. As defined by Parker and Van Alstyne (2014), platforms are not prominent in the South African share trading eco-system (even though a stock exchange by its very nature is a form of a platform). A combination of factors could offer insights into the lack of platforms in the South African share trading market. To begin with, the market structure and regulation is designed to benefit the incumbent. Secondly, the South African market is small, thus making it unattractive for investors to make capital available to entrepreneurs trying to build different products and services. Thirdly, the market is dominated by universal financial services providers with high brand equity. A disruptor needs to offer a unique value proposition to serve an unmet need. Fourthly, the current leading disrupter has already taken the lion's share of the low capital, young investor segment, thus making it unattractive for other players to target the same segment even though it is a growing market segment.

Deliberate use of platform growth strategies is limited, and this could be attributed to the market maturity and lack of competition among the dominant service providers.

5.12 Summary

Explanatory power of the research model for behavioural intention to adopt OST was acceptable. Social influence has emerged as a complex and multi-dimensional concept with the potential to directly and indirectly influence an individual's behavioural intention. The social influence notion was reinforced by the widespread use of social media and communication technology. Unexpectedly, effort expectancy was found to be a poor predictor of behavioural intention, while being a positive predictor of performance expectancy. These findings could be attributed to social influence and accelerated technological advancement.

The existence of facilitating conditions did not influence performance expectancy owing to the reliance individuals place on their social circles and online communities for support and learning. The role of trust as a predictor of behavioural intention and performance expectancy towards OST was supported. Compliance with local regulation and social trust backed the strong support for trust as an influencing construct.

The gamification of finance offered a possible explanation for the failure to find support for performance expectancy towards behavioural intention in the adoption of OST. While gamification has the potential to result in unintended consequences – like turning investing and trading into entertainment or gambling – it has the potential to improve the accessibility of the stock market, without weakening the importance of the investing for sound economic reasons.

Hedonic motivation's positive influence towards behavioural intention to adopt OST was supported. The gamification of finance supported these results because one of the gamification aims is to make activity fun and enjoyable. The price value hypothesis was also supported due to low costs and convenient access to share markets, made possible by the 4IR technologies and inexpensive stock brokerage.

Demographic variables had an insignificant effect on most pathways between independent and dependent even though the data was skewed towards males with at least a bachelor's degree between the ages of 26 and 46.

Basic financial literacy did not have the expected moderating effects on the pathways between independent and dependent variables. A coincidence convergence of gamification of OST, social influence, and the global pandemic put together, reduced the need for individuals to learn about financial markets before they can start trading or investing in shares.

The platform business models and strategies were found not to be a major factor in adopting OST in South Africa. While there are elements of business model strategies in use, their prevalence is limited.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

This study's goal was to better understand multi-dimensional factors affecting the adoption of online share trading (OST) and stock market participation (SMP) from the consumers' and market participants' (stockbrokers, market analysts and regulators) points of view. This chapter will discuss the study's findings in relation to the research objectives.

The study integrated technology adoption, economics, and behavioural finance constructs to better understand factors affecting adoption of OST and SMP. The research was conducted in two phases. The first phase was a quantitative study on consumers based on an adapted Unified Theory of Acceptance and Use of Technology (UTAUT2) from Venkatesh et al. (2012), which included trust from Gefen et al. (2003) and basic financial literacy (BFL) from Van Rooij et al. (2011) acting as a moderator. The research included demographic information as control variables (age, gender, and highest educational qualification) and current use of OST.

The second phase was an explanatory qualitative study with market participants (stockbrokers, market analysts and regulators) to better understand the quantitative survey results, by including the role of platform business models and strategies employed by OST service providers.

The study's conclusions will be presented next, followed by recommendations, implications of the study, discussions of the study's limitations, and suggestions for future research.

6.2 Conclusions

6.2.1 *Phase One: Consumers*

The study found effort expectancy (EE), performance expectancy (PE) and facilitating conditions (FC) did not influence consumers' behavioural intention (BI) to adopt OST. This finding was in contrast to literature and expectation. Social influence (SI), hedonic motivation (HM), price value (PV) and trust were found to have an influence on consumers' BI to adopt OST. Basic financial literacy (BFL), a critical factor in SMP according to Van Rooij et al. (2011), was found not to have any moderating influence on BI to adopt OST. Control variables (gender, age, and highest educational qualifications) were insignificant influencers in consumers' adoption of OST.

6.2.2 *Phase Two: Market Participants*

According to market participants, the use of gamification techniques in OST and the broader construct of social influence are possible reasons why EE, PE, FC and BFL were found not to be positive influencers towards OST adoption. Gamification is believed to have reduced barriers to entry by simplifying the ease of use and making the OST experience fun and enjoyable, supporting the HM finding. The prevalence of social media and communication technologies are thought to have facilitated the influence of friends, peers, and family (SI) as positive influencers in consumers' decision to adopt OST. The pandemic is also believed to have influenced the adoption of OST because individuals whose movements were restricted used OST as an alternative to gaming, gambling and as a source of income (those working in economic sectors worst affected by the pandemic). Individuals' desire to take control of their financial affairs, combined with lower costs offered by some service providers, is thought to have also positively influenced the adoption of OST, especially amongst young people.

6.2.3 *Summary*

The results uncovered several factors that influence consumers' adoption of OST. Consumers were influenced by people in their close circles (friends, family and peers) and online communities – SI. Greater trust was placed on information from social connections than service providers' information. The prevalence of communication tools and social media technologies has only served to amplify the influence of SI. The need to enjoy oneself and have fun – HM – while using OST came out as a critical adoption factor. The gamification of finance is seen as lowering entry barriers, thus making the adoption of OST easy and fun to use in support of HM.

The need to have service providers comply with local regulations and treat customers fairly, influenced customers' attitudes towards adoption (trust). Trust in the brand equity of the service provider to live up to its promise and deliver on the promise was a significant influencer towards adoption. While not all customers were looking for low-cost offerings, price value in the form of a positive trade-off between the cost of service and benefits, was significant. Young people with low capital preferred low cost and no frill services, while others were happy to pay a higher fee if they perceived the quality of service to be valuable.

The ease of use – EE – associated with OST and the existence of support services and resource – FC – did not play any role in individuals' decisions to adopt the service. The need to have direct benefit – PE – in the form of better investment returns, did not play a role in OST adoption.

Knowledge of basic financial concepts – BFL – did not have any moderating effect on OST adoption. The gamification and design techniques simplified OST usage and reduced the knowledge barrier required to use the service. None of the demographic factors as control variables had any influence on the adoption of OST.

6.3 Recommendations

The marketplace within which OST operates has many stakeholders sometimes operating with different and often conflicting objectives and interests. The recommendations are presented per stakeholder aligned with the primary objectives.

6.3.1 *Regulators and policymakers*

According to Malyshev and Kauffmann (2019), the pace of digitalisation is challenging how regulations are formulated and implemented. It is clear from the literature that digitalisation through gamification has a positive effect in lowering barriers to entry into the stock market. What is unclear, is whether or not customers realised the financial benefits of investing in the markets due to the platforms' ease of use and the strong influence from social circles. To that end, it is recommended that regulators conduct an exhaustive assessment of the OST platforms currently on the market and their respective customers, to establish if customers are getting the economic benefits of investing in markets or if the OST providers are the only economic beneficiaries of the current technological advances. The possible negative consequences of gamification and consumers overreliance on social influence should be interrogated to develop regulatory programs that can help advance the interest of consumers in the long term.

Regulators need to also explore how gamification can be used as an educational tool for consumers at different knowledge levels.

The current regulatory structure while effective according to market participants, makes it difficult for entrepreneurs to enter the market. The market can benefit from a revision of the current laws and regulations. The new regulation should be digital-ready while including the necessary safeguards and protections for a stable and reliable financial market.

Regulations can include provisions that ensure necessary disclosures, including informing customers of the risks and the potential losses customers can suffer as a result of using products and services provided through OST.

6.3.2 *Stock Exchanges*

Stock exchanges are inherently multi-sided platforms (MSP) that bring together various parties to transact electronically (McNamara, 2018). Stock exchanges can take advantage of the rapid changes in technology to relook at how brokers are accredited. Newer technology-based service providers able to meet customers' needs based on current trends (e.g., bringing a different approach to maximise social influence) should be incubated. It is through these new offerings that the stock exchanges may experience true network effects with new customers entering the market. The approach also talks to externalised assets of an MSP because the stock exchanges only need to create an environment conducive for others to build such services and connect them to each other through their offering.

6.3.3 *Stockbrokers*

Stockbrokers should explore embracing gamification to attract customers to their platform and use the technology to help their customers build wealth. They need to walk a fine line between making the platform fun to use without losing focus on the primary goal of why their services exist. Social influence factors must be designed into product development and marketing strategies. In partnership with stock exchanges and regulators, stockbrokers can use the current technologies and social constructs to make educational programs that inform and educate the bulk of the population who are currently not participating in the stock markets. The education programs will help build valuable financial knowledge and improve trust in the broader financial markets. Consumers can also be educated on how to identify fraudulent schemes.

With the realisation that some retail customers are using services offered by stockbrokers for economically destructive activities, stockbrokers need to pause and consider how they can improve awareness amongst their customers on how to invest or trade in a way that will lead to long term positive results. Gamification and social influence can be deployed to improve economically constructive attitudes towards the use of OST and SMP. It is in the stockbrokers' best interest to enhance their customers' economic destiny so that customers stay with them

for longer, and they continue to earn fees from customers if they don’t destroy their capital (or accumulated wealth).

Platform business models and growth strategies are valuable tools that have been proven to work in many sectors of the economy. Stockbrokers, especially those who are part of universal financial services providers, can benefit from adopting some of the platform growth strategies.

6.3.4 *FinTech companies*

FinTech providers uninhibited by legacy technologies and business models are well primed to experiment with different platform business models and growth strategies. The traditional model based on charging a fee per trade can be replaced with different revenue models. FinTech companies are also well primed to design their offering focusing on gamification, social influence and price value, without losing sight of the bigger opportunity.

6.3.5 *Retail Investors*

Investors need to be aware of the fact that although a service is available and accessible, it does not mean they have to adopt it. Investing based on information shared in social circles can be helpful while also being destructive. Investors must do their research; investing is not meant to be used for entertainment or to uplift individuals' social standing by the virtue of owning a share, if they don’t understand what it means to be a shareholder. It is meant to be an investment to uplift one’s economic standing.

The gamified platform should be used with caution; ease of use should not be confused with investing being an online game. Focus should be placed on learning financial market techniques using gamified approaches.

6.4 Theoretical Implication

The study used UTAUT2 by Venkatesh et al. (2012) to explain factors influencing customers' decision to adopt OST. UTAUT2 was adapted to include basic

financial literacy as a moderating effect because it was shown to be a significant factor in stock market participation (Van Rooij et al., 2011). The study also included trust to test new pathways (Trust -> Performance Expectancy and Trust -> Behavioural Intention) as part of the research model because it was previously demonstrated to be a significant influencing factor in adoption studies (Alalwan et al., 2018; Gefen et al., 2003).

The study's contribution is that it attempted to integrate the behavioural finance construct into UTAUT2 for OST adoption. While the results were unexpected, the insights from the study's explanatory phase provide possible understandings into why basic financial literacy's influence was insignificant. The study adds to the discourse on using technology for utilitarian purposes, compared to the hedonic motives in share trading. Investing in shares is meant to be a productive activity but is now perceived to be primarily used for hedonic reasons due to specific technological developments. The question that needs to be asked is whether this outcome or trend is in the best interest of society.

To the best of the researcher's knowledge, no other study has examined factors influencing OST adoption in South Africa before. This study provides a base for future studies on OST adoption integrated with finance.

6.5 Limitations

The study had limitations, even though it was a beneficial and instructive attempt to add to the current literature in the domain of OST adoption. The study used a convenience sampling method; due to the limited diversity of participants, the findings' generalisability to other groups was weakened. The demographic profile of the participants was skewed towards males with at least a bachelor's degree, which is not representative of the population. The majority of participants were also current users of OST; this limited the ability of the study to understand factors that could be influencing failure to adopt OST.

Because current OST use was self-reported rather than based on observed data, some participants may have falsified their usage, skewing the results. Current OST usage was also based on a single question that could not be fully integrated

into structural equation modelling (SEM) to study various factors that form part of the usage construct.

Due of the length of the questionnaire, advanced financial literacy questions were omitted, limiting the study's ability to research how financial literacy in totality could influence OST adoption properly. The study did not distinguish between web-based and mobile-based OST platforms, which could have influenced the results because some participants may have been confused about the study's focus.

The survey questionnaire was only distributed through limited online mediums with limited reach; the study could have benefited from other data collection methods for a richer depth of participants.

The study did not test for economic means or access to disposable income, a prerequisite for adopting OST. Lastly, the study could have benefitted from examining the usage of other investments and saving products, to test if they influenced the decision to adopt OST.

6.6 Future research

This study was limited in scale and scope to explain factors influencing OST adoption in South Africa fully. Future studies can benefit from being longitudinal to provide a better understanding of the evolving dynamics in consumer behaviour regarding the adoption and use of OST. Secondly, future studies can examine users and non-users of OST based on observed data (not self-reported). This will enable scholars to better understand the factors affecting adoption from multiple viewpoints in order to draw richer insights. The convergence between consumer technology and finance is evolving; the technology adoption research models should include more constructs from finance to develop richer models that inform future generations of scholars and practitioners.

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APPENDIX A Online Survey

Factors affecting the adoption of online share trading in South Africa

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Start of Block: Block 10

Intro
Dear Sir / Madam,

My name is Tshwantsho Matsena, and I am a master's student in Digital Business at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating the adoption of online share trading in South Africa under the supervision of Professor Leona Craffert.

This research project aims to explore the factors affecting the adoption and usage of online share trading in South Africa. Online share trading is a function of investing on the stock exchange through a technology-based platform. The platform can be offered by traditional stockbrokers or by financial technology-based service providers.

As part of this project, I would like to invite you to take part in answering a questionnaire. This activity will involve a few questions and will take around 10-15 minutes. By completing the questionnaire and clicking submit, this is taken as your consent to participate. Only the researcher will have access to these questionnaires, which will be stored on a secure password-protected cloud storage drive.

Please bear in mind that, while your participation is vital to my research, it is entirely voluntary. There will be no personal costs to you if you participate in this project. You will not receive any direct benefits from participation, but there are no disadvantages or penalties if you choose not to participate or withdraw from the study. You may withdraw at any time or not answer any questions if you do not want to. The questionnaire will be completely confidential and anonymous as I will not ask for your name or identifying information. The information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the questionnaire or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which will be available online through the university library website. The data collected from this research project will be stored in a secure password-protected cloud storage drive and kept for five years.

If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,
Tshwantsho Matsena

Researcher: Tshwantsho Matsena, 676759@students.wits.ac.za

Supervisor: Professor Leona Craffert, leona.craffert@wits.ac.za

Consent to participate in the study.

Participation in this survey is optional, and should you wish to participate please indicate your consent:

I agree to participate in the survey, knowing my responses will be used for academic purposes. (1)

- I do not wish to participate in this survey. (2)

Skip To: End of Survey If Consent to participate in the study. Participation in this survey is optional and should you w... = 2

End of Block: Block 10

Start of Block: Default Question Block

H0
Demographics information
Please indicate by selecting the appropriate option.

Q1 Select your age group

- 18-25 Years (1)
- 26-35 Years (2)
- 36-45 Years (3)
- 46-55 Years (4)
- 56 Years and older (5)

Q2 Gender

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer not to say (4)

Q3 Highest Education Qualification

- High School (1)
- Diploma (2)
- Undergraduate bachelor’s degree (3)
- Postgraduate bachelor’s degree (4)

Q4 Do you currently use Online Share Trading?

- Yes (1)
- No (2)

Display This Question:

If do you currently use Online Share Trading? = 1

Q5 How long have you been using Online Share Trading?

- Numbers of years (1) _____

End of Block: Default Question Block

Start of Block: Performance Expectancy

PE The section contains statements on **Performance Expectancy**.
Consumers' **Performance Expectancy** is defined as the degree to which employing technology (Online Share Trading platform) will benefit them when investing or trading in shares online..

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

PE1 I find Online Share Trading useful in my daily life.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

PE2 Using Online Share Trading increases my chances of achieving investment or trading goals that are important to me.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

PE3 Using Online Share Trading helps me accomplish investing or trading in shares more quickly.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

PE4 Using Online Share Trading increases my ability to make profitable investments/trades.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Performance Expectancy

Start of Block: Effort Expectancy

EE
The section contains statements on **Effort Expectancy.**

Effort Expectancy is the degree of ease associated with consumers' use of technology.

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

EE1 Learning how to use Online Share Trading is easy for me.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

EE2 My interaction with Online Share Trading is clear and understandable.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

EE3 I find Online Share Trading useful in my daily life.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

EE4 It is easy for me to become skilful at using Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Effort Expectancy

Start of Block: Social Influence

SI The section contains statements on **Social Influence**.

Social Influence is the extent to which consumers perceive that is it important to others (e.g., family and friends) to believe that they should use a particular technology.

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

SI1 People who are important to me think that I should use Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

SI2 People who influence my behaviour think that I should use Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

SI3 People whose opinions that I value prefer that I use Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Social Influence

Start of Block: Facilitating Conditions

FC
The section contains statements on **Facilitating Conditions**.
Facilitating Conditions refer to consumers' perceptions of the resources and support available to perform a behaviour.
Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

FC1 I have the resources necessary to use Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

FC2 I have the knowledge necessary to use Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

FC3 Online Share Trading is compatible with other technologies I use.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

FC4 I can get help from others when I have difficulties using Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Facilitating Conditions

Start of Block: Hedonic Motivation

HM
The section contains statements on **Hedonic Motivation**.
Hedonic Motivation is defined as the fun or pleasure derived from using a technology.

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

HM1 Using Online Share Trading is fun.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

HM2 Using Online Share Trading is enjoyable.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

HM3 Using Online Share Trading is entertaining.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Hedonic Motivation

Start of Block: Price Value

PV
The section contains statements on **Price Value**.
Price Value is defined as consumers' cognitive trade-off between the perceived benefits and the monetary cost for using a technology.

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

PV1 Online Share Trading is reasonably priced.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

PV2 Online Share Trading is good value for the money.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

PV3 At the current price, Online Share Trading provides good value.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Price Value

Start of Block: Behavioural Intention

BI
The section contains statements on **Behavioural Intention**.
Behavioural Intention is the degree to which an individual intends to engage in a particular behaviour.
Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

BI1 I intend to use Online Share Trading in the future.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

BI2 I will always try to use Online Share Trading in my daily life.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (19)

BI3 I plan to use Online Share Trading in future.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

BI4 I predict I would use Online Share Trading in the future.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Behavioural Intention

Start of Block: Trust

TR
The section contains statements on **Trust**.
Trust is defined as the feeling of security about technology and the vendor's ability to deliver on

its promises.

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate option.

TR1 I believe that Online Share Trading is trustworthy.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

TR2 I trust in Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

TR3 I do not doubt the honesty of Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

TR4 I feel assured that legal and technological structures adequately protect me from problems on Online Share Trading.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

TR5 Even if not monitored, I would trust Online Share Trading to do the job right.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

TR6 Online Share Trading has the ability to fulfil its task.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Trust

Start of Block: Basic Literacy

H9 The section contains statements on **Basic Financial Literacy**.
Please choose the option that corresponds to the correct answer for each question.

BL1 Suppose you had R100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- More than R102. (1)
- Exactly R102. (2)
- Less than R102. (3)
- Do not know. (4)
- Refuse to answer. (5)

BL2 Suppose you had R100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total?

- More than R200. (1)
- Exactly R200. (2)
- Less than R200. (3)
- Do not know. (4)
- Refuse to answer. (5)

BL3 Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- More than today. (1)
- Exactly the same. (2)
- Less than today. (3)
- Do not know. (4)
- Refuse to answer. (5)

BL4 Assume a friend inherits R10,000 today and his sibling inherits R10,000 3 years from now. Who is richer because of the inheritance?

- My friend. (1)
- His siblings. (2)
- They are equally rich. (3)
- Do not know. (4)
- Refuse to answer. (5)

BL5 Suppose that in the year 2021, your income has doubled, and prices of all goods have doubled too. In 2021, how much will you be able to buy with your income?

- More than today. (1)
- The same. (2)
- Less than today (3)
- Do not know. (4)
- Refuse to answer. (5)

End of Block: Basic Literacy

APPENDIX B Ethics Clearance Certificate

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

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

Ethics Clearance Certificate

Ethics protocol number: WBS/DB676759/456
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below,

This certificate is only valid if accompanied by formal permission from the relevant stakeholder(s).

Project title	Factors affecting the adoption of online share trading in South Africa
Investigator / Researcher	Mr Tshwantsho Matsena
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	2021-11-02
Expiry date	Date of submission of the project report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

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

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

Signature

02 November 2021
Date:

APPENDIX C Participant Information Sheets

i. Participant Information Sheet – Quantitative study

Dear Sir / Madam,

My name is Tshwantsho Matsena, and I am a Masters student in Digital Business at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating the adoption of online share trading in South Africa under the supervision of Professor Leona Craffert.

This research project aims to explore the factors affecting the adoption and usage of online share trading in South Africa. Online share trading is a function of investing on the stock exchange through a technology-based platform. The platform can be offered by traditional stockbrokers or by financial technology-based service providers.

As part of this project, I would like to invite you to take part in answering a questionnaire. This activity will involve a few questions and will take around 10-15 minutes. By completing the questionnaire and clicking submit, this is taken as your consent to participate. Only the researcher will have access to these questionnaires, which will be stored on a secure password-protected cloud storage drive.

Please bear in mind that, while your participation is vital to my research, it is entirely voluntary.

There will be no personal costs to you if you participate in this project. You will not receive any direct benefits from participation, but there are no disadvantages or penalties if you choose not to participate or withdraw from the study. You may withdraw at any time or not answer any questions if you do not want to. The questionnaire will be completely confidential and anonymous as I will not ask for your name or identifying information. The information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the questionnaire or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which will be available online through the university library website. The data collected from this research project will be stored in a secure password-protected cloud storage drive and kept for five years. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,
Tshwantsho Matsena

Researcher:
Tshwantsho Matsena, 676759@students.wits.ac.za

Supervisor:
Professor Leona Craffert, leona.craffert@wits.ac.za

ii. Participant Information Sheet – Qualitative study

Dear Sir / Madam,

My name is Tshwantsho Matsena, and I am a Masters student in Digital Business at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating the adoption of online share trading in South Africa under the supervision of Professor Leona Craffert.

This research project aims to explore the factors affecting the adoption and usage of online share trading in South Africa. Online share trading is a function of investing on the stock exchange through a technology-based platform. The platform can be offered by traditional stockbrokers or by financial technology-based service providers.

As part of this project, I would like to invite you to take part in semi-structured interview. This activity will involve answering several questions during an online interview and will take around 40 minutes. With your permission, I would also like to audio record the interview conducted over Zoom video conferencing platform. This recording will be stored in on a secure password-protected cloud storage drive and only the researcher will have access to this recording. It will be deleted after five years

Please bear in mind that, while your participation is vital to my research, it is entirely voluntary.

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

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which will be available online through the university library website. The data collected from this research project will be stored in a secure password-protected cloud storage drive and kept for five years. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,
Tshwantsho Matsena

Researcher:
Tshwantsho Matsena, 676759@students.wits.ac.za

Supervisor:
Professor Leona Craffert, leona.craffert@wits.ac.za

iii. Informed Consent form

Factors affecting the adoption of online share trading in South Africa

Tshwantsho Matsena

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

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
Tshwantsho Matsena……..… (researcher)
…… (date)

APPENDIX D Additional statistical results

i. Age

Table D–1 Age Group Summary

Age Group (Years)	Frequency	Percent
18-25 Years	6	2.6
26-35 Years	61	26.0
36-45 Years	73	31.1
46-55 Years	53	22.6
56 years and older	42	17.9
Total	235	100.0

ii. Gender

Table D–2 Gender Summary

Gender	Frequency	Percent
Male	161	68.5
Female	71	30.2
Prefer not to say	3	1.3
Total	235	100.0

iii. Highest Education Qualification

Table D–3 Highest Education Qualification

Qualification	Frequency	Percent
High School	26	11.1
Diploma	25	10.6
Undergraduate bachelor's degree	53	22.6
Postgraduate bachelor's degree	131	55.7
Total	235	100.0

iv. Use of Online Share Trading

Table D–4 Online Share Trading Usage

Currently use OST	Frequency	Percent
Yes	184	78.3
No	51	21.7
Total	235	100.0

v. Summary of intention to adopt survey responses

Table D–5 Summary of intention to adopt survey responses

Indicator	Frequency	Median	Std. Deviation	Indicator Scores							Skewness		Kurtosis	
				Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly Agree	Statistic	Std. Error	Statistic	Std. Error
PE1	235	6	1.552	9	7	6	35	40	70	68	-1.138	0.159	0.911	0.316
PE2	235	6	1.425	7	4	4	28	30	83	79	-1.465	0.159	2.123	0.316
PE3	235	6	1.445	6	6	5	19	25	73	101	-1.643	0.159	2.448	0.316
PE4	235	6	1.571	8	12	4	47	39	69	56	-0.921	0.159	0.344	0.316
EE1	235	6	1.434	2	13	18	16	44	97	45	-1.074	0.159	0.465	0.316
EE2	235	6	1.443	6	9	10	24	38	101	47	-1.282	0.159	1.293	0.316
EE3	235	6	1.456	5	8	11	23	36	87	65	-1.24	0.159	1.14	0.316
EE4	235	6	1.408	3	14	12	28	59	84	35	-0.951	0.159	0.474	0.316
SI1	235	4	1.605	18	30	10	87	40	35	15	-0.261	0.159	-0.508	0.316
SI2	235	4	1.617	11	37	11	82	26	54	14	-0.229	0.159	-0.783	0.316
SI3	235	4	1.539	8	27	13	78	37	55	17	-0.341	0.159	-0.528	0.316
FC1	235	6	1.23	2	6	5	11	21	92	98	-1.871	0.159	3.801	0.316
FC2	235	6	1.381	7	8	4	11	59	93	53	-1.566	0.159	2.658	0.316
FC3	235	6	1.265	1	8	3	28	38	90	67	-1.187	0.159	1.344	0.316

Indicator	Frequency	Median	Std. Deviation	Indicator Scores							Skewness		Kurtosis	
				Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly Agree	Statistic	Std. Error	Statistic	Std. Error
FC4	235	5	1.469	2	16	19	38	46	80	34	-0.682	0.159	-0.311	0.316
HM1	235	5	1.483	7	14	6	43	56	75	34	-0.91	0.159	0.476	0.316
HM2	235	5	1.42	6	11	9	43	56	80	30	-0.916	0.159	0.601	0.316
HM3	235	5	1.563	12	23	17	65	55	45	18	-0.42	0.159	-0.397	0.316
PV1	235	5	1.553	5	20	22	31	61	65	31	-0.634	0.159	-0.379	0.316
PV2	235	5	1.415	3	13	12	38	53	80	36	-0.827	0.159	0.231	0.316
PV3	235	5	1.409	3	13	14	40	55	78	32	-0.766	0.159	0.121	0.316
BI1	235	7	1.233	4	4	1	11	21	68	126	-2.224	0.159	5.644	0.316
BI2	235	6	1.616	8	11	12	32	41	65	66	-0.965	0.159	0.249	0.316
BI3	235	6	1.188	4	3	0	13	21	79	115	-2.195	0.159	5.949	0.316
BI4	235	6	1.216	4	3	0	16	22	74	116	-2.058	0.159	5.109	0.316
TR1	235	6	1.157	2	1	11	28	37	115	41	-1.162	0.159	1.556	0.316
TR2	235	6	1.203	3	3	8	27	46	107	41	-1.25	0.159	2.008	0.316
TR3	235	6	1.363	4	5	18	23	51	91	43	-1.051	0.159	0.862	0.316
TR4	235	6	1.376	5	5	19	26	61	82	37	-0.961	0.159	0.745	0.316
TR5	235	5	1.786	23	29	37	27	46	62	11	-0.321	0.159	-1.122	0.316
TR6	235	6	1.042	2	2	4	20	45	125	37	-1.494	0.159	3.64	0.316

vi. Basic Financial Literacy

Table D–6 Basic financial literacy: Summary

	Numeracy	Interest compounding	Inflation	Time value of money	Money illusion
	BL1	**BL2**	**BL3**	**BL4**	**BL5**
Incorrect	7	30	20	33	46
Correct	222	195	205	191	180
Do not know	6	10	10	11	9

Table D–7 Basic financial literacy: Weighted percentages

	Numeracy	Interest compounding	Inflation	Time value of money	Money illusion
	BL1	**BL2**	**BL3**	**BL4**	**BL5**
Incorrect	3	12.8	8.5	14	19.6
Correct	94.5	83	87.2	81.3	76.6
Do not know	2.6	4.3	4.3	4.7	3.8

Table D–8 Basic financial literacy: Weighted percentages (Simplified)

	Numeracy	Interest compounding	Inflation	Time value of money	Money illusion
	BL1	**BL2**	**BL3**	**BL4**	**BL5**
Incorrect	5.5	17	12.8	18.7	23.4
Correct	94.5	83	87.2	81.3	76.6

Table D–9 Basic financial literacy by gender

		Gender					
		Male		Female		Prefer not to say	
		Count	Column N %	Count	Column N %	Count	Column N %
BL1N	Incorrect	8	5.0%	4	5.6%	1	33.3%
	Correct	153	95.0%	67	94.4%	2	66.7%
	Do not know	0	0.0%	0	0.0%	0	0.0%
	Refuse to answer	0	0.0%	0	0.0%	0	0.0%
BL2N	Incorrect	20	12.4%	19	26.8%	1	33.3%
	Correct	141	87.6%	52	73.2%	2	66.7%
	Do not know	0	0.0%	0	0.0%	0	0.0%
	Refuse to answer	0	0.0%	0	0.0%	0	0.0%
BL3N	Incorrect	15	9.3%	14	19.7%	1	33.3%
	Correct	146	90.7%	57	80.3%	2	66.7%
	Do not know	0	0.0%	0	0.0%	0	0.0%

	Refuse to answer	0	0.0%	0	0.0%	0	0.0%
BL4N	Incorrect	22	13.7%	21	29.6%	1	33.3%
	Correct	139	86.3%	50	70.4%	2	66.7%
	Do not know	0	0.0%	0	0.0%	0	0.0%
	Refuse to answer	0	0.0%	0	0.0%	0	0.0%
BL5N	Incorrect	30	18.6%	23	32.4%	2	66.7%
	Correct	131	81.4%	48	67.6%	1	33.3%
	Do not know	0	0.0%	0	0.0%	0	0.0%
	Refuse to answer	0	0.0%	0	0.0%	0	0.0%

Table D–10 Cross Tabulation[1]

		BFL Competency	Low								High								Total
		Qualification	High School		Diploma		Undergraduate		Postgraduate		High School		Diploma		Undergraduate		Postgraduate		
Use OST	Gender	Age Group	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	
Yes	Male	18-25 Years		0.0		0.0		0.0		0.0	2.00	0.9		0.0	1.00	0.4	4.00	0.4	1.70
		26-35 Years		0.0		0.0	1.00	0.4	3.00	0.4	6.00	1.3	5.00	0.4	5.00	1.3	6.30	8.5	12.34
		36-45 Years		0.0	6.00	0.4		0.0	15.00	0.4	1.00	0.9	5.75	1.7	5.62	5.5	7.71	7.2	16.17
		46-55 Years	15.00	0.4	4.00	0.4	16.00	0.4	7.00	0.9	20.00	0.9	8.33	1.3	8.71	3.0	10.76	7.2	14.47
		56 years and older	5.00	0.9		0.0	10.00	0.4		0.0	10.40	2.1	14.50	1.7	8.21	3.0	14.60	6.4	14.47
	Female	18-25 Years		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00
		26-35 Years	3.00	0.4	1.00	0.4	1.50	0.9	2.50	0.9		0.0		0.0	2.33	1.3	3.75	3.4	7.23
		36-45 Years		0.0	15.00	0.4	2.00	0.4	6.67	1.3	6.50	0.9	7.50	0.9	7.00	0.9	7.20	2.1	6.81
		46-55 Years		0.0		0.0		0.0		0.0		0.0	5.00	0.4	3.00	0.4	11.00	1.7	2.55
		56 years and older		0.0		0.0		0.0		0.0	10.00	0.4	6.50	0.9		0.0	8.50	0.9	2.13
	Prefer not to say	36-45 Years		0.0		0.0		0.0		0.0		0.0		0.0		0.0	7.00	0.4	0.43
No	Male	18-25 Years		0.0		0.0		0.0		0.0		0.0		0.0		0.4		0.0	0.43
		26-35 Years		0.0		0.0		0.0		0.0		0.0		0.4		0.4		0.9	1.70
		36-45 Years		0.0		0.4		0.0		0.4		0.9		0.4		0.0		1.3	3.40
		46-55 Years		0.0		0.0		0.4		1.3		0.0		0.0		0.4		1.3	3.40

[1] All data for age groups with zero data points have been removed from the table.

		BFL Competency	Low								High								Total
		Qualification	High School		Diploma		Undergraduate		Postgraduate		High School		Diploma		Undergraduate		Postgraduate		
Use OST	Gender	Age Group	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	Mean of Use	% Of N	
		56 years and older		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.4	0.43
	Female	18-25 Years		0.4		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.43
		26-35 Years		0.0		0.0		0.9		1.7		0.0		0.0		0.9		1.3	4.68
		36-45 Years		0.0		0.0		0.0		0.4		0.0		0.0		0.4		2.6	3.40
		46-55 Years		0.4		0.0		0.0		0.4		0.0		0.0		0.4		0.9	2.13
		56 years and older		0.0		0.0		0.0		0.0		0.4		0.4		0.0		0.0	0.85
	Prefer not to say	36-45 Years		0.0		0.0		0.0		0.4		0.0		0.0		0.0		0.4	0.85
Total				2.6		2.1		3.8		8.5		8.5		8.5		18.7		47.2	

vii. Measurement model

Table D–11 Base Model Fit Measurement

Path			Loading Factor	t-value
BI1	<---	BI	0.908	**
BI3	<---	BI	0.986	28.895
BI4	<---	BI	0.905	22.895
EE1	<---	EE	0.896	**
EE2	<---	EE	0.89	20.133
EE3	<---	EE	0.874	19.353
EE4	<---	EE	0.827	17.285
FC1	<---	FC	0.735	**
FC2	<---	FC	0.877	12.225
FC3	<---	FC	0.702	10.168
HM1	<---	HM	0.945	**
HM2	<---	HM	0.924	21.885
HM3	<---	HM	0.688	12.947
PE1	<---	PE	0.762	**
PE2	<---	PE	0.893	13.973
PE3	<---	PE	0.878	13.803
PV1	<---	PV	0.861	**
PV2	<---	PV	0.933	20.187
PV3	<---	PV	0.922	19.83
SI1	<---	SI	0.841	**
SI2	<---	SI	0.951	18.016
SI3	<---	SI	0.835	15.828

Path			Loading Factor	t-value
TR1	<---	TR	0.937	**
TR2	<---	TR	0.942	27.454
TR3	<---	TR	0.847	20.165
TR4	<---	TR	0.719	14.315
TR6	<---	TR	0.741	15.116

Table D–12 Base Model Fit Indices

Model Fit Indices		Results	Reference value	Fit
Chi-Square Test	X^2	460.924		-
Degrees of freedom	df	296		-
Relative Chi-Square Test	X^2/df	1.557	< 3	Good Fit
p-value	p-value	.000	>0.05	Poor Fit
Incremental Fit Index	IFI	.970	>0.9	Good Fit
Tucker Lewis Index	TLI	.964	>0.9	Good Fit
Comparative Fit Index	CFI	.970	>0.9	Good Fit
Root Mean Square Error of Approximation	RMSEA	.049	=<0.05	Good Fit
p of Close Fit	PCLOSE	.582	>0.05	Good Fit

(Collier, 2020; Field, 2013, 2018; Pallant, 2013)

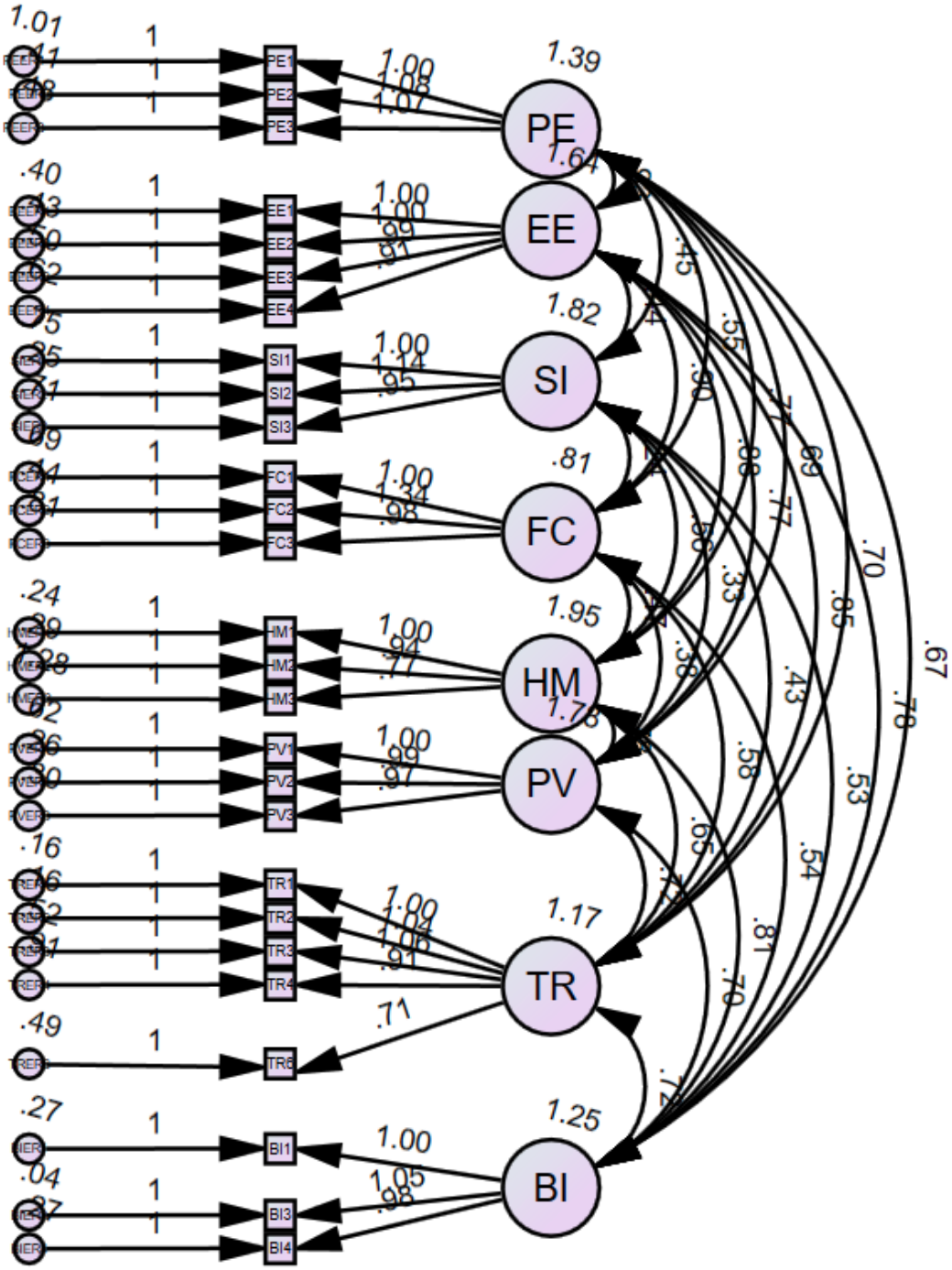

Figure D–1 Base measurement model

Table D–13 Base Standardised Residual Covariances

	BI4	BI3	BI1	TR6	TR4	TR3	TR1	TR2	PV3	PV1	PV2	HM3	HM2	HM1	FC3	FC1	FC2	SI3	SI2	SI1	EE4	EE3	EE2	EE1	PE1	PE3	PE2
BI4	.000																										
BI3	.019	.000																									
BI1	-.165	.004	.000																								
TR6	2.415	1.532	1.983	.000																							
TR4	.503	.236	.781	.977	.000																						
TR3	-.195	-.877	-.344	.403	.495	.000																					
TR1	-.329	-.388	.288	-.389	-.206	.084	.000																				
TR2	.322	.100	.612	-.260	-.147	-.135	.112	.000																			
PV3	.628	-.509	.510	1.447	.291	-.634	-.778	-.084	.000																		
PV1	1.545	.088	.493	1.537	.118	-.299	-.725	.119	.020	.000																	
PV2	.709	-.085	.904	1.917	.629	-.245	-.149	.503	.014	-.043	.000																
HM3	-1.013	-.828	-1.434	.425	.176	-.737	-.976	-1.224	.637	.886	.262	.000															
HM2	.142	.244	-.011	1.631	.649	.081	-.366	-.399	-.317	.747	-.444	-.036	.000														
HM1	-.207	-.034	.274	1.593	.965	.084	-.040	.067	-.061	.715	-.181	.144	-.022	.000													
FC3	.193	.192	.358	1.135	-1.110	-.496	.082	-.614	.370	-.689	.281	.332	1.190	.189	.000												
FC1	.799	.798	1.051	1.911	-.085	-.213	.328	.081	.071	-.247	.040	-.735	.192	-.123	.117	.000											
FC2	-.476	-.521	.431	1.060	-.773	-.544	.146	-.040	-.089	-.368	.150	-1.200	.314	-.405	-.215	.143	.000										
SI3	.606	.984	.950	1.018	.591	-.123	-.181	.262	.551	-.039	.595	.000	.099	.457	1.010	-.093	.499	.000									

	BI4	BI3	BI1	TR6	TR4	TR3	TR1	TR2	PV3	PV1	PV2	HM3	HM2	HM1	FC3	FC1	FC2	SI3	SI2	SI1	EE4	EE3	EE2	EE1	PE1	PE3	PE2
SI2	-.653	-.260	-.483	-.360	.170	.455	-.365	-.236	-.134	-.120	-.566	-.150	-.605	.017	.401	-.165	-.379	.023	.000								
SI1	.316	.297	-.230	.101	.651	.901	.101	.688	.866	.982	.369	.141	.267	.825	.799	.213	-.113	-.179	.025	.000							
EE4	.022	-.227	.518	1.060	-.812	-.579	-.607	-.299	.177	.353	.336	-2.102	.322	-.510	1.301	-.335	.121	1.049	.328	1.431	.000						
EE3	-.229	-.061	.350	1.401	-.406	.238	.316	.576	.575	.407	.258	-1.345	1.081	.226	.076	-1.357	-.451	.160	.217	1.566	-.392	.000					
EE2	.175	.060	1.008	1.345	-.498	-.200	-.158	.075	.251	.079	-.340	-1.093	.846	.149	.057	-.814	.631	.244	-.882	.380	-.173	.195	.000				
EE1	-.149	-.154	.616	1.110	-.812	-.462	-.266	-.047	-.258	-.322	-.675	-2.326	.200	-.705	1.004	-.479	.084	-.702	-.641	1.151	.513	-.015	-.165	.000			
PE1	-.300	-.362	.130	1.227	-.404	-.347	.049	-.035	.214	.181	.141	-.155	1.044	.171	.273	.718	.350	.450	-.558	.324	.867	2.087	1.699	.387	.000		
PE3	-.053	-.023	.659	1.025	.078	-.875	-.378	-.441	-.214	-.465	.188	-1.657	.299	-.135	-.922	.796	-.304	.544	-.567	.561	-1.063	1.110	-.065	-.650	-.082	.000	
PE2	-.175	-.005	.937	1.647	.111	-.328	.342	.220	.009	-.474	.221	-1.673	.308	-.210	-.847	.651	-.008	1.090	-.154	.760	-.856	.714	-.096	-1.318	-.108	.081	.000

Table D–14 Standardised Residual Covariances

	BI4	BI3	BI1	TR6	TR4	TR3	TR1	TR2	PV3	PV1	PV2	HM3	HM2	HM1	FC3	FC1	FC2	SI3	SI2	SI1	EE4	EE3	EE2	EE1	PE1	PE3	PE2
BI4	.000																										
BI3	.019	.000																									
BI1	-.171	.005	.000																								
TR6	1.265	.331	.844	-.069																							
TR4	.531	.271	.810	-.009	.000																						
TR3	-.097	-.768	-.245	-.592	.000	.000																					
TR1	-.523	-.589	.090	.029	-.021	.392	.000																				
TR2	.113	-.115	.402	.028	.027	.158	-.018	.000																			
PV3	.621	-.512	.503	.445	.296	-.571	-.972	-.291	.000																		
PV1	1.536	.083	.485	.591	.121	-.241	-.910	-.079	.025	.000																	
PV2	.697	-.093	.892	.887	.630	-.186	-.354	.286	.013	-.046	.000																
HM3	-1.016	-.827	-1.436	-.176	.221	-.646	-1.052	-1.306	.639	.887	.261	.000															
HM2	.137	.245	-.014	.820	.710	.201	-.466	-.507	-.314	.748	-.446	-.036	.000														
HM1	-.210	-.032	.271	.767	1.028	.208	-.142	-.044	-.058	.716	-.182	.144	-.022	.000													
FC3	.206	.210	.371	.262	-1.079	-.408	-.064	-.767	.381	-.679	.290	.342	1.203	.202	.000												

	BI4	BI3	BI1	TR6	TR4	TR3	TR1	TR2	PV3	PV1	PV2	HM3	HM2	HM1	FC3	FC1	FC2	SI3	SI2	SI1	EE4	EE3	EE2	EE1	PE1	PE3	PE2
FC1	.795	.799	1.048	.964	-.068	-.137	.155	-.100	.072	-.247	.038	-.734	.193	-.121	.133	.000											
FC2	-.484	-.525	.423	-.026	-.757	-.462	-.059	-.253	-.091	-.371	.145	-1.202	.311	-.407	-.204	.127	.000										
SI3	.598	.979	.943	.813	.883	.247	.088	.530	.547	-.042	.590	-.004	.093	.451	1.014	-.094	.496	.000									
SI2	-.656	-.259	-.485	-.579	.504	.881	-.057	.070	-.135	-.121	-.569	-.151	-.606	.017	.408	-.164	-.380	.022	.000								
SI1	.310	.294	-.236	-.099	.947	1.280	.375	.961	.864	.980	.365	.138	.263	.821	.804	.212	-.116	-.187	.029	.000							
EE4	.128	-.108	.626	.187	-.636	-.315	-.599	-.300	.233	.404	.388	-2.082	.349	-.483	1.505	-.153	.328	1.082	.370	1.466	-.005						
EE3	-.349	-.184	.228	.228	-.426	.282	.057	.304	.433	.272	.110	-1.487	.887	.033	.034	-1.421	-.532	.088	.139	1.493	.022	.000					
EE2	.103	-.012	.935	.210	-.473	-.105	-.359	-.138	.151	-.016	-.444	-1.202	.699	.002	.069	-.825	.612	.194	-.933	.331	-.040	-.026	.000				
EE1	-.025	-.016	.743	.186	-.614	-.167	-.246	-.035	-.190	-.259	-.611	-2.298	.239	-.665	1.233	-.274	.318	-.661	-.590	1.195	-.009	.065	-.008	.000			
PE1	-.310	-.369	.120	.342	-.377	-.263	-.104	-.196	.210	.176	.133	-.159	1.038	.165	.280	.711	.339	.441	-.564	.316	.835	1.814	1.477	.364	.000		
PE3	-.053	-.017	.660	.040	.119	-.770	-.535	-.607	-.207	-.460	.191	-1.653	.304	-.130	-.904	.799	-.306	.540	-.567	.559	-1.084	.825	-.290	-.662	-.082	.000	
PE2	-.183	-.009	.929	.622	.146	-.228	.170	.039	.008	-.476	.216	-1.675	.304	-.213	-.836	.647	-.018	1.081	-.159	.753	-.887	.418	-.333	-1.340	-.120	.087	.000

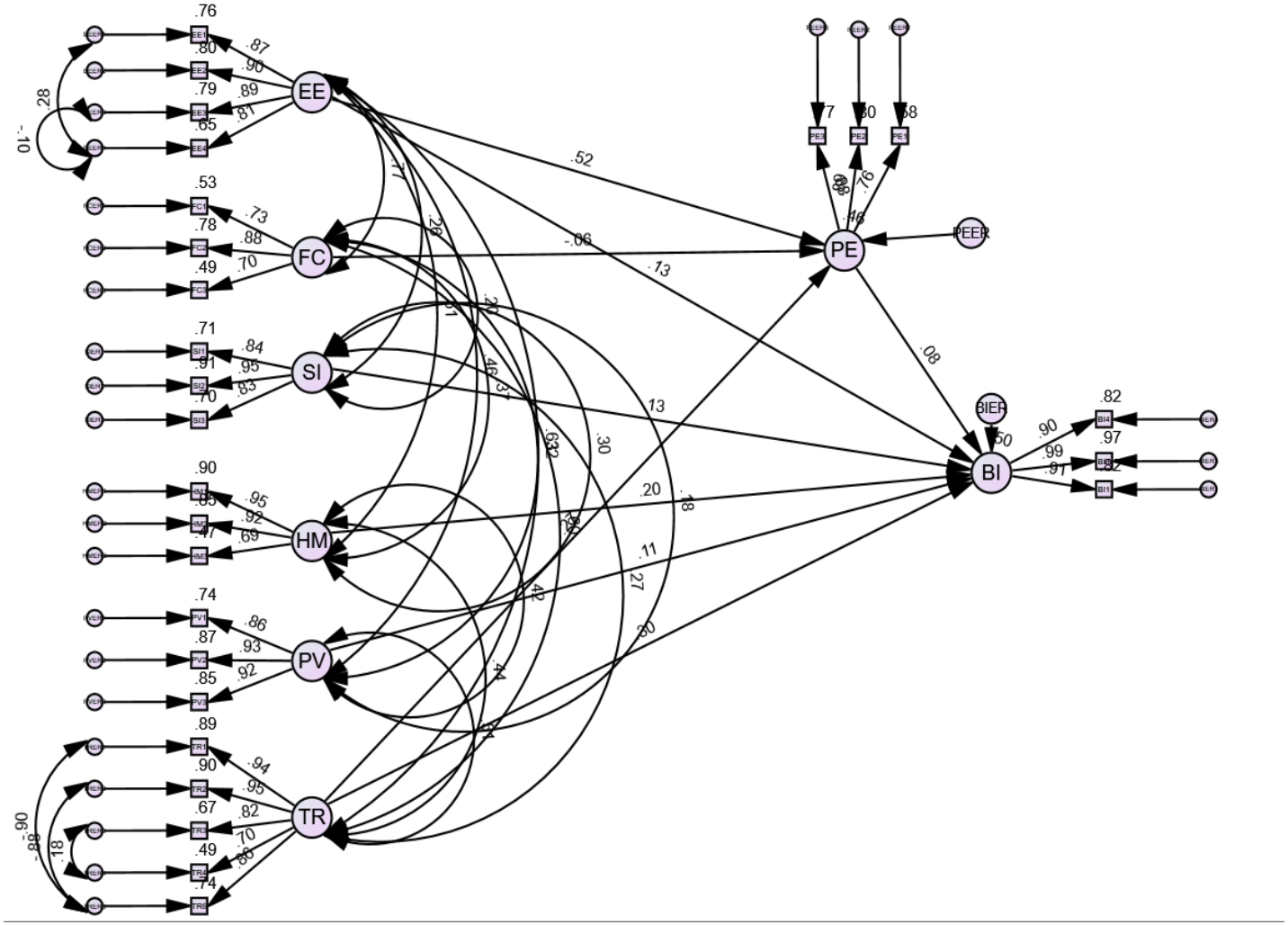

Figure D–2 Base Standardised Structural Model

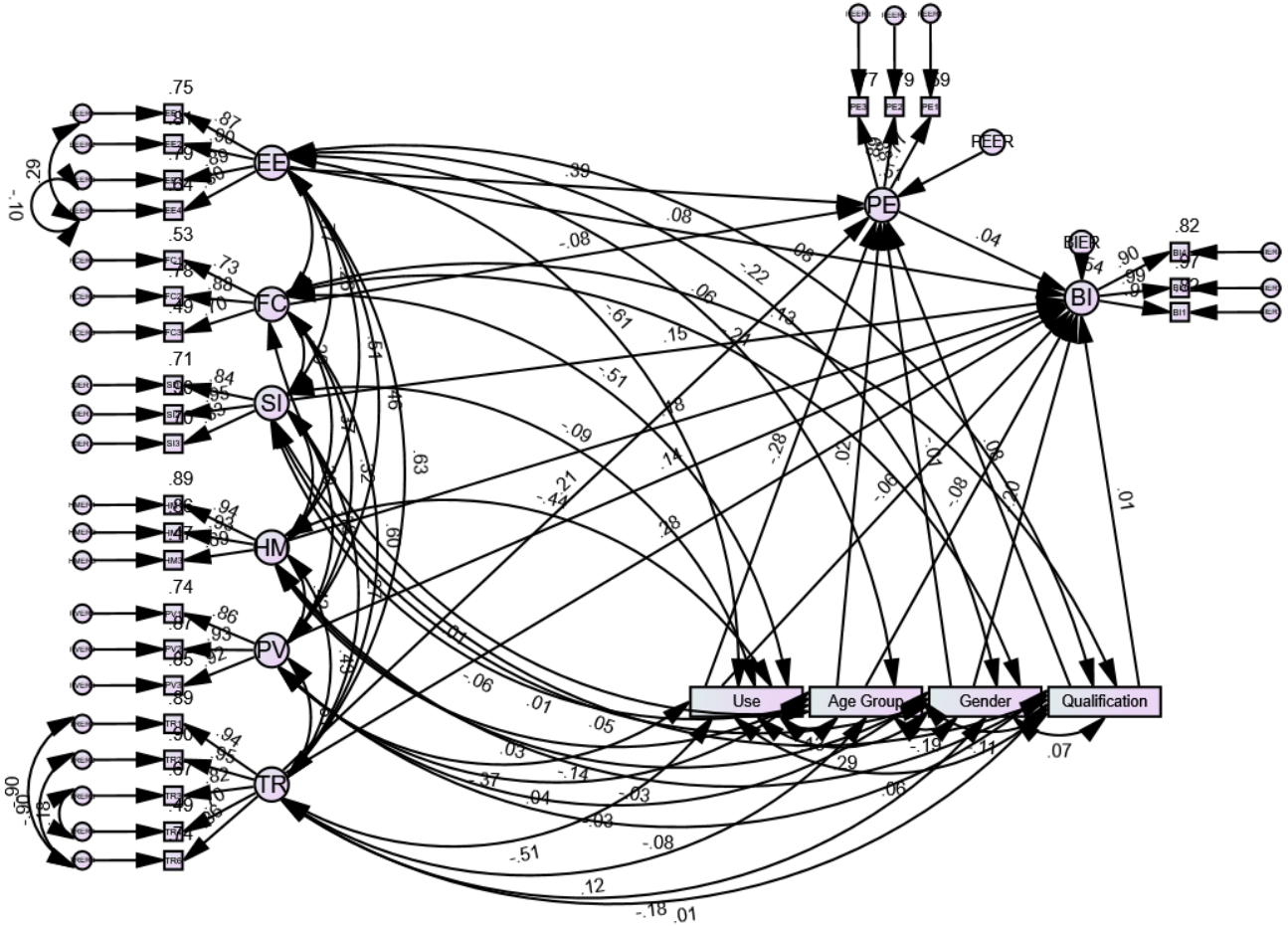

Figure D–3 Standardised Structural Model with Control Variables

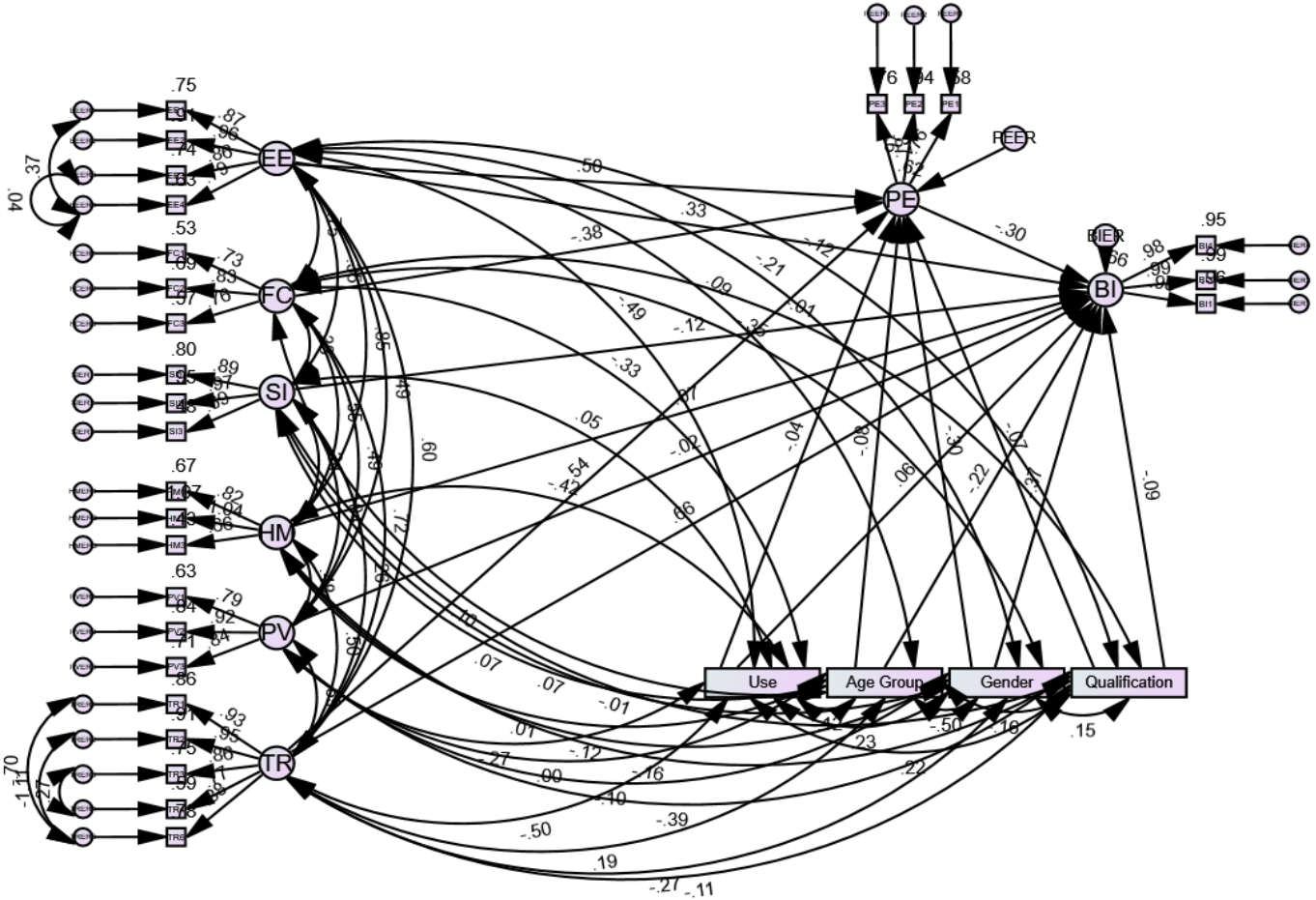

Figure D–4 Standardised Structural Model BFL Low

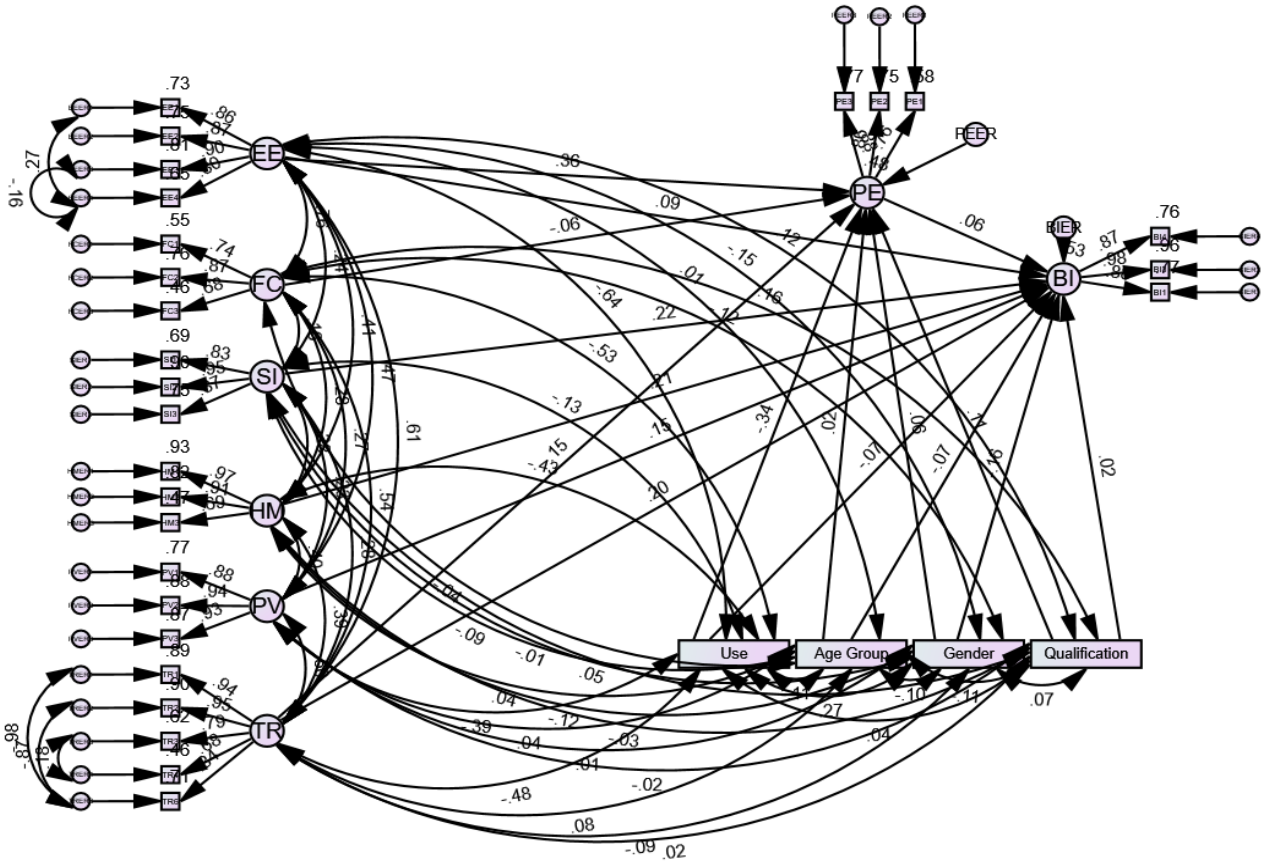

Figure D–5 Standardised Structural Model BFL High

APPENDIX E Semi-structed interviews questionnaire guide

Table E–1 Semi-structed interviews questionnaire

Type of Question	Interview questions
Broad questions	**Opening Questions** What would you say are the broad drivers affecting the adoption of online share trading in south Africa?
	How does this compare with other geographies?
In-depth questions	**Gender** The study saw very low participation from females; why do you think that is the case? How does it compare to the observed participation in the market?
	Age The study saw even broad participation from participants between the ages of 26 and 55. What role does age play in the adoption of online share trading?
	Highest Education Qualification An overwhelming majority of respondents had a bachelor's degree. What role, if any, does educational qualification play in the adoption of online share trading?.
Clarifications and link to theory	**Performance Expectancy** The study does not find a link between the promise of profitable investments/trades or achieving investment goals and the intention to adopt online share trading? Why do you think that is the case?
	Effort Expectancy Like the previous finding on the ability to make profitable trades, the study did not find a link between the promise of ease of use or effort associated with using online share trading and the intention to adopt it? What are your thoughts on this finding?
	Social Influence Family, friends, and peers come out very strong as the online share trading adoption driver. Why do you think this is the case?
	Facilitating Conditions The availability of support and compatibility did not influence the adoption share trading. Why do you think that is the case?
	Hedonic Motivation

Type of Question	Interview questions
	The fun factor and enjoyability of using online share trading were significant influencers towards intention to adopt. How can one explain this factor when considering the risks of using online share trading?
	Price Value Reasonable pricing or perceived value for money was a positive influencer towards adopting online share trading. Why do you think this is the case?
	Trust The trustworthiness of the service providers was the most critical factor in adopting online share trading. Why do you think trust plays such an important role?
	Basic financial literature Basic financial literature had a limited impact on the adoption? How can that be explained because online share trading deals with financial products?
	Platform strategies What role do you think platform growth strategies influence the adoption of online share trading?
Broad question	**Closing question** Is there any other factor affecting the adoption of online share trading that was not examined by the study, which you believe is critical? And why is that the case?

APPENDIX F Interview transcripts

i. Interview transcripts for P1

Date: 14 December 2021

Time: 14h30

Duration: 37:10 munities

Greetings and Introduction

Background to the interview

Consent to proceed and recording

NB: Participants provided were sent the participation information sheet before the interview and provided written informed consent before the interview.

Researcher

The first question is, what do you say are the broad drivers affecting the adoption of online share trading in South Africa?

Participant 1

So, I think I mean I think in the short term, in the immediate it's been the pandemic. I mean the lockdown of last year. People couldn't go anywhere. We saw shares likes SASOL at 20 Rands, etc and that obviously had a so a huge run of people into the market. But I think the adoption predates the pandemic, the pandemic perhaps accelerated it, but I really thought that there were broadly two drivers. One was access if you go back to the 90s. You had to phone your stockbroker and communicate with them. Obviously we got online from Standard Bank in around 1999.

Participant 1

More recently, we've had the advent of apps on your cell phone in your tablet, and that's just made it easier and made it more accessible, made it less scary. You know, you phone you're broker you tell them to buy a share. You worry they're going to laugh with you, and then I think the other key point is, is price again, again we've seen fees from the stockbrokers come down markedly. We've seen the minimum amounts decrease. We've seen the like of EasyEquities who offer no frills, but they also offer no admin fee, no minimums.

Participant 1

So suddenly, instead of needing, you know 10, 15, 20 thousand Rands to do an economical transaction, i.e., a cost of under 1% all inclusive. Suddenly you can do it for 100 bucks. So, I think initially it was that Internet and then I think it's pricing.

Researcher

Yeah, and how does that compare with other geographies?

Participant 1

So, it was probably I think the Internet has largely been the same and that it sorts of came up the late 90s early 2000s. We saw a fair move by brokers the world over into an online environment and more recently into the app economy, and I think pricing as well, although. I think a lot of the pricing was probably more aggressive. I mean, I looked at America where they had, you know, some of them Scott Trade in the like they are down at $5. We've now suddenly got $0.00 pricing if you look at Robinhood which kind of brings the two together in that it's an app only and it's 0 price.

Participant 1

Now you know those in the industry understand that in the background there's a price and order flow, and all of that, but to the user, we've seen a zero fee. What I also think, and I've played with the Robinhood, though we can't use it because of our, are we going to geolocate yourself?

Participant 1

Yes, there's a huge amount of gamification, which is something we haven't seen much in the in South Africa or Australia, or even really in Europe. But I mean everything about Robinhood is, you know you do a trade and there's balloons and fireworks. And it's that it's that huge gamification of it. And again, I think during a lockdown period when folks couldn't go and play games or outside or bet at casinos, they kind of move to the Robinhood's of the world.

Researcher

Moving on so some of the findings. We observed a very low female participation compared to male, it was something like 30% female and 70% male. Why do you think there is a case and is that representative of what is observed in the market?

Participant 1

From my experience, 30% participation probably is rare in the retail market. Interestingly, anecdotally, you know, typically, I think women makeup better traders and often better asset managers, but they're not very representative in industry either, so it is a male dominated. I think one I I've had this conversation with many people over the years.

Participant 1

One in the simple thing you know you we do an annual survey of our users, and the one point is, and we always comment where are the woman and the woman would reply they are busy. You know, raising children and etc haven't got time for a 10- or 15-minute survey and then it's I think also just good old fashioned gender stereotypes where there might be more women out there who are actually partaking. But they they're not confident enough to sort of put their hand up and say I'm here.

Participant 1

I'm female and I'm part of that process and then of course the final sort of a sort of gender stereotype is, you know, the household often the finances are the

domain of the male, whether he does it well or not, it's not the relevant point, but it is at the domain of the male and sort of, you know, the woman must look after the child and keep the house clean, and the man will look after the money. But in my experience from live presentations, from running surveys etc, but the largest number you get of female is around about a 30% and in cases even sub-20.

Researcher

And your thoughts on the role age, play in the adoption. What we saw in the study was around 70% of respondents were people between the ages of 26 and 55. I don't know whether that is a symbol of just where the survey was distributed or if that is also indicative of market participants in adopting online share trading?

Participant 1

I think a bit of both. I mean it, it's indicative of market participants because I think a lot of the older generation when they started investing and when they were at their peak earning careers etc. There wasn't online trading. You were using collective investment schemes. You were going through a broker via one of the insurers buying retirement annuities and endowments and the like.

Participant 1

And then this newfound excitement online thing came and they kind of missed it to a degree. But I also think it is to a degree at a technical barrier where you know the young kids are to them, mobile phones, tablets, computers, websites are just completely second nature.

Participant 1

You know, I'm early 50s. I didn't access the Internet until my early 20s, I mean, I'd never had it as a teen. And the folks here you know, 10 or 15 years older than me in their mid to late 60s or early to late 60s they didn't get the Internet until they were sort of in their 30s and kind of set in their ways. And they looked at it and

thought, yeah, but I've got an endowment and retirement annuity for a time, or whatever the case is.

Participant 1

So, there are folks you know, there's a chap I know who's probably in his 80s and he's out there and he's got an EasyEquities account and trading up the storm. But I think he's the exception rather than the than the rule.

Researcher

The other unexpected observation, almost 80% of the respondent had at a minimum of a bachelor's degree. It was a combination of bachelor's degree and postgraduate. Do you think this plays a role in the adoption and if so, how?

Participant 1

I am very surprised to hear that I, I really thought that one of the whole points of making it online and the like is the democratisation of it and democratisation in terms of education qualification. I've always said that that investing in the stock market is not rocket science, but that the industry in the olden days made it seem like rocket science as a barrier to entry.

Participant 1

Uhm, you know the brokers from the 70s, the 80s, the 90s would say look, you can't do this. Give me your money, we'll do in your behalf. And then of course they would charge fees. The truth of the matter is yes, you can get complicated with discount cash flow modelling and all of that sort of thing, efficient frontiers. But at the end of the day, you know. I am not a genius in the room, and I can look at a company and work out if it's good or bad. Work out if there's too much debt. I might not be able to do a Sharpe ratio, but I can put enough together to make a fairly good, informed decision.

Participant 1

I don't have any sort of tertiary degree whatsoever, so I am surprised by that, I thought it was a lot more, anybody can come in, and maybe it's a perception issue

more than anything else that someone sits there and they're like, I only got a matric. How could I possibly be smart enough, I mean the truth is , you are plenty smart enough, but maybe it's sort of that that hangover from the industry which has said you know simply can't help, and then it ties in with interesting stats which I saw from the unemployment data two weeks ago, where and I suppose it's not surprising in a degree, but the chasm between graduates and non-graduates is in the employment space.

Participant 1

You know, if you don't have a degree of a sort, your odds of being employed or markedly lower, and maybe it's just a function of economics, don't have the Rands and cents.

Researcher

Moving on to the next one. So, we used a technology adoption model as a tool of assessing some of the factors and they had a I think about 8 or so constructs. One of the constructs that we used and adapted it to online share trading is core performance expectancy. And in this instance it will be the expectation that investing in the stock market, you'll get better returns because that's really what you are doing, or you will actually improve your financial situation in the long term. But what we found was this factor did not actually play any role in driving adoption. Why do you think that is? What are your thoughts on this?

Participant 1

Well, I mean again, an amazing discovery, because obviously the stock market is there about you Do-it-yourself to beat the index and you do it to ultimately create wealth. Maybe it is that almost gamification, I mean, I mentioned Robinhood a moment ago and how a lot of the increase in Robinhood was put down to you know people couldn't get out and do activity, so they were on the app like EasyEquities. You know people couldn't get to the casino, so they were literally gambling on the on the stock market rather than the roulette table or the or the slot machines.

Participant 1

And maybe it's also some of the FOMO where you know you see your friend having fun doing something that's new and innovative something that's not got that mass adoption. Uh, because even if you know whatever the number of clients is in South Africa, it it's relatively small. It's, you know, as a percentage of economically active, so maybe it's around more than anything. It's around role models around he's having fun. I also want to have fun. He's happier than me because he's got a stockbroker account. Therefore, I want one as well. And maybe it's us old school boring folks who think it's all about wealth creation over the long term.

Researcher

So, the two comments that you made actually, was in line with what we found. Social influence, the role of friends, family, and peers that had a dominant effect on adoption and the fun factor in driving adoption. Combining these two things they and going back to what you have raised early on because these were the part of the two factors that were quite dominant in driving adoption.

Participant 1

Yeah, and I know from personal experience I notice from speaking to some of the online share trading platforms locally that their single biggest driver of new clients is existing clients to the point that some don't even bother marketing, they just let the existing clients sort of be that marketing, and whether it's a friend and you know, hey, I'm having fun and join me, or perhaps it's someone talking to a sibling, or perhaps even a parent and saying, you know, come on Mum or Dad or Granny or Granddad, you know, take responsibility and do some of this in your own. The fact that it's more within the fun / social circle, yeah, makes some sense.

Researcher

But you know the fun element, to an extent It goes contra to finance where saying, there is an element of risk, so it may be fun, but you're going to actually, you could

potentially lose money. Why is it that people are actually ignoring the risk and just focusing on the fun?

Participant 1

So, it's a good, I mean it. It's a point I'm making in my presentation. If you're having fun trading, you're probably losing money. This should be boring, right, and maybe it's because I'm an old man, but it should be and you know what it is, I think it's the infinite belief people have in their own ability.

Participant 1

So, the fact that people lose money in the stock market in their first couple of trades or whatever never seems to discourage them, and I think they just always think well, if I lost now, I won't next time, and they don't even necessarily change what they did.

Participant 1

You know my view would be well if I did something and it did not work. I must change what I did and try again. And yeah, I didn't grow up in that generation of, you know. I came into the stock market via telephone trades and et cetera, et cetera. So, I don't know how I would have responded to it.

Participant 1

But there seems to be, and particularly in the in the younger sort of sector I speak to the generation Z who are like yeah I lost some money but that's fine, I will do better next time and interestingly, and perhaps dangerously. I've seen similar response from people who open betting apps, who start betting accounts, and they lose, and they're completely undaunted. They're just always convinced that that the fact that they've lost they'll be fine next time.

Participant 1

It's when they start to lose consistently and then they run out of money. No problem, they refund. They put some more money in, it's the person who goes to the casino four nights in a row and loses every night. At some point of course,

either they have to face the stark reality that they they're getting cleaned out here, or the even starker reality that they simply don't have any available funds left to refund the account, but I know certainly in some of the older groups people view it as ah, you know, it's discretionary money and if I lose it, it's fine, it does not matter.

Researcher

Another of the findings that came from the observation from the findings was the effort and the ease of use associated with online share trading did not actually play a role in driving adoption.

Researcher

What do you say about these observations?

Participant 1

I would say I would say they should go back to the 1990s and try get hold of their stockbroker and have to make six or seven calls because the line is busy, it's probably you know, particularly younger set again who have grown up with the Internet being ubiquitous within their life that to them of course, it's easy. Yeah, why would it ever not be easy, you mean you know there was another way of doing this? It's like when you show a young kid a vinyl record and they like, but you got to turn it over, like are off your head, hell, I can just stream Adele for the rest of my life. Why must I stand up and turn it every four or five songs that that sense that it's kind of always been like this and I mean it's easy but well, sure. Why would it not be, you know, wow would you make this hard, why would you make this hard?

Researcher

So, is this a function of they grew up around Internet and they grew up around technology, so for them It's not effort anymore, it's second nature.

Participant 1

Yeah, and this goes back to the earlier bit about your age demographic. Yeah, being mostly younger whereas person in there you know, late 60s , 70s, whatever the case may be, they still find the Internet not necessarily difficult, although in some cases but actually just a little bit daunting. And I know I've said to some older folks who look at the websites, and I think they're a thing of beauty and a ton of information and they just like movement. This is terrible. Can I just phone somebody, it's like no, you can't phone somebody, yeah?

Researcher

Again, linked to the effort expectancy. Yeah, one of the other factors that also came in is when looking at the availability of things like support and familiarity with technology. Compatibility of online share trading with other technologies that also did not play any role in in driving adoption.

Participant 1

So, you know what I see all the time, I mean, I see people who've got a problem with a with one of the online brokers in South Africa, a technical problem, or they think they've been ripped off in dividends or something. They don't go to the broker; they don't phone the call centre or submit an email or something. They go into social media. They go to Facebook. They go onto Twitter, and they find support from the community rather than the organisation. And you know, outside of your remit it's almost a trust issue you know, do we really trust those boring institutions they're trying to, you know, whereas your community on social media who you might never have met these people and half of them are using fake names. There's a much stronger sense of community and trust.

Researcher

So, talking about trust, trust was one of the elements that we actually examined, and it came up very strong that the trust in the service provider that they will do what they are selling was one of the main things that people said it will actually drive them to adopt Online share trading or not?

Researcher

But then how do we combine the two things we're saying? I don't have to go to the provider, but I'll go to the community, but I need my service provider to be trustworthy.

Participant 1

Because I think there's a lot of talk around, you know I use them because I trust them. But then truthfully, I think there's very little research being done, whether they are being trustworthy and as evidence. I would present the Mirror Trader International scam, which was the Bitcoin one that collapsed I think in the middle of last year and dozens and dozens of others of these I get. I get a couple of contacts every month. Someone who's been scammed out of, you, know an FX scammer on Facebook or something like that. And I remember with the one person in particular I kept him saying to her, but he's stolen your money and she was like no, no, he hasn't. He's trusting, he's a trusting. And I'm like well. Then why won't he give you your money then, you asked for it and she was an absolute denial.

Participant 1

She had decided he was trustworthy, yet as far as I could work out, she had that done no research in it except for perhaps some friends who had said to her hey, you know this guy is making great money for you, et cetera, et cetera.

Participant 1

I mean, I said to her, you know, I mean, things which to me and again maybe as a as an oldie you know, did you check on the FSCA? Did you know? Are they registered and stuff and she's like no and I remember the one line in particular? He had a really good website right, and it's like you know and what I would consider to be a requirement for me to trust was just absolutely missing.

Participant 1

And as I said, I mean, I remember with the Mirror Trader International I did a couple of articles on it, and I just got hate mail. I just got more hate mail over

anything else on how I was wrong and how I was going to ruin it for everybody else, and how joining Steinburg was perfectly trusting and etc.

Participant 1

Yet any research, I mean, Google research, showed you that the Texas Security Commission wanted him for fraud. I mean, it wasn't a hard thing to unravel.

Researcher

So, you're saying they trust that people are actually looking for it's actually superficial, trust not necessarily deep. Trust that it's based on either strong regulatory environment, strong operating model. It's more of a perception of an organisation being trustworthy to be able to do what they promised.

Participant 1

Yeah, and I think I agree with that and then tie in with the earlier comment around family friends' recommendations via that route. That said, the trust is easily broken. I mean, you know you it you will deny it as long as possible, but as soon as it's evident that the trust has been broken and then it is severed. I suspect I mean, and the trick is that when people finally come to admitting that they've been scammed, they never then come back to me. They come to me when they're trying to get their money back and I'm still in denial. I never then get that that follow up conversation.

Researcher

One of the things you mentioned in the beginning was value for money. Value for money came out very strongly as one of the main drivers, but you covered that as one of the factors are in the beginning that the reduction in prices it obviously driving volumes. I just want to confirm that.

Researcher

We examine a construct from behavioural finance or economies where we tested basic financial literacy and the intention to adopt online share trading. So, we actually found that basic financial literacy had almost no impact or the impact was

really limited. It had a bigger influence on trust than any of the other constructs, but overall, it had really no impact.

Researcher

How do you explain this when one takes into account that we're actually dealing with a financial product that people actually wanted to adopt?

Participant 1

Yeah, I mean, and I remember the question and I loved it because I've done that so many times. I know the answers and it is there is a financial literacy, I think the world over is probably incredibly poor at the level at which we would consider financial literacy. I think people consider financial literacy that you know when they buy something that costs 20 Rand.

Participant 1

If they give the guy 100, he'll give them back 80 and they, like you know, that's actually arithmetic. It's not financial literacy, but I think that's a lot more around it than the really understanding the nuances, understanding percentages and, and you know when you start delving into stock markets, there's a lot of those formulas and ratios, and all of those sorts of sort of messy things. I think to them you know, bought SASOL at 20, sold it at 200, you know? Did I make 100% to 1000%? Don't know I. Made a lot of money.

Participant 1

And that level of financial literacy which we would think would be a prerequisite, isn't there. And maybe it's partly because we've almost made it too easy, right? Your FICA requirement is a, you know, an ID number, a selfie, and an address, and then you deposit 100 Rand. Almost too easy and I'm not knocking it should rather make it easier than not, but financial literacy is something which is scarily missing.

Researcher

We want to move away from the survey. Another subject I wanted to explore with you. The online share trading platforms by their very nature they are part and parcel of the platform economy.

Researcher

So, what do you think, let me put it differently to what extent? Do you think the platform growth strategies are actually used in South Africa as a driver for adoption?

Participant 1

I don't think, not necessarily. I mean I've got far too many online share trading accounts for yeah many of them dormant and I yeah in in terms of changes to design usability to bringing in things such as HTML5. I see very little of that and its usually big leaps. There will be, you know, a decade between upgrades to a website type of scenario. So, it leaps forward rather than being sort of a constant, incremental, uh, process.

Participant 1

I think from the user perspective is that you know as long as it's kind of working and is easy to interface and intuitive, and the UI and UX is working, they're happy and I think from the providers perspective is you know if it isn't broken. Be careful because there is a risk here and I know it happened.

Participant 1

Of one of our brokers locally who did a fairly large upgrade of their website earlier this year and it just didn't work very well, and clients were locked out and angry and call centres were being swarmed with angry clients, et cetera. So, I think there's a very you know this is not.

Participant 1

If your local website telling you about where the beers are in special goes down, yeah, not the end of the world. And if your broker goes down, I mean you can really be losing money here.

Researcher

If you look at let's say strategies that are used by the likes of Robinhood or Facebook. Let's maybe use Robinhood as an example where they essentially adopted a different business model to also try and grow their business. Do you think those kinds of models or similar are in play in South Africa or even under consideration that will lead or is currently leading to an increase in in adoption, if any?

Participant 1

I don't know that it is. I mean, I was looking at the last set of Robinhood numbers because now of course they listed and what struck me is that revenue from equity trades is quite small in their life.

Participant 1

Robinhood is basically an option trader, I mean that's where there making the vast majority of their money and then of course crypto. What we do have in South Africa is a distinction between equities and investing in crypto, there's, uh, there's crypto exchanges, but you go to the Luno's knows that. Bitfinex, you don't really expect that with only one exception. EasyEquities have got a crypto bundle, but otherwise the other brokers are more vanilla, and I think the whole options which exists, and we've got warrants and there's CFD's and everything else, and I think there's a concern in the industry to push it too hard because of potential backlash from users which could then result in you know scrutiny from regulators.

Participant 1

In terms of pricing, for example, you know EasyEquities were the first to come in with a 0.25% no frills type of scenario. There's been some competitors to it, but the competitors are struggling to gain traction compared to EasyEquities. And I think that, again, is that my friends are all here, this is the hip broker, sorry, who are you like, you know, and they haven't come in at, you know someone came at 0 brokerage different game entirely, but if you just come and match the existing.

Participant 1

You're not going to win the audience and I'm not sure of the feasibility of the Robinhood is making money on the premium within options the and the arbitrage on crypto's and then of course the deal flow on equities and I'm not sure any of those are massively viable for South African stockbrokers in the online share trading space.

Researcher

Do you think the winner takes all model, it's applicable in South Africa were the first one to do something is the one who will then gain the lion share of the market? You used EasyEquities as an example. So, if someone had to do a Robinhood type business model, will others then struggle to potentially copy that in their growth strategy?

Participant 1

So, I hadn't thought of that before, but I think I think in part maybe you're right and particularly EasyEquities, now, as example, we're seeing EasyEquities, like their last set of results, which was end of August. They had almost three quarter million funded accounts and a total addressable market of probably only seven and a half million South Africans, and that's the economically active earning over about 10 or 12,000 Rands per month so you know they've got a, massive head start, and I think for if you came in and copied the EasyEquities business model, I think EasyEquities owns that space.

Participant 1

Now, if you came in and did something different and maybe said zero brokerage or whatever it was, you'd have to be fundamentally positioned yourself different to EasyEquities. And then I'm still not convinced you would necessarily win. You would, at least, I think, have a fighting chance, but I think if you just come in and match them, I think your odds are very, very small. They've got the lion share. It's like the hip club, you know there might be a better DJ with cheaper drinks down the road, but everyone is that at that nightclub, so that's where you're going.

Researcher

So, the last question looking at various factors that we have discussed and examined. Is there anything that you think is still driving adoption that we have not touched on? So, you mentioned covid in the beginning, gamification which was I guess half came through in the study in terms of the fun factor. Is there anything else that we believe is driving adoption in South Africa that we have not covered?

Participant 1

No, I mean, I think it is it. It's that it's covid, gamification, friends, family, not pressure, but you know the FOMO more than anything else and the technology and price I think is now in place.

Participant 1

That kind of has happened over the last decade, and I think those are the key drivers, the one other thing which is also becoming a little vanilla, and that everyone has it, is the ease of access of offshore markets, which a decade ago was hugely complex.

Participant 1

But again, you know if you offer offshore, you're not just like everybody else, it's. You know, maybe if you offered like Russia, that could be interesting, but I'm not sure anyone who wants to invest there.

Participant 1

Everyone wants to go buy Tesla or Apple or whatever, and well, you can, it's easier now.

Researcher

A follow up question on that, do you think, the availability or the ease of access to other markets has also improved, people are investing in South African stocks or adopting South African platforms to be able to access offshore stocks.

Participant 1

I think so, because people are nervous about going to an institution offshore, even if it's you know Vanguard or, you know, one of the big brand names. That you know truthfully, they can come to the EasyEquities offices or Standard Bank or PSG or ABSA and picket at the door? Or you know whatever the case may be, I think they like that locality to it and the fact that they can then do it within that home trusted brand and access offshore I think does give a lot of comfort. I know folks who have gone offshore and done offshore platforms and I see often on chat forums, but they will be like you know it's a better deal it's cheaper, it's whatever the case may be, and folks are like, yeah, but like you know I know my broker and when they say no It's not a personal relationship, it's a brand relationship in a sense, and I think that's important.

Researcher

Is it fair to then re-connect this to that element of trust to saying I trust this brand, I know this brand so that is the only reason why I would actually use that compared to an unknown entity?

Participant 1

Yeah, agreed 100% and then trust often gets thrown out the window, oftentimes, you know someone messaged me the other day. Some broker registered in the Seychelles where the FICA requirement was an email address. And I'm like, but what's the story? I know, but they can give me 20% a week return. When there's suddenly the option of being rich in a hurry, I think trust goes out the window.

ii. Interview transcripts for P2

Date: 14 December 2021

Time: 16h00

Duration: 31:15 munities

Greetings and Introduction

Background to the interview

Consent to proceed and recording

NB: Participants provided were sent the participation information sheet before the interview and provided written informed consent before the interview.

Researcher

The first question is more of a general one. What would you say are the broad drivers affecting the adoption of online share trading in SA?

Participant 2

So, I think obviously the biggest driver is obviously digital adoption as well as access to low-cost internet. So, access to a smartphone or a device or some sort of online portal that's going to help people access online platforms. So, I think, digital adoption driven by access to, some sort of device portal platform and the inability to access is probably related to that data costs data driven.

Researcher

And how does South Africa compare with other geographies?

Participant 2

I think it's still quite low. I think if you think about, internet penetration and the likes. I think it's definitely much lower than sort of first world countries, so I think

we probably have a percentage of closed, about 20 or 30% say you know for the country. I think where it is in the states it's much higher, probably closer to 80% to 90%.

Researcher

So, coming back to the study. We saw a very low female participation so around 30 odd percent of participants being females.

Researcher

A two-part question. Why do you think that is the case and is that reflective of observed behaviour in the market?

Participant 2

I can tell you for sure, I think even in our base. Well, just generally what we find is that I think as low as maybe 15% will make up your sort of customer base in terms of the female demographic and 85% is still pretty much male. Reasons why I must say I think it still plays to the traditional role of a female in a household. You know they'll obviously take the responsibility of becoming home makers to a larger extent. And then I think also to some to some extent it's also just education and risk appetite, whereas you know from the participants that we do have that are female, I guess still prefer very much to take a very cautious approach to investing so that element of risk in stock markets do drive them away I suppose that demographic.

Researcher

So, the second observation that we saw is that the bulk of the participants were between the ages of 26 and 55. We had very low participation below 25 and below and very low participation above 56 and older. But how would you explain that and also comparing it to observed behaviour in the market.

Participant 2

It that does make sense. I mean at the lowest end of the market it was previously crowded out in just in terms of high barriers to entry. So, you probably needed at

least 25,000 Rands in terms of free cash flow to start up a broking account otherwise it did not make sense. I think EasyEquities have done good work in the sense of lowering those barriers to entry, so I do think that will change and you will find it a little bit different, as the younger generations of the demographics have access to platforms and portals with the likes of fractional ownership and that definitely is a growing trend that I'm seeing that now you know; you're getting people that are in high school and varsity that are starting to you know, become interested in markets, not necessarily the equity market, but more broadly the crypto market, but the interest in you knows buying or selling an asset for a higher price is definitely becoming more popular between those lower entries.

Participant 2

So, I think yes observed, then you may be so, but I do think why it becomes more obvious in the 26 to 55 categories. Obviously, just your availability of disposable income. So, as you are becoming a bit more mature in your career choices, you might have more access to funds. So, that will find a home in equity markets and online accounts.

Participant 2

And then I think over and above that, that whole 55 and above category, I think definitely it just speaks to, you’re winding down of riskier assets and then purchasing obviously more stable income streams for your retirement purposes. That's just the average life cycle of investing to say that you know you shy away from equities and go into more bonds or preservation funds or living annuities that will be a bit more stable as you draw down from your assets in later on in your life.

Researcher

The next one that we observed was that the bulk of the participants had a minimum of a bachelor's degree. That is a bachelor's degree and postgrad degree. Do you think that they play a role in adoption? And if so, how so?

Participant 2

I do think that if you have some sort of tertiary education, you are a little bit more confident in come, you know, picking up a company report or picking up some sort of material and reading and digesting it and just analysing it as much as you can so that you can make a knowledgeable choice.

Participant 2

So, I think anybody that is doing it just you know, purely on price, action and the likes is definitely speculating, and I think speculation come wouldn't necessarily be the bulk of any rational persons. Wealth or capital, so I think you'll probably speculate with a small amount of money, but if you understand this stuff more, and if you, a little bit more accustomed to how financial markets work then by all means you're going to trust yourself to at least invest your cash a little bit better than any financial advisor.

Researcher

So, one of the constructs that we examined, its performance expectancy. Essentially in the context of online share trading, it's looking at using your money to get better returns or getting a way to enhance your financial standing. From the findings, we found that that factor did not actually influence people's intentions to adopt online share trading at all. Why do you think that is?

Participant 2

That's strange. Sorry did you. Can you start again? You said that the premise was to say investing to grow your asset base.

Researcher

Online share trading is an implementation of stock market investing and people invest because they want to get better chance, or they want to grow their wealth. So, in the construct that was examined that was tested to saying, to what extent does the ability to increase your wealth or to get better outcomes influence one’s decision to adopt online share trading? It came out that that is not an influencing factor.

Participant 2

Wow, OK, that's actually taking me a bit of a curveball at my statement. So, I can't think of any other reason why somebody would want to sort of invest in markets if that's not their primary reason. I mean there must be some other reason in terms of affinity to a brand or affinity to a company or anything of that sort or ESG investing. Hey, but that's an interesting one.

Researcher

Linked to performance expectancy, what we also found was the effort that's actually required towards learning the new platform and actually using the platform that that also did not contribute as a factor towards adopting or not. So, if you made it easy or it was difficult. It was actually immaterial.

Participant 2

I think more likely that in just in terms of choosing a provider or choosing a platform, there has to be some sort of trust or element of trust with the institution that you are, you know, dealing with, you want to make sure that you are dealing with some sort of reputable brand that you know it's not some fly-by-night operator that's going to be running off with your cash to the some island so to speak, though I think that whether the platform it's easy or not it might not be as relevant as more around legitimacy of the service provider.

Researcher

So, trust actually came out as one of the main reasons that people put up to saying they will go with a provider that they believe will do what, they promised to do, but to what extent do you think the trust is actually real trust where people have done the research of the provider. Compared to the marketing of, you know, to say hey we will give you access to all of these fancy things and then people run away with their money.

Participant 2

So, I think it's more around the perceived elements of trust. So, you just take the four major banks if you have some sort of, let's say a fraudulent claim on your account or whatever it is. You know that there are recourse and remedies that you can get based by on the FAIS Act as well as you know you've got the FAIS ombudsman or some legal channel to feed through the JSE and raise your query or complaint. Whereas with these international providers that are domiciled in all these crazy jurisdictions it might be a little bit harder to find some recourse with them. So, I think that just terms of you know, I trust Standard Bank because I see the big blue brand and they've got an office that I can go do in cause a ruckus in the foyer does give people some sort of comfort that there's a warm body that they can engage with in the events that they need to.

Researcher

One of the other big factors that came out it is the role of the social networks and social influence. That is friends', family and peers, it was one of actually the strong factors that drives people towards adopting online share trading. Why do you think that's the case?

Participant 2

Definitely, especially with money, I think it's the plays the biggest role in financial matters or wealth as it stands is that yes, you'll have an idea of what you want to do. Yes you'll think about, you know a certain provider or player that you would want to engage with, but the fact is that when our friend or family gives it that rubber stamp. It almost gives you; you know plants a seed in your mind that you know if it works for this person whom I trust I can, I can go along the journey and also, that almost becomes an ambassador for the brand that service provider. So, if I told my uncle coming trade with broker Anonymous. You be sure that whenever there's a problem with the broker Anonymous, he's going to call me up first thing and figure out why did this go wrong or what happened in in that. It's just that having that association of somebody that you know within your network to rely on as it is better and that's why I was among friends works so well.

Researcher

So linked to that, one of the other findings that we found was the brokers ability to provide support or their compatibility with the existing tools in the market, actually that did not play a role at all in people's intentions to adopt. How do you explain that, or do you think that is linked to the social influence factor?

Participant 2

I think it is. It's definitely that social factor, but I also think that the market has, or the industry has matured it to a sense that everybody is on a level playing field. I mean, you're not getting anything different from a Standard Bank versus in FNB versus in Absa versus Investec. Your baseline of services is pretty much a bar here in there, you'll get one or two other cool features, but it's not going to be sort of really differentiating things that will sway you dramatically from one provider to the other. Like I said, the only one that we've seen in terms of just someone creeping up into the market is the likes of EasyEquities with this whole fractional ownership with getting a slice of a rental property and likes and that's obviously speaks to a younger demographic per se, but let’s call it you know 80% of the market where there's material wealth that don't need those lower end services.

Participant 2

All the players in the market can provide pretty much like for like basis. I think what's becoming a bit more prevalent is that there are some standout advisors from that when they build up a material amount of assets and wealth, that particular individual if he served particular base well enough over time comes then, that that person will move with that individual or that broker, if as long as he goes from Investec to Standard Bank to Nedbank, wherever he goes, that funds will basically follow him because you know he's built up a decent track record with the client based any services.

Researcher

So, one of the factors that we also found too significantly influence people. It's the fun factor or the enjoyment associated with using a platform. Do you think that is compatible with what you're seeing? Or why would people be doing this for fun factors?

Participant 2

Look, I think I mean I didn't really believe the stock markets could be a fun place to be until lockdown of 2020 happened until we saw this influx of accounts and people coming and being interested in markets and the likes, and I think it also just, you know, speaks to the fact of Robinhood and they've done, you know, lots of things in the states in terms of their user interface.

Participant 2

So, when you do your first trade, there's a bit of a fireworks and confetti that splashes on the screen that makes you excited about doing your first trade or if you bought your first, CFD, they'll give you some more other badge or that so that whole gamifying your experience has promoted and attracted maybe a younger market.

Participant 2

And that's one thing on the side, but I think like the other demographics, it doesn't necessarily have to be fun, but it mustn't be a challenge. You mustn't ask me; you know 10 times. Are you sure you want to place this trade? Must I enter password? Would you like an SMS with it? So, I think generally as people are becoming a bit more comfortable with you know, digital interfaces and not just stockbroking. I'm talking about Internet banking or let's talk about online shopping or take a lot of whatever digital interface that they engage with. They then expected same quality and level of usability to come across in other platforms as well. So, a lot of the times you know people will say, you know I can pick multiple things that I want on Takealot. Why can't you just give me a whole list and I can pick the amount of shares I am buying like some sort of basket to bundle. You know it's they they're using some other mechanism of a shopping cart thinking that it's relatable to you a stockbroking account.

Researcher

So, the next one that also came out quite strongly is the pricing where people perceive that you know if the pricing comes down. Not necessarily coming down

but if it offers value for money, that would be a driver for adoption. What are your thoughts on that?

Participant 2

No, I don't think so. I think like cost the one thing and it’s not like brokers are charging 5% to do a trade anymore. Like I mean, baseline is probably 0.5% if not lower. You know with you know your higher end of clients. And like I mentioned with the likes of EasyEquities driving it down to 0.25 so the costs are not exorbitant per se. So, I say most of the time people will even consider paying a premium if they are comfortable with the service levels that they get. They happy with all the other interactions that they have with the service provider. And fine with that, so I don't think cost is too much of a factor anymore. And like I said, I think if it was, you know similar to the unit trust industry where you're paying 3, 4, 5 percent. You know, just for some element of advice along with your retirement planning products, then yes, then there's room to manoeuvre. But in the stock broking industry, I don't think so.

Researcher

So, moving on from the technology adoption side, we tested basic financial literacy. And examined it in the context of intention to adopt. We found limited impact on adoption. So, we found a small link to trust. But overall whether someone had low basic financial literacy or high basic financial literacy it had no impact on the adoption of financial trading. Would you say that is something that is observed in the market or how would you explain that?

Participant 2

I think it does definitely go back to your initial point around this element of, let's call it social investing. If my friend is buying SASOL and I don't know a thing about SASOL, but because he told me to buy it, I am going to just to close my eyes and buy it. That's the type of logic that happens where you have somebody who's maybe financially literate versus the one that's not I, I suppose, yeah, when they do think of investments, they almost think of it let's call it even the reason why people buy penny stocks. You know there's high low, low probability of a high

success factor. So, the reason why we buy Lotto tickets you know there's a small chance that they're on a big money at the end of the day, and that's probably what also happens. I also saw it throughout my own career as well

Participant 2

I mean when I first started out I had Mr Smith's shoemaker, who was one of my clients and he absolutely had zero idea about stock markets, how it works, anything of that sort. But because he used to sit around speaking with his friends that were talking about MTN's and he felt that he wanted to own a couple of MTN's, and shares and you know came in on bought. When you done deals with other people, and they will give you some Telkom shares and you didn't know what to do with them. And they like their enjoyment of phoning me up and saying, oh it went up 200,000 Rands today or whatever it was he liked having involved in that space regardless of where they understood how it worked or not.

Researcher

So going back to the few points that we raised earlier, so that means the social influence and the enjoyment or the gamification, they are dominating the adoption more than the logical reasons as to why one be each in investing.

Participant 2

For sure, and I think also. I think I don't know if this is just my own assumption, again, right, but I do think that within that social context, if you are a part of a crowd. There they speak about share prices in MTN and whatever it is or whatever is following markets, it almost is perceived as you have some sort of financial and business acumen.

Participant 2

So maybe in that social construct or your place in society if you understand markets and if you understand the element of these things, then that puts you on a, I suppose a higher footing than somebody. And element that comes into play because you know, just not to sound crude, but just you know sounding cool around the people around the water cooler. Well, was also to speak by talking

about all these share prices makes you sound smart and looks much could be a factor.

Researcher

Just again on on social influence. To what extent do you think social media actually influenced what people say or how people receive that information from their friends?

Participant 2

I'm not quite sure as in like the mainstream social media platforms like the likes of a Facebook or Instagram or Reddit.

Participant 2

Because Reddit also became very popular last year while they called it meme stocks. That was trending for bit, so I don't think too much around that.

Participant 2

But I do think that just in general mainstream media, you know how people will react to an article on, say, Twitter like a Financial Mail article will be written about one of the companies and then all of a sudden people will have an opinion and influence on that, or whether Dave Shapiro says something controversial so that that part does definitely play a factor. And I think people are just basically using these portals to express their opinion and express their views on a certain company or stock or event that might, yeah, influence markets.

Researcher

Alright, so second last question. If you look at the platform economy that has been driving various types of industries over the last couple of years, there's various strategies that those platforms are deployed in business models. Do you think those models, or those strategies are being deployed in South Africa to drive the adoption of online share trading?

Participant 2

I think there's two parts to it. There is a platform play that's within the online share trading space, and I think that still has to play out and venture out whereby you have two sides of coin always interacting on the same platform. So that means what I'm saying is that an advisor must be able to go to a marketplace and source a client that's looking for advice, so you have both on that same network and that has not played out in any major format. The only other system platform plays that's being very broadly spoken about among all players is having everything integrated as a one stop financial services shop. So, you must come to me for your wealth management. You must come to me from your retirement planning. You must come to me for your stock broking. You must come to me for your banking, all those things are commingled as the one stop shop, and I think that is pretty much the Holy Grail for every single big financial institution.

Participant 2

So, this, and that is definitely playing out, so that's why I think the platform strategy is working for some, but not for all. I think a lot of people are thinking that they know what platform means, but don’t know what platform mean.

Participant 2

To me it must have both sides of the equation, the supply and the provide and the consumer on the same platform and then acting with each other without you know any sort of influence by the platform provider.

Researcher

So, I mean, at the moment is it more hype in terms of what platform is but not necessarily being a true platform.

Participant 2

But if we just take for me the purest sense of what a platform is in Uber. So, the Uber, that's where you have the driver and the customer, and they come together on the platform and platform negates the controls how they experience it and how it looks and so forth. I don't see any provider doing that.

Researcher

But if you think of a broader ecosystem where you include maybe the JSE or any other exchanges. Do you think there is a thinking in that value chain where you're saying hey, how do you reduce the friction so that more people actually come into the platform that will benefit all the players overall?

Participant 2

I'm not too sure right because I think the JSE is also as well as any exchange is always going to be at a bit of a disadvantage if they ever tried to sort of become a player in that space as well. So, if they start everything come right directly to the JSE if you want to open up broking account, I think that will be looked upon very badly by all the market participants that they serve.

Participant 2

It's very hard to sort of govern the rules of engagement in an industry that's almost so embedded like stock broking.

Researcher

OK, so last question, is anything else that you think is driving adoption that we have not covered.

Participant 2

So, I like, I think locally, not so much, but I think internationally with regards to all these stimulus cheques that have been printed out. I think in some format or the other they have found their way into stock markets, and I think that's definitely driven adoption and then more broadly, just in terms of the period that we're in, where you know for some I've got lots of stories about hearing about pilots that couldn't fly during lockdown or still can't that had to take an alternative career choice and the stock market or trading becoming , an investor or trader. Short term trader it's quite easy to access. All you need is a couple of 100,000 Rands and your own account. Start speculating in stock markets so people I've done it for that, so uh, reason and yeah, I think just broadly having more, you know

resources and time during lockdown has contributed massively to the adoption and, I guess much more client growth for all online brokers.

Researcher

Do you think that, that client base? Will stick around once, normality returns or is that a transitory factor?

Participant 2

Well, I don't know because first of all you have to sort of make very broad predictions of what the future of working from home here to stay.

Participant 2

Potentially is the gig economy on the rise? Probably? Do people consider you know having multiple sources of income as you know, a way to broaden your wealth? Definitely. So, I think all those things in terms of How will we look at financial markets? I think yeah these elevated levels of interest will remain.

iii. Interview transcripts for P3

Date: 20 December 2021

Time: 10h00

Duration: 38:23 munities

Greetings and Introduction

Background to the interview

Consent to proceed and recording

NB: Participants provided were sent the participation information sheet before the interview and provided written informed consent before the interview.

Researcher

What would you say are the broad drivers affecting the adoption of online share trading in South Africa?

Participant 3

Affecting meaning either or?.

Researcher

Yes, working in favour or working against.

Participant 3

Working against, I think there's a there's no understanding from the broader market in terms of what is share trading. So, we're finding that the majority of people do not find it easy because of the jargon. Also, even if maybe you are doing some education online, it's still a foreign concept.

Participant 3

It's more or less people saying that I need somebody to take me through it. I need somebody that I can trust to actually show me. For instance, there is a broader

adoption of like your endowment policy, unit trusts but purely because there's somebody talking you through it.

Participant 3

So, I think the interface of learning on an online basis is still something that is foreign for most, for the majority of the people. I think there are other aspect is because of access to data. Access to data would be one of the things where people don't want to be online. It's still expensive to access data, and the other thing is how do I search for it? It's like I don't have the words for it. I don't know what it's called.

Participant 3

The professionals in the industry, they pride themselves by calling it equities and the man on the street doesn't call it equities. It's like want shares. I want to trade. And that is why the plight of these guys who lost money with forex trading. It's because all they want is I can see he is living large, maybe he knows what he is doing, and they follow.

Researcher

So, they're keeping up with the Joneses, not necessarily.

Participant 3

And keeping up with the Joneses. But it's also about what do I see as kind of reflection of this what it is versus, what it really is. Because to then if you think about it, a lot of people have fallen for this forex trading scams, Bitcoin and they're joining in numbers.

Participant 3

Uh, why? Because the guys just don't go into the details of what it is that they put their money in and then the next thing they don't understand what they're doing and then the money is gone.

Researcher

What would you say are positive contributors, so you've highlighted things that are working against the adoption? Why do you say it's working for the adoption?

Participant 3

What is working for the adoption is that even in the midst of most people not having access to data and so on, what we found is that I think there's a lot of people who are saying that actually, I don't want to be in the classroom. I want to learn at my own pace. I'd like to do my own research.

Participant 3

And those are the people that most probably have got. They don't have limitations in terms of access to data and with their prices that are coming down. You see this in the suburbia where people have got fibre and so on, which comes at a significantly cheaper price than even your mobile data. So once they get into that space, people are actually doing the research. People are going into your YouTube and people are actually interested in how I trade.

Participant 3

And from the how to on YouTube, it's actually they go into who's the provider that can assist me very quickly and unfortunately most of the main service provider are not in that space to actually be ranked the highest.

Researcher

So how does that compare with other geographies?

Participant 3

So, I guess even other geographies, when you look at the likes of Australia is one example. What was interesting is that they attribute the success of people adopting like your online share trading or share trading as a whole to the approach of road shows that they've done so that where they had contacts with people. That was one of the activities that done. They had number of guys in cars going to meet people and actually educating people. All just giving people information.

Participant 3

Subsequent to that, there was also a real benefit on the table. For instance, there was a lot of demutualisation as well as state owned entities actually going into a private space where people were being given shares.

Participant 3

And with that, there was a real reason why I should be interested and then in other geographies like Egypt is another one which is quite interesting. In that there is actually quite an interest in what is happening on the stock exchange and that drives people to try and find out more.

Participant 3

Nigeria, there is a sense of, and this is seen also with the AGM's. With these companies that have listed that you've got an active shareholder base, where when they say I'm a shareholder, I want to at the AGM.

Participant 3

Uh, I feel like I own part of that business, so there is that kind of if anything else it's not big numbers, but the people that are involved are wholly involved and they want to understand. You have to explain to them you have to take them through the trip versus South Africa were the masses opted for SASOL BEE share scheme. And then the calls that they were fielding after a year or two where people saying that where's my money?

Participant 3

With no understanding of its vesting, what does it mean? And so, there was the craze of, yeah, it looks like we can own SASOL, but there is no real understanding on how this thing works, so there is that challenge with the masses on the how it works.

Participant 3

But for a greater. For those that are more educated, those that are doing their research, you're finding that the guys can find information very easily online rather than going to somebody else, because the challenge is if you want to do it outside the online space, you have to go to Sandton no matter where you are in the country because all the firms are congregating around Sandton.

Researcher

Moving on to some of the outcomes that came from the survey. The first one that you saw was that from gender point of view. It was heavily skewed towards men. Women were heavily underrepresented.

Researcher

We don't really understand why is that the case and is this representative of what is actually happening in the real world?

Participant 3

Hey, that's quite an interesting one. Uh, whereas some studies that are looking at, for instance, your stokvel, heavily female. The group savings investments are more on the women. However, you find that I think it could be true because main, especially when you go into the online share trading and stuff like that.

Participant 3

The men like they like doing it by themselves or they go at it alone. And they don't have let's group together. Let's support each other so men would do you. Uh, kind of your investigation by themselves, without sharing with somebody else and seldomly, they'll share with others if there's the information that I've got.

Participant 3

But with women there is that let's do it together and in most cases I, I think from my observations I found that a lot of stokvel are more women. Uh, just the funny one is that my wife. I keep on saying OK, why are you in the stokvel?

Participant 3

And she says no, because we grouping together, and we put the money together. And I said, but the outcome is the same. If you're doing it by yourself, because if I'm looking at it, you guys said we've opened an account at Capitec.

Participant 3

It's giving you 12% if you put in money and you get in 12% and you're going to get money that with 12%. Unless there's other things that you guys are putting on top of it, and then I found something really interesting they. They loan themselves money from the scheme. And with that they charge 20%. So, you loan yourself money and you charge yourself 20% to pay back. I'm like why?

Researcher

What's the rationale behind that?

Participant 3

The rationale that makes sense to them. To me, it doesn't make sense. The rationale is, at least by the end of the year. I've got some savings. But I'm like, but you are short-changing yourself.

Researcher

Yeah, it highlights a lack of basic financial literacy understanding.

Participant 3

Yes, but we're talking funny enough, even in that group there's even see CEO's. The MD of the South African Known Company is in that group. But there's that togetherness let's do it together. But then some principles on how they're doing, and I'm like come on guys really, this doesn't make sense, and I've spoken till I'm blue in their face.

Researcher

Move on to the next finding, the majority of participants in the study Were between ages of 26 and 55. We didn't see a lot of participation under that age group or

over that age group. Why do you believe there's a concentration in that age group and lack of visibility in the other age groups.

Participant 3

Thing too, yeah, it's. My view would be pretty much the lower age groups the is still a sense of I'm not yet affected. Not yet responsible to look after my future or start investing and then you hit a time in your life when you start seeing I need to start saving just starting based thing because I'm thinking about the future.

Participant 3

And it's a life cycle kind of thing. And then you see the people just dropping off, most probably from 60 where it's about. I need to eat my money.

Participant 3

But in the contrary, you find that those who may have been active, and we've seen this with some of the guys in Durban. Durban events was mostly old guys. And it was more about they've got their portfolio and they're managing their portfolio because they can make a living out of it.

Participant 3

Over and above their pension money, so they are looking after their own portfolios. They are interested to grow it and that's where you find them being active, but I don't think it's you. If you give it a demographic split. It's mostly old white male.

Researcher

We didn't test for race in the study. Moving on to the next question and an overwhelming majority of respondents had at a minimum a bachelor’s degree, why would we believe education played such a pivotal role in the adoption. Or is it just a question of the sample of the study?

Participant 3

Could be a sample of the study, mainly because it's online. And you're most people who participate in those online surveys would be those that have got at least the minimum of a bachelor’s degree.

Participant 3

And I think if you maybe would have twisted it and maybe. Had it, person to person of walking the streets. It could have been a different demographic.

Researcher

OK, so moving onto some of the constructs that we examined based on theory.

One of or the first one that we looked at score performance expectancy.

Researcher

Where we tested people's attitude towards adoption based on the expected performance of their portfolio or achieving their investment goals. And we found that that did not play a role in the adoption of online share trading at all. How do you explain that?

Participant 3

I guess the maybe the immediate benefits when you say somebody online shared training, one when you start telling them there's no guaranteed returns. Already people are say saying if they were expecting guaranteed returns they will not proceed. But those that went in, they go in with the understanding of the ups and downs.

Participant 3

And saying that, you need to work it over time to actually start seeing some returns. So, there is, I think it's more or less your benefits that sub supersedes or that maybe dictates the reason why I go into this it's not necessarily just very the returns, it's somebody saying I want to understand first how it works, and over time I know when I'm in expecting. I should be able to make money.

And it's probably my attitude also to it because I'm not active with my portfolio and particularly because I'm constrained in being active and that I've just said, you know what when time comes, and I'm no longer constrained I know I can Still do this.

Researcher

The next construct that we examined is the effort of making profitable trades or the ease of use of the platform which we also found to be insignificant when it comes to influencing the adoption. What would you say to that?

Participant 3

Is it to me and maybe, this is comment question is it maybe because people are just at it, for the long run. What the platform does, it's immaterial and the guys are looking at it from their fundamentals. The majority of the people are looking at it from the fundamentals where they would say OK, fine, I want MTN, it looks like a good bet.

Participant 3

And then they buy into MTN rather than the trading itself. So, they would put their money on MTN. And saying that we think it's in the right space. It's selling data. People are using it and it's still growing, and they leave it like that. Where you find that somebody like me would go buy form because It's a long game. I just love the ETF's way just looking at it and say ok, it’s fine enough I've spread it, I've got no car and I've got offshore, bob’s your uncle it will grow in in time.

Researcher

So, the one factor that we've found to be a major influence. It's the role of what social influence. So, it's friends, family and peers that a significant majority adopt online share trading on the back of that group. Why is that? Why is it so? And why does it play such an important role?

Participant 3

So, you also find it in saying why are they influence on social media who have a bigger following because of what they are telling people about online share trading. And I think maybe it's because people want to hear from somebody. And they want to hear testimonials. They give them a trust factor.

Participant 3

To actually concede this rather than somebody who just has a platform so. So, there is a trust factor to a person rather than a trust factor to an organisation.

Participant 3

So, people would trust a person because they can go back to the person and ask questions and they don't have that with an organisation because if you go back to the organisation you most probably speaking to different people at different times. So just want to go, I would be interested in this type of topic can you help me. They follow Simon Even though he doesn't know that he's bad, but I follow what Simon does on social media.

Researcher

You raised an issue of trust. Trustworthiness of the service provider. Also, it came out as one of the critical factors driving the adoption. How do you contrast that with the social influence where people were trusting the person and not the organisation?

Participant 3

Yeah, I think. There is the I'd call it the sanitary issues where you just need an organisation must be trusted, must be a registered entity that is being that looks like it will be around when I need my money. And I can actually go and complain if anything is untoward. Uh, so those are kind of like the basics about the trust on the organisation. However, when it comes to advise, I'd like to hear from somebody who most probably have had an experience.

Participant 3

So, if I'm going to. Silly example, I was buying a company vehicle and for me to trust the SARS system to pay back the VAT. I had to go and hear from somebody who's done it before. It doesn't mean I don't trust SARS, but I just wanted the comfort. To hear it from somebody who says I've gone through it. I've done it for myself and that is the opinion that I layer on top of the basic trust issue.

Researcher

Alright, so the next factor that we found not. To contribute, or to influence the adoption was what is term facilitating conditions. Essentially, it's the availability of support or the compatibility of the platform with other technologies that users are using. What are your thoughts on that outcome?

Participant 3

Yeah, I think it's quite a difficult one in terms of how you synchronise the support of the platform in real time. And that is a big challenge because in most cases you are looking at. For instance, if you're using the Standard Bank online share trading stuff, and you're looking at the stuff on their front end and then from there you need to also move into their new system for technical analysis that is there and then there's, when you get stuck, it's very difficult to just say OK, let me call somebody who knows this, and they can assist me. So, you try to figure it out yourself and in most cases you actually just lose interest in saying ah, maybe I'm trying to look for something that is not there. And that has happened to me.

Researcher

So, moving on to the next one that we found to be a positive contributor. It's the fun factor, or the enjoyability of using online shared training that we found to positively influence adoption. How would you explain this one? What do you think are the reasons why fun and enjoyability plays such a pivotal role?

Participant 3

Yeah, I guess. The fun fact is, think about it, the thrill of making money, the thrill of sometimes losing. I think it's more. The war stories that you can tell out of it. And I think maybe that is why.

Participant 3

I'm assuming most of these providers have actually used gamification or the simulators as one way of creating that comfort with people. And it is in that space where you find that they want to make it fun so that people can become interested and be hooked.

Participant 3

Uh, and I think in that way people learn in a fun environment rather than in a very serious environment. So, I think maybe moving that into real life. My challenge would be then what is the fun in it when you're losing money. But I guess people want to still enjoy the trip even if they are losing or enjoy the trip while they are making money.

Researcher

The next finding was the perceived reasonableness or perceived value for money of a platform that heavily influenced adoption positively.

Participant 3

Yeah, I guess that is especially in the field where you are investing. Everybody is just looking at cost. No matter what because that will determine the true outcome at the end of the day. But also, with that there is that perceived value of it. If this thing does not cost me more than what I am making, then it's the right thing to do.

Researcher

Moving off some of the core constructs that we have examined. We looked at basic financial literacy obviously from finance. And when we tested that, we found that it actually had, or the level of basic financial literacy had limited impact on the adoption. It had a slight impact on trust, but overall, it had limited impact.

Participant 3

Yeah, that's quite an interesting one because I would have thought that it would have an impact because I would think. The more you know, the level of trusting would be easier because you've got the information.

Participant 3

I don't know if that makes sense.

Researcher

Yeah, I do understand it.

Participant 3

Yeah, it's more like you build trust through knowledge.

Researcher

So, you'd saying that those with the higher level of financial literacy would be more inclined.

Participant 3

Yes

Researcher

So, moving off the findings of the study. One of the attributes that we examining as part of the research is the growth in platform strategies and platform business models that have really been driving the economy or the Internet economy, so to say, what would you say have had been the role of platform thinking, platform strategies and platform business model in the growth of online share trading in South Africa?

Participant 3

I think there is, if anything, else, I think it's the platform plus, it's more accessibility because I think platform equals increased accessibility to the market. So, you find

that the people would expect that a platform can do so many things. For instance, I think there is an expectation from some people that and if you are telling me about a trading platform, I should be able to trade anything, including Bitcoin.

Researcher

Right, but the platform business model it's not necessarily technology. If you look at, let's say Uber or Facebook. That's the typical platform business model and the platform thinking that one is actually referring to, but not necessarily the technology. I don't know if that makes sense.

Participant 3

Meaning platform from a point of somebody brings two parties of demand and supply together.

Researcher

Yes so let's say Uber has built itself as a platform that removes friction between those who have cars and those who need to be transported. They make certain decisions on how they adopt, or how they roll out. How they charge? How they make money compared to traditional ways of making money the same thing can be said with Facebook. That they focused on a certain strategy to acquire people, and then they focused on a certain strategy to monetize, what they have?

Researcher

So, I guess one is trying to understand to what extent it's that kind of thinking influencing what is currently happening in South Africa?

Participant 3

Yeah, I guess in South Africa then the challenge is you have. We haven't found a platform that cut across different offerings for investment. For instance, I think great degree and there is a reliance on, in the market if there is anything money related you go to the bank. And we haven't seen much of the platforms that actually bridges the gap on like Robinhood kind of, that would bridge that gap. I think to a greater degree you've got EasyEquities that is coming in in there and

but also there is still some resistance from the market itself. For instance, if you look at the JSE is not so keen on the EasyEquities model, but the EasyEquities model is getting in the numbers. It's reaching more people and for that also EasyEquities also looked at ok fine you can do share trading.

Participant 3

You can also do like your normal savings and then they link through with Capitec. So, if anything, else I think there is already that kind of thinking I. I think there's still a learning curve to actually get the regulators on board as well as the entire market participant.

Researcher

The last question is, is there any factor that is affecting adoption of online share trading that we have not examined or discussed in the study?

Participant 3

I think most of the things are covered, but I think the biggest thing is just access, uh, I think to a greater degree the majority or the masses in South Africa has still got to handle in terms of data, or I would say what do you call the fibre or mobile data and so on because it's still prohibitive. And even in that space people are those who have access they use it sparingly.

Participant 3

Uh, but also I think your providers of access to information being your telco companies and so on. They more they very quick to give free access to social media than to a anything finance. So, for instance as an example, you have a lower rate that you pay to Telkom for social bundles, meaning that if you are accessing your social media, YouTube and so on, you pay a lower rate than if you just going straight into the Internet and you're doing your general research.

And it's not only Telkom that does that, but Vodacom also does the same thing. And also, MTN does the same thing.

Researcher

Why is that? Like? Why is that so?

Participant 3

I guess there is. One, they trying to drive more activity on social two. They also using social is also an advertising platform. So even some of the promos or activity in terms of increasing their revenues will be driven on those platforms, so it's if everything else it pays for itself.

Participant 3

Uh, but I don't think they do have any interest, or maybe an immediate interest in how we progress people into education as and it's essentially been online share trading. Interesting enough is that Vodacom did a Is free access to learning materials for their Vodacom BEE share scheme. They did have that access point, but it was not that advertised in terms of getting a lot more people into that space.

Participant 3

It’s doable, uh, it's just a matter of the appetite.

iv. Interview transcripts for P4 Interview transcripts for P4 (including P5, P6 and P7)

Date: 15 December 2021

Time: 14h00

Duration: 34:35 munities

Greetings and Introduction

Background to the interview

Consent to proceed and recording

NB: Participants provided were sent the participation information sheet before the interview and provided written informed consent before the interview.

Researcher

What would you say are the broad drivers, driving the adoption of online share trading in South Africa?

Participant 4

I mean over the years me, and you both have seen. The main reason people are going are gravitated towards. It is because, well, there's two things. I mean, the one is being the youth are more grab pulled towards it because they've all seen the Instagram posts of the multi-millionaires. And then you're finding the older generation they want to come and do it themselves rather because they just tired of paying portfolio managers and then huge fees.

Researcher

How does that compare with other geographies?

Participant 4

From my side, Australia just does it because they they've been taught how to do it. You know you look at even when we speak. I mean when we talk to the guys in the UK or US or anything like that, it's. For them, it's like just it, it's like of part of life. I mean, that's what you're supposed to do.

Participant 5

But I also think personally it's the. It's the structure of the savings market offshore. I think they there's. There's a big push in terms of people being happy being able to have access disposable income that they able to save. I think in South Africa it's quite rightly very different where the market participants in online investing are doing it as a way of making extra income more than you'd be finding that in in, in offshore locations it's a matter of saving I have access income I'm allowed to be able to invest some in a retirement annuity, but I also have 15 to 20% off that I can do it myself.

Participant 5

And I mean working at another broker for me you see that a lot. There's a lot of people who have that active, active participation in the nature of these savings.

Researcher

One of the attributes that we looked at with the participants it's gender, and we saw that almost 30% of the participants were females compared to the 70% of males. Why do you think there's such a low participation of females in the study, and how does that compare with the experience in the market?

Participant 6

I think from my perspective, I think it's lack of education. I think so just speaking sort of from personal experience we. I feel like as a woman, and especially as a young woman who started working, were just told to get an RA and you were told to put this money in here and then you did that, and you left that as that when someone else comes along and starts talking to you about trading and investing

your money. You honestly don't know anything about it, and I don't think females are inclined to go and do the research on trading and investing. I think they just rather spend their time or energy on other stuff because they don't actually understand. And the true benefit of what's happening with your money should you invest it or trade it yourself.

Participant 7

Now can I just add to that, I also think it's like you mentioned, with experience, I think the financial industry is saturated with men due to the fact that obviously going back a few decades, women weren't allowed to have the jobs that they have now, which obviously plays a part in females as having less experience and this knowledge of financial markets as opposed to men.

Researcher

So, you'd say that is part of society's evolution overall, that come, you know, taking the women out of the kitchen has not evolved to cover the financial markets.

Participant 7

I don't think it's evolved rapidly enough.

Researcher

Then we also looked at age, the majority of the participants. We saw that they were between 26 and 55, which accounted for almost 80%. Is that representative of what you're seeing in the market and why is that the case?

Participant 4

So, I mean did it from my side, I mean, without fail we also remember we're also guilty of the fact that we target that age group. You know because we know that age groups got much has got better disposable income. So, we purposely, I mean, you know the Participant 6 will tell you this as well. I mean from a marketing point of view; we purposely go over, in fact, we target, we try and target more the 30 years plus. And it's just purely from a thing that that age group has much more

disposable income and we also see you know clients below the age of 30. They, if they do want to try trading in that out, they come in with very small amounts.

Participant 4

And I mean then the cost, the cost as a percentage for your trading is just too high on your small amounts. I mean, you're coming in with 1000 Rand. It's costing you 50 Rand I. I mean, that's already 5%, so you find that it does. Then you know that changes everything. That's said, I mean. You it's like EasyEquities. EasyEquities made it. Uh they you know Charles and then decided that they wanted to go and target that below 30 the age group and the only time I mean this year that they made a profit because while they had what 300,000 plus clients. They weren't making anything out of those clients 'cause they were so small the trades and they were quite young.

Participant 4

And this year obviously, with a partnership with Capitec and everything else they've, obviously now seen the benefit of the older group also coming in, and they're making money there.

Researcher

So, the last demographic, sorry, attribute that we looked at was educational qualification. We also saw the significant number of participants having at least an undergraduate. And why is that the case and is that really a major factor in adoption?

Participant 4

I don't think it's the degree that I that that has anything to do with it. I just think that it's the legacy of South Africa. People with a degree are more successful, earning better salaries than those without a degree. That, to me can be really and truly the only reason is that we I mean times are now starting to change. But I mean that's going to take time before we see that coming through. But if you're

looking at that age group, also its the plus 30. People that have been disposable incomes as Participant 5 was saying it's going to be guys who have degrees and have good jobs.

Researcher

Investing by nature, people do it to get one or two outcomes to try and profit from a trade or working towards achieving a financial goal. When we tested that, we found that not to be a factor in people deciding whether they want to adopt online share trading or not. Why would you say that is the case?

Participant 4

Oh, that's a tough one. We always teach people that you're supposed to set goals. I don't know. Maybe guys going to online share trading 'cause they think they can just make quick money. I really. That's, uh, I would like to, I mean. That for me personally, that's not what and I don't know what to say. I don't know what you guys would say, but I mean if I'm going into that I you know, it's like I think, this is our brainwashing that we've done for 15 years where we say you go in and have goal. So, I've always had a goal. I don't know why you wouldn't.

Researcher

What would be another reason that would make someone to go to so to come to trade if achieving financial you know goals is not actually one of the reasons.

Participant 5

I think it also. Yeah, I mean it is a bit of a difficult one, but I think it. It, it's. It's a bit of the revolution against the status quo. And what I mean by that, as Participant 4 was mentioning it, it's a situation where you were told no. Give your money to a money manager, give it to a PM, give it to a fund manager, Sanlam and then you realise after, I mean , I look at something like what my mom was going through her I mean she put some money at Momentum in 2004 and when she received the value of the investment it almost stayed flat.

Participant 5

You know and trying to get to understand why it's flat. First of all, she really couldn't care much about the markets, but I mean she comes to me and asked me why it is so, and I feel like its people being disgruntled with the way financial services is set up that you'd rather do it on your own, even if you don't know what you're doing or you don't even have a goal in mind, I mean, as a money manager, what you want to beat is inflation. Most people don't know what inflation is, so as a money manager, your goal is inflation. A person is just like at least it's out of the hands of Momentum, and they're not charging me 2% a year.

Researcher

Another attribute or characteristics that we looked at the effort that one has to put in or let's say the ease of use for any platform and we also found that this does not really have any influence or impact on the adoption of you know of a platform. Why would this be the case and also based on you on your knowledge, is this conforming to what you're experiencing in the market?

Participant 4

There is double-edged sword there, so you've. Got you've got people who are used to using I mean, and this is what we find now, especially with traders who are used to MT4 or MT5 platforms. So, I mean, we do find that we have clients who come in and say listen, we want to into MT4 and MT5 platforms.

Participant 4

But a lot of the people just want an inhouse platform, so they and I think our platforms are all pretty much similar. You know, I mean, there's not much of a difference between everybody you know offering. So even if you're on it, MT4 or something else, the platforms are all very much similar, so I don't think there's been actually really, you know anybody who says, uh, oh no, I specifically want this platform like this. There may be one or two features that they want in the platform, but I don't think anybody really is platform specific. They're very much agnostic to it.

Researcher

So, one of the factors that positively influence adoption was the role of the social circles. We found that the role of family, peers, friends highly influenced people's decision to adopt a platform or to invest using online share trading. Why is that the case?

Participant 5

I think sometimes it's about confidence knowing that somebody is in the same boat as you and has the same amount of risk on their table. It's easier to adopt. I mean I've seen some of my client interactions where it will be somebody tax accountant. Just saying, you know, take up trading, you know as something you do on the side and then everybody kind of downloads it on their phones and they put in some money and then it kind of becomes a group thing like yeah you know what I made a good trade, or I invested in this stock, and it did well. And I also think amongst men it's a lot to do with ego. If you know that I've made a better trade than somebody else. Traders like talking and they like talking about their successes more than their losses. So, it kind of festers in that social environment where, yeah, you know, on SASOL so I made 100,000 whereas a person, another person made 100 rand, you know. So, I think it for me it's those two factors.

Participant 4

It's also, yeah, you know. Just to add to that, Participant 5 right there. I mean, it also speaks to the fact that I when I say I made money, I don't just say I've made money were on just SASOL trade.

Participant 4

Uh, because the very next question. Is, who are you using?

Participant 4

They made money trading SASOL through broker X who broker or broker Y. We say I've made money and then we say I made money on this trade, but with this

broker. And I mean that's that. And then somebody thinks, Oh well. You know, maybe that's a good broker to use.

Researcher

We found the fun factor people enjoyability of the platform being one of the major factors towards adoption. Why do you think fun plays such an important role or enjoyability?

Participant 4

I think that just is, I mean it it's, if you don't enjoy what you are doing. Like working, did it, I mean, if I don't enjoy the work I'm doing, I'm you know I'm not going to really pay attention to it. And so besides that, I and the one thing I do find a lot of our guys have I. I mean, we've got a client who Participant 5 calls a gambler. But the truth matter is he's it's almost like he's hooked on the adrenaline rush of trading. You know, placing a trade, it's going up immediately, then going down, and I think a lot of I mean for a lot of people, it's enjoyment. It's fun.

Researcher

So doesn't that go against one of the core tenets of investing that if you're not so, if you're having too much fun, it means you most probably doing it wrong.

Participant 4

Yes, of course. That's the first thing I mean the most important rule of investing is try and take the emotion out of its. But it's like Participant 7 was also saying is that you know. I mean, there’s, that lack of education isn't there. I mean, Participant 7 can even maybe speak a bit more. And I mean when you placed your first try. And it was going. And the minute you bought it; you are obviously it went down. And then it went up. And I mean. You were going through the emotional rollercoaster, and I don't know whether or not.

Participant 7

Don't think you can keep the emotions out of. It I think you really have to be a professional in order to keep the emotions in check.

Participant 5

But I also think it goes back to also the time I, I mean since lockdown a lot of people, a lot of people have been trying to find escapes in terms of like you know you have cooped up in the house and there's gaming. And I mean now you get a fancy app, it's online trading, you're seeing charts. You're trying to analyse it, beat, beat, beat some price action. So, I also think it goes to the time and the psychology of the time.

Participant 5

It really it's like it's almost a game. I mean you look at our app. It looks like a game it's got bright colours, there's stuff flashing over the place, so it almost feels like you're playing a game and that's how I think investors are looking at the market and online trading right now. It's an escape for them as well from a normal day to day lives.

Researcher

OK, so the next factor that we looked at is platform's ability to give support and the compatibility of their platform with what the users are used to, and we found that not to have any influence on one's intentions to adopt. Why do you think those resources are not a factor taking into account that this is people's money?

Participant 4

You know, I think that speaks to the fact that first and foremost you. The platform doesn't really, I mean, they're all we all similar, so they are all very similar. So, I mean it speaks to that point of the fact that most people know a platform when they see they, they know how to trade it, they know how it works and they've grown accustomed to, you know the trusting of the brokers with regards to platform.

Participant 4

But with regards to the service side and that honestly for me speaks more to the fact that the I mean when we look at you know those top broker awards, those

Intellidex ones, there is never a bank in the top 10. And that's purely because of the fact that, I think South Africans when it comes to finance, they they've just associated bad service with finance. We get pathetic service from the banks and we it's almost at a point where we're just used to it. I don't think it's a factor anymore.

Researcher

So, are you saying it's because people don't care about the service or they're just saying I'm going to get a bad service anyway?

Participant 4

It's more the fact that I think people expect to get a bad service, so they really don't care about it as long as the platform is working and you know they whatever they're doing is as long as they can do what they want to do, they are fine with it. And if something goes wrong, that's the only real time that they worry about it, but for them normal general service they most South Africans don't really care seem to really worry about it because they are expecting for it not to be good service and if it's if it is good service, it's just Like a bonus.

Researcher

So, we found that trustworthiness of the service provider was actually the most critical factor that everyone identified. Why does trust pay sort of play such a critical role?

Participant 4

We are dealing with people money, they need to know it's, is safe. They also need to understand that you're going to remember. I mean, this is especially when it comes to investing. It's a long-term gig. And I mean that means that you got to make sure that the person that you're dealing with will be around for the long term. And obviously your money is going to be safe. So, in 5-10 years' time you know you can't be dealing with the brokers who are not around anymore, so trust, trust has been a big thing. Yeah, I mean, I think you can Participant 6 speak more on it with regards to from a marketing point of view. What we did as well.

Participant 6

Yeah, I think I think it's very important. I think there there's a lot of different areas in the market set up, just synonymous with scams and people have become very wary about it so. I think trust in your broker becomes very important, especially when you're dealing with people's finances and people investments. I mean, people take their money very seriously, so they do want to make sure that whoever they are trusting their money worth. They know that it's not a robot, it's not a scam, it's someone that you. Can trust and you can trust for the foreseeable future.

Participant 5

For me for me, I once had a, uh, conversation about. What exactly do banks sell, I mean you could have a 20-minute discussion on what exactly a bank does, but a bank is trust. Essentially they, they selling you trust. And a broker relies in the same in in in the same breath that I know that come hell or high water tomorrow if I need to get my money, I'll be able to go get it. You know you trust that your bank tomorrow when you go to the ATM you have 100 Rand you'll get 100 Rand. And for us. For us, it's like for our clients what's very important is the security of their funds and the honesty in knowing that the moment I click on a price that's the best price I'm getting. And there's nothing at the back end that inhibits me from being successful, and that goes back to confidence, honesty and that trust. So, brokers are banks in my opinion.

Researcher

So, this second last attribute that we looked at that heavily influenced adoption was perception of value for money. And that the service is fairly priced or on a cost benefit analysis, unit positive. Why is that such a major factor?

Participant 4

Uh, I think. We sell that as well, so that's that, I mean, one of the things we do, every single broker does that as well. We never we, I don't think there's a broker

in the country that says we the cheapest, but everybody says we have the best value, so brokers have obviously created that perception already.

Participant 4

In anybody's mind, when you're looking at a broker, make sure you're getting the best value out of it, and I think that is one of the reasons. This is why it's become such a big thing. It's more I mean, before it was very small, there wasn't many brokers or anything around.

Participant 4

Now with so many being around you've got trust, which is right up there and then the next best thing is value because as much as sometimes you can go to the cheapest broker, I mean just use an example. You can go to EasyEquities, but when you're going to place a trade with EasyEquities, you have no idea what you're going to buy the share or anything else 'cause they don't give you a live price nothing. So, you've got then you say, ok, I pay maybe a little bit more at this broker, but those brokers I know what I'm getting. I'm getting research. I'm getting this so there's that value has become it's while it's been pretty much driven by us as brokers that you must look out for it, but I think people have also caught on to it to say it’s actually quite an important thing.

Researcher

On a different construct that we examined was testing people’s level of basic financial literacy. And when we explored it. We found that there is actually no impact on sort of the level of financial literacy had no impact on people's adoption rate. We saw it affecting trust a little bit, but overall, it played a limited factor. Why would you say financial literacy doesn't play a factor taking into account that you dealing with financial products?

Participant 4

That's actually quite scary. I think that people don't think that financial literacy is important. I think it's just wow.

Researcher

Sorry just to correct you, it's not that they think it's important, but when we tested financial literacy and we looked at how people responded and then we modelled it against their intentions to adopt. We found that irrespective of where they are on the financial literacy curve. There was no difference between the ones that got the answers wrong and the ones that got the answers right.

Participant 4

Oh OK, but then yeah, I would say that speaks to exactly what Participant 5 was talking about earlier. Uh, it's I think we locked down. We are looking for ways of escaping things so we're going to try something we're going to try something, and this is something different which most of South Africans haven't. So, I honestly I think that would be the biggest that would be the reason why. I think it's just about now. People are willing to try something different. And look, I mean. In you know, I mean I'll tell you something right now. Uh, my daughter Kate, sitting here next to me. She was just going through. I mean at school they go through how the market works. You know economics in that day and it's quite scary to know what they've been, what they are teaching them, it’s actually so wrong. It's scary. So, I think for most people it's you know what I don't know but I want to try it. It's fine, it doesn't matter what my where my literacy level is or anything. I'm gonna try this and I'll learn as I go.

Researcher

So, looking at a completely different dimension there has been obviously a growth in platform businesses and platform business models overall. To what extent do you think platform strategies and platform business models are driving adoption of online share trading in the country?

Participant 4

Uhm, honestly I don't see it really driving it that much because of the fact that, like I say, our platforms are very similar, but the one thing I have noticed I mean which, especially with us with the mobile app that we've got. The one thing I have

noticed is a lot of people compared to the other brokers and the only thing that comes out that really stands out is your app is actually just way easier to use.

Participant 4

If I need to place a trade and that day, it's simple. It's not complicated, so I do think that people are. Uh, when it comes to the app side of things, they trying to make it less complicated, but obviously. Then from a website you know you brokers have to play that balancing act of who do I cater for the experienced trader, then how do I cater for the beginner, so I think there's. I mean, there's still a lot of money going into how we design, especially our platforms and the likes. But I don't see the type of investments you know being put into your platforms like it was before. You know people are saying, look, we've got something here and this is what we offer. Take it or leave, and clients are saying, oh well, I'll take it it's fine, I don't see many of us spending a lot of money right now on platforms and enhancements. I think it's more tweaks coming.

Participant 5

I think on my side I slightly differ on that opinion. I feel like. The platform business model has actually grown the market more than then one would actually think. I mean, I haven't done a study or even or any sort of modelling on it, but for me it's the ease of access. You know the markets have always seemed so inaccessible to the to the normal man on the street having to explain to somebody what you do and how easy it is. I was on a game reserve over the weekend, and I was talking to the game ranger explaining exactly what we do, and his questions were isn't it difficult to get into and I just pulled out an app and I was like it's as easy as downloading an app on Play Store and with 2000 Rand you can start going and for me had it not been for the platform. I don't think we would have seen a growth in our market that we are seeing right now.

Researcher

So last question is, is there anything that is currently driving the rate of adoption that we have not covered?

Participant 4

Yeah, volatility. I think look I mean especially when 2020 hit, there was an explosion that happened in online share trading and that was worldwide. That was not just here in South Africa there was a massive. Massive explosion and that really had to do with the volatility across the board. And I mean like we all know. So, if there's volatility, online share trading, the brokers do very well because clients then become more active. But if there's no volatility, what you find then obviously clients are less active. And it, uh, there's not that much then talk about it, I mean.

Participant 4

You know things, things that happened. Like for example SASOL share price jumping from 25 Rands now to over 270 Rands then I mean that was just you know, amazing and people do this they still talk about it so. And that helped to attract a lot of people, I think that's the point that is more important. Is that volatility is something that will attract more people to trading and investing?

Researcher

Thanks for that.

APPENDIX G Thematic Data

Table G–1 Concepts from transcripts coding

Concepts	
Ability to transact anonymously	Demutualisation increasing share ownership
Access to disposable income	Desire for stockbroking to follow popular digital platforms design
Access to information does not make it understandable	Different offering for young investors
Active shareholder participation	Difficultly navigating financial market jargon
Adoption is low compared to other countries	Digital Immigrants
Alternative career as day traders	Digital Natives
Alternative investments	Digital Revolution
Alternative investments are generally sold/agents	Do-it-yourself (DIY to outperform the market
Alternative source of income	Early days for platform business model
Alternative to gambling	Ease of access
Alternative to playing games	Ease of use not primary when it comes to risk management
Artificial barriers to entry using jargon	Emerging alternative product offering for young investors
Attraction to offshore driven by Big Tech Companies	Entertaining
Avoiding high costs associated with money managers	Escape from daily routine
Basic financial literacy outcome inconsistent with real life experience	Excess time due to lockdown
Basic services	Expected high financial literacy to have a positive effect
Boredom	External unplanned event
Boredom, search for alternative ways to spend time at home	Extreme market event
Brokers core service is trust	Failure to admit after falling for a scam
Buying without understanding	Failure to learn from past mistakes
Cannot search for what you do not know	Falling prey to marketing
Career advancement	Family responsibility takes priority
Chasing quick returns	Fear of missing out (FOMO)
Clients are willing to pay higher fees for quality of services	Fear of scams
Community support	Fear of scams from offshore providers
Confusing platform business model and technology	Females are underrepresented in industry
Confusion about the true meaning of platform business	Financial services sell confidence, honesty and trust
Consumer reacting to market event	First mover advantage, winner takes all
Contact interaction drove adoption	Focusing on fun over profitability
Cost saving	Focusing on long term fundamentals
Costs has a bigger impact on final outcome	Following hype
Following trusted people	Lack of knowledge not seen as a barrier for those looking for an escape
Fun appeals to young audiences	Lack of market knowledge
Gambling mindset	Lack of market understanding
Gamification	Lack of research
Gender stereotypes	Lack of true platform thinking
Generational preferences	Large untapped market which can be unlocked with a different business model
Good serviced is viewed as a bonus	Legacy of woman not being part of the working force

Concepts	
Greater need to demystify financial markets	Level of bachelor's degree was unexpected
Group schemes tends to be more social than financially focused	Life stage-based investing
Herd mentality toward share offers	Limited research to establish trust
High data cost barrier to entry	Local brand trust to protect over offshore scams
High local brand equity	Lockdown
High market volatility	Low barriers to have a trading account
High risk taking, with low chances of success	Low capital requirements
High social influence	Low-cost offering is attractive to new and younger entrants to the market
High social value	Low fees
High value-added services	Low female participation
Higher confidence in DIY Investing	Low risk appetite
Historic high barriers to entries which are coming down	Low risk investments
Homogeneous and mature product offering	Low service expectation
Increased use of publicly available information to learn	Low social media influence
Indirect benefit from interest in offshore shares	Low understanding tends to create speculators
Indirect broker referral	Market Gurus have a strong influence
Indirect peer pressure	Market structure not opened to different operating model
Inflexible ecosystem not willing to embrace platform business model and strategies	Marketing using existing clients
Information is available for those taking the time to find it	Men tend not to share
Instant millionaires	Men tend to prefer investing solo
Institutional trust	Mobile applications economy
Internet was supposed to be the equalizer	Need for super platform for all financial needs
Introduced to traditional low risk (high costs) investment products	Need to derive non-financial benefits
Investing for optics	Need trusted party to teach
Investing without goals is irrational	No business model innovation
Lack of awareness	No clear indication of platform business model or strategies
Lack of capacity	Self-confidence improves with knowledge
Online self-learning not fully embraced	Shared destiny
Opportunity exists for different business model	Simplification of access to offshore markets
Opportunity for exotic markets	Simplistic approach to investing
Over reliance on traditional finance providers	Skewed sampling
Overconfidence	Sleek UX and UI designs
Oversimplified trading and investing	Social network becomes first line of support
Pandemic	Social status
Passive participation leads to limited knowledge	Social support
Past experience led to low expectation for support	South African competitors are not aggressive
Perceived level of difficulty	Still cheaper compared to other traditional financial products
Personal testimonials	Superficial trust
Platform business not fully implemented	Target market segment
Platform is a means to an end	Technical barriers for older generation
Platform model growing the market	Technology familiarity
Price driven innovation	Trading fees are high for investor with small capital base
Price value does not mean low cost	Trading is like gambling, enjoy the high
Privatization increasing share ownership	Trust adherence to the local regulatory compliance
Proactive awareness campaigns	Trust based on presentation not credentials or qualification
Public boasting about winning trades	Trust from social circles
Qualification is linked to employment which influences disposable capital	Trust in known brokers

Concepts	
Raise in do-it-yourself learning and investing	Trusting community over institutions
Reduced economic barriers	Trusting local stockbrokers to offer them offshore markets
Reduced technical barriers to entry	Using social media community for support
Reduced the need to use financial literacy concepts	Value for money is a perception driven by marketing
Referral from close social contacts	Very low observed female market participation
Regulatory induced fear	Visible lack basic financial literacy in the group scheme operations
Rejection of the traditional financial products	Women prefer group schemes
Resistance to change in the older generation	Young investors lack capital
Restricted movement	Second source of income
Rise in internet adoption	Secondary confirmation

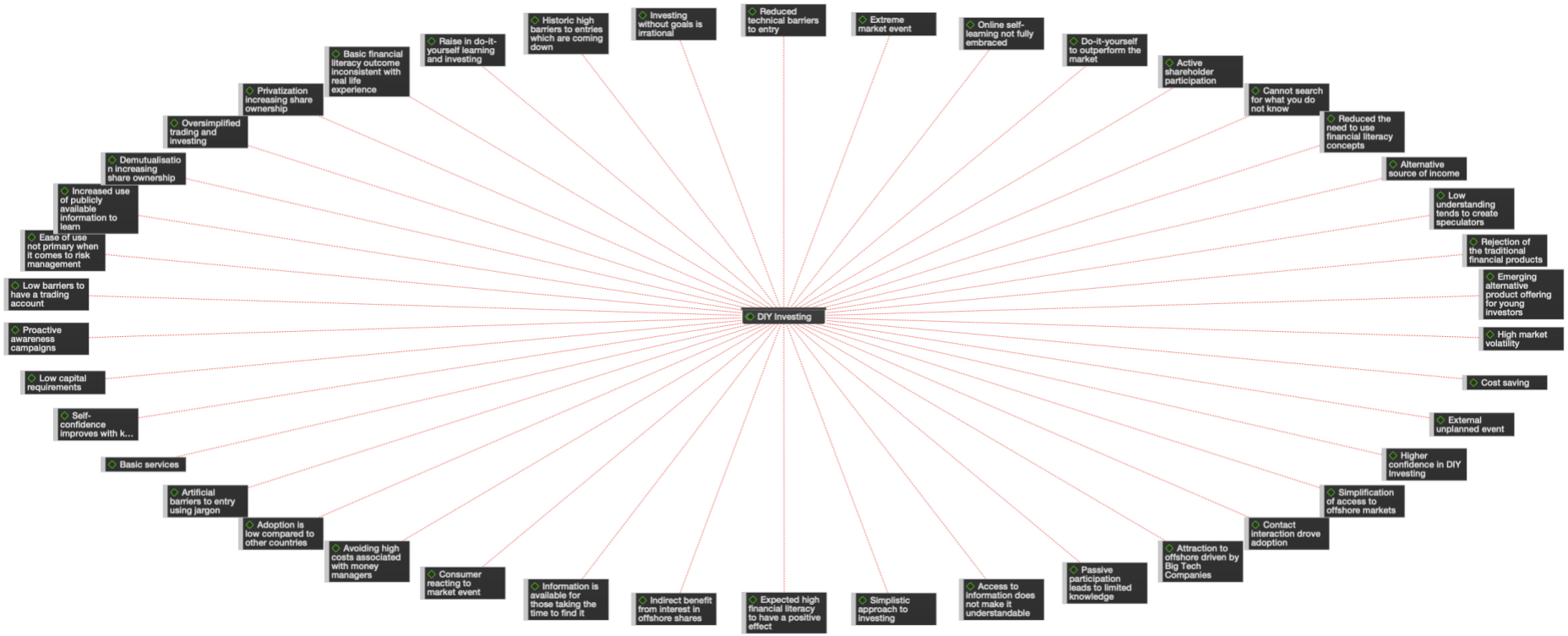

Figure G–1 DIY Investing thematic map

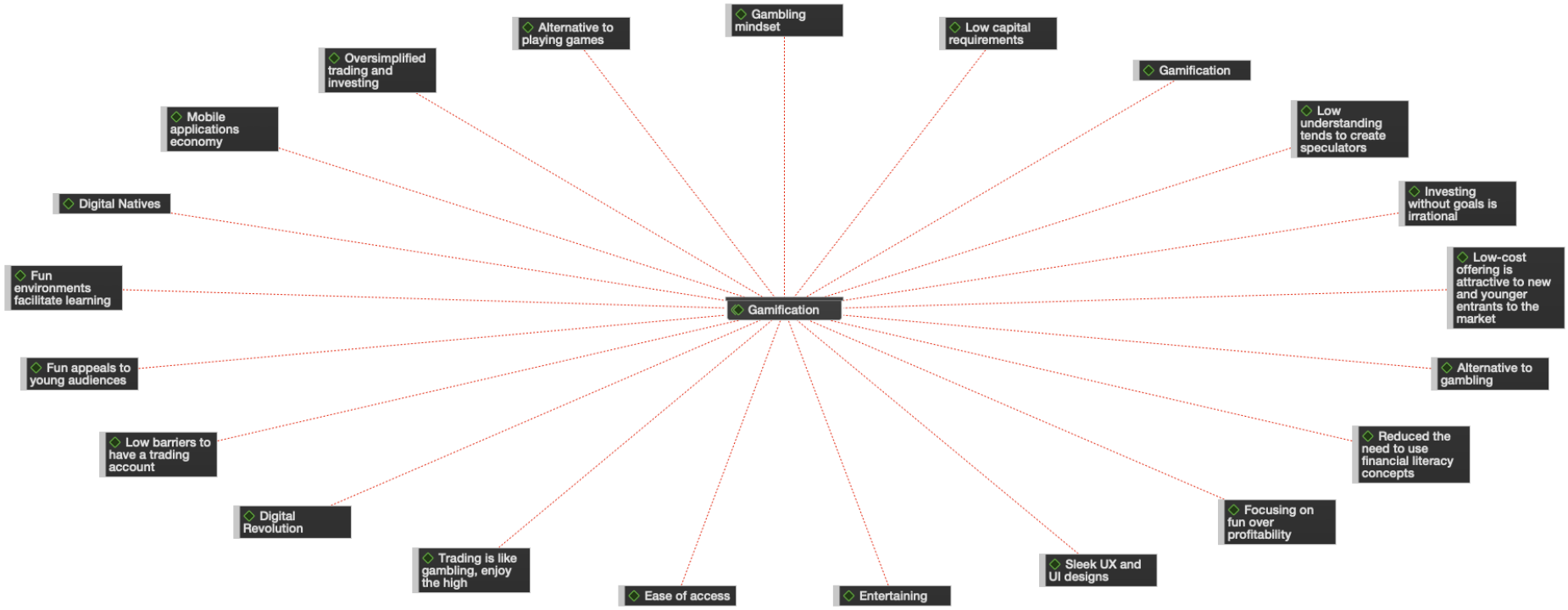

Figure G–2 Gamification thematic map

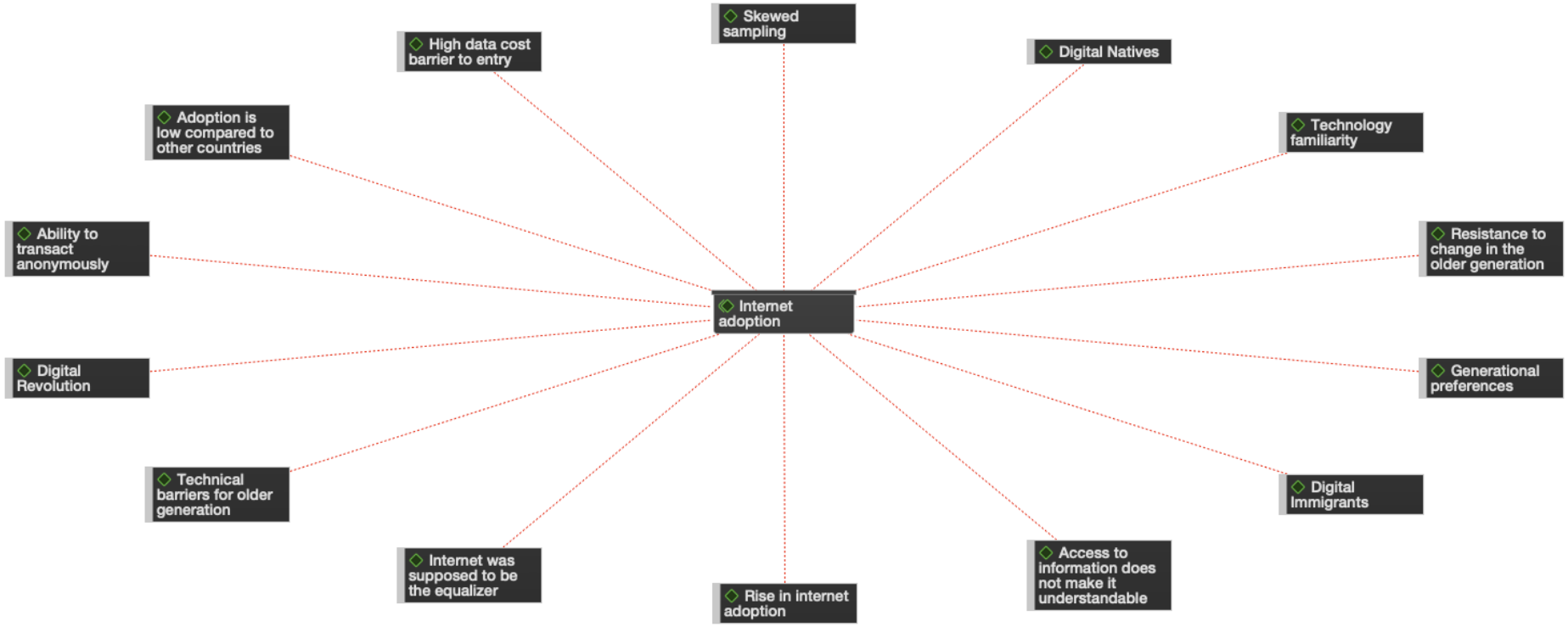

Figure G–3 Internet adoption thematic map

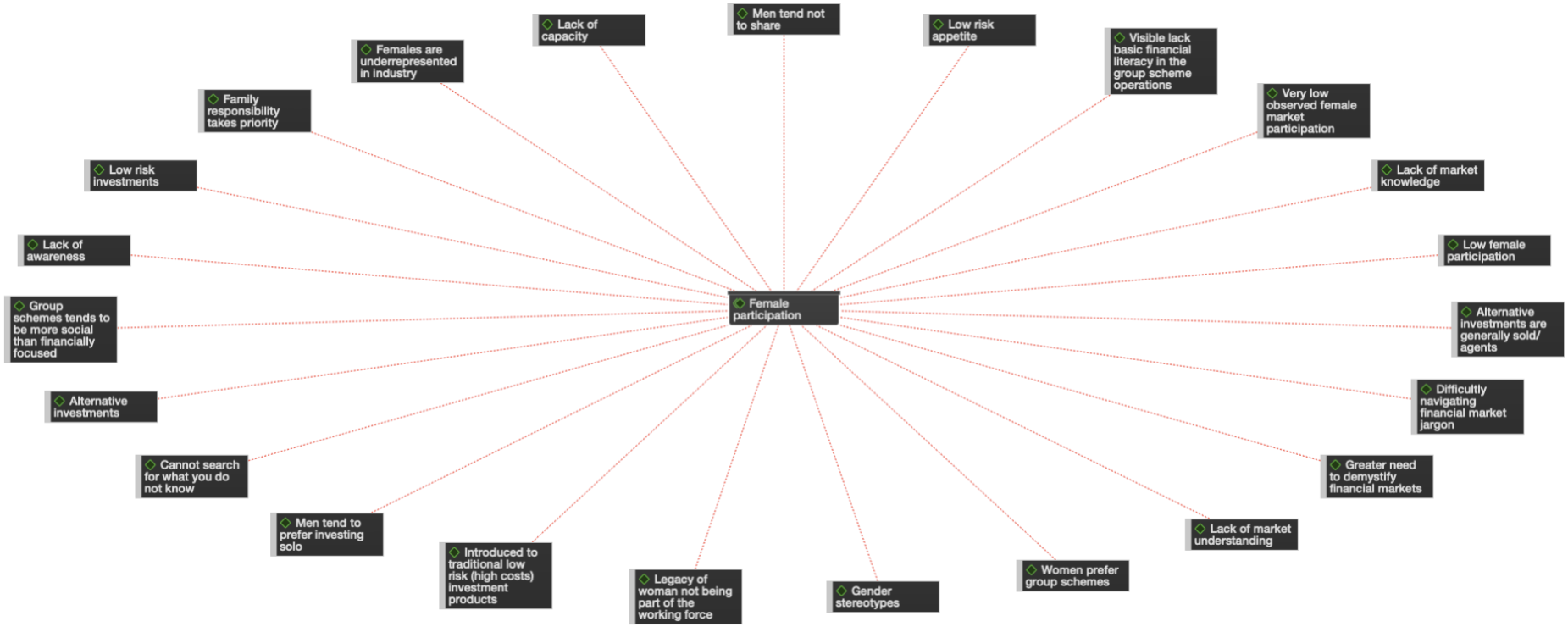

Figure G–4 Female participation thematic map

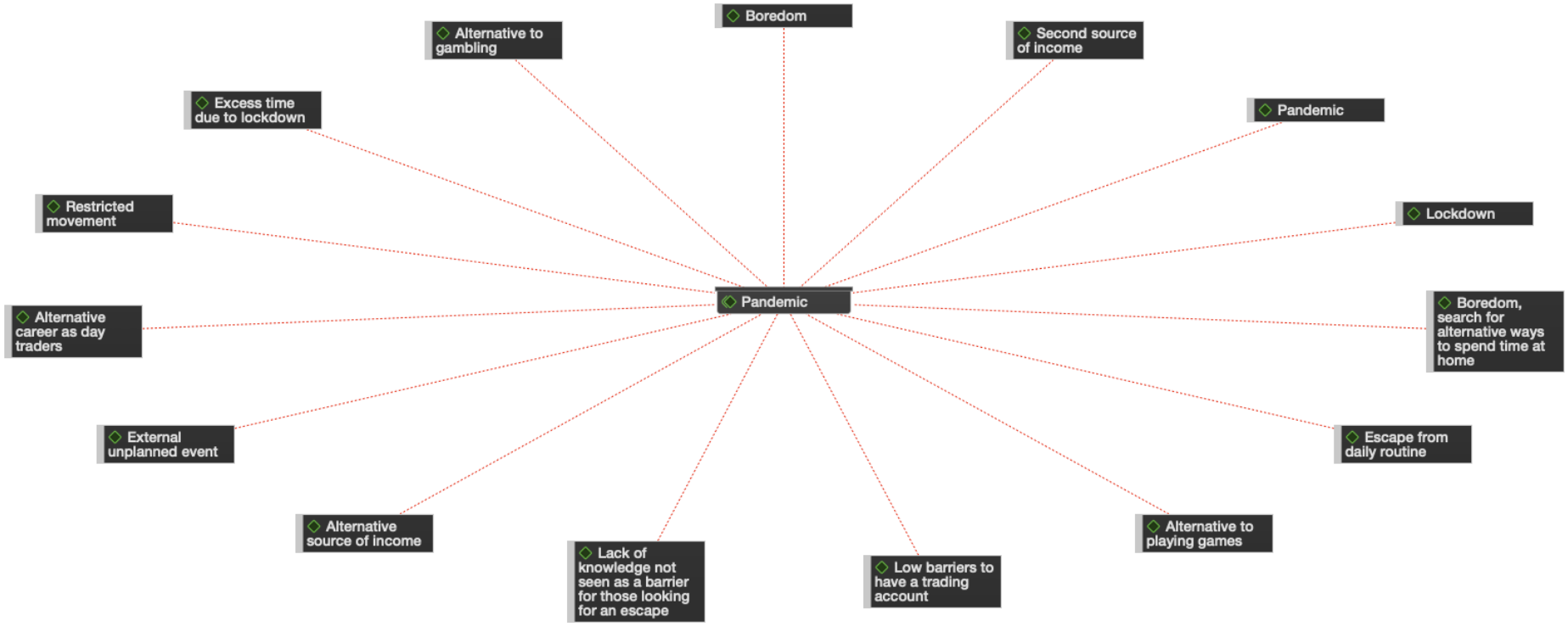

Figure G–5 Pandemic thematic map

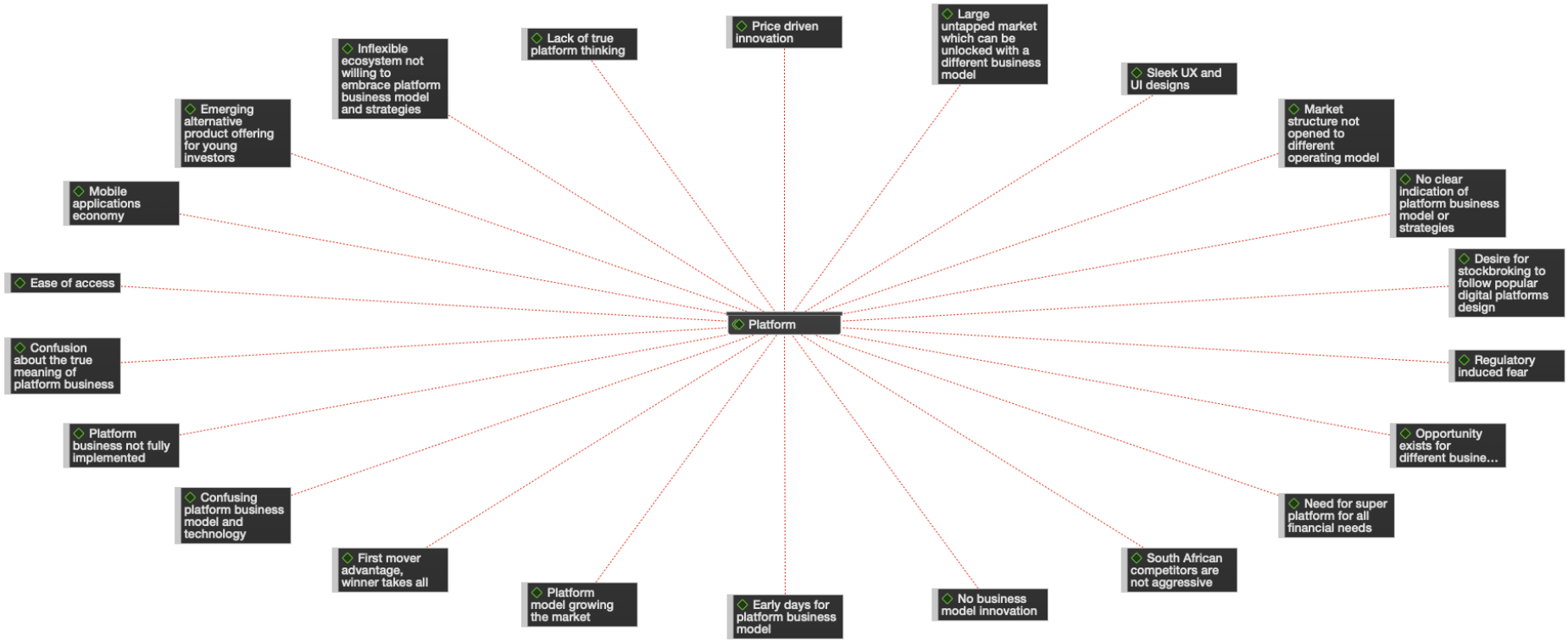

Figure G–6 Platform thematic map

Figure G–7 Price value thematic map

Figure G–8 Prime age group thematic map

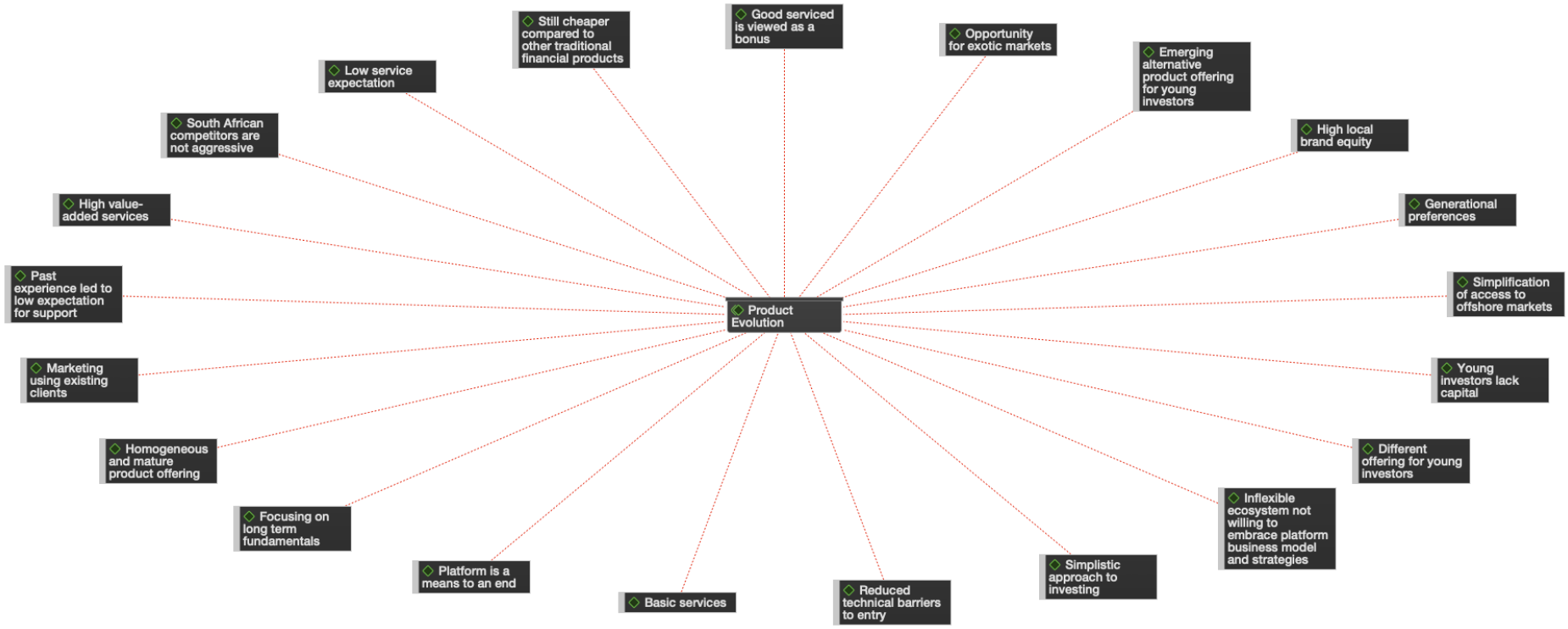

Figure G–9 Product evolution thematic map

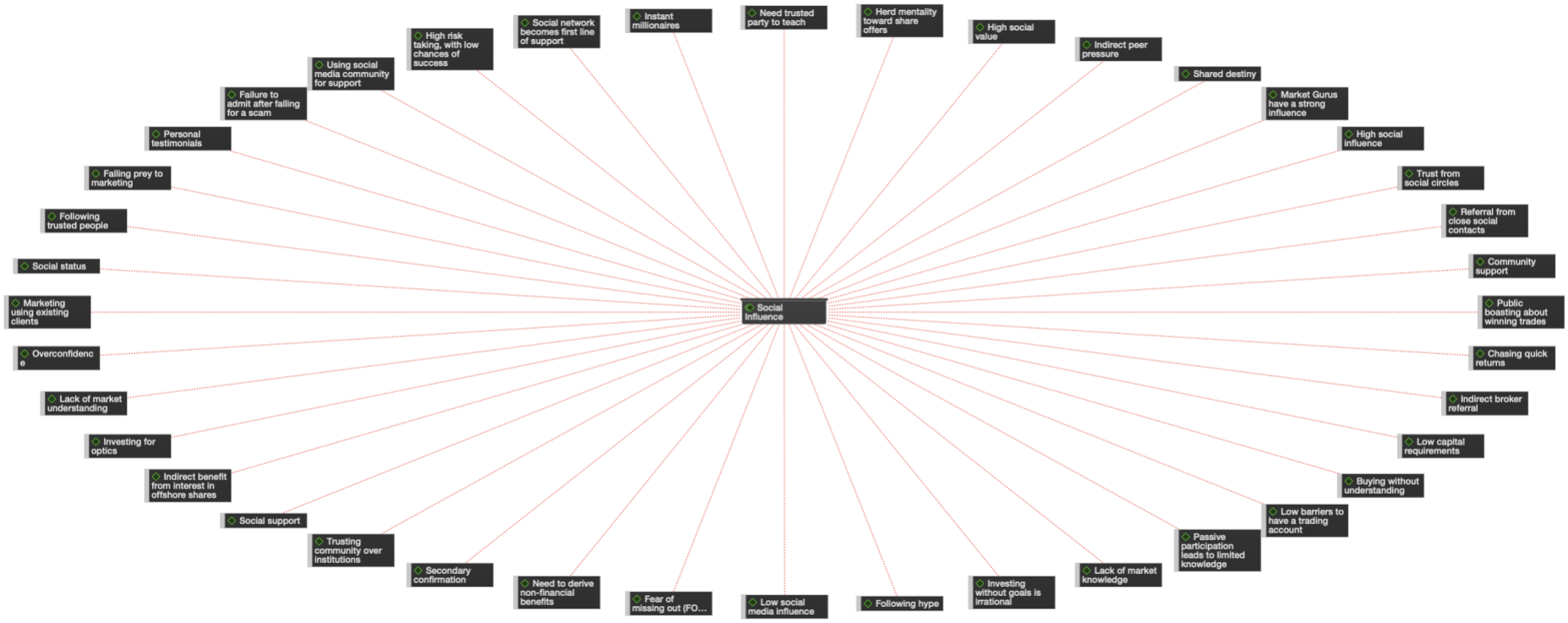

Figure G–10 Social influence thematic map

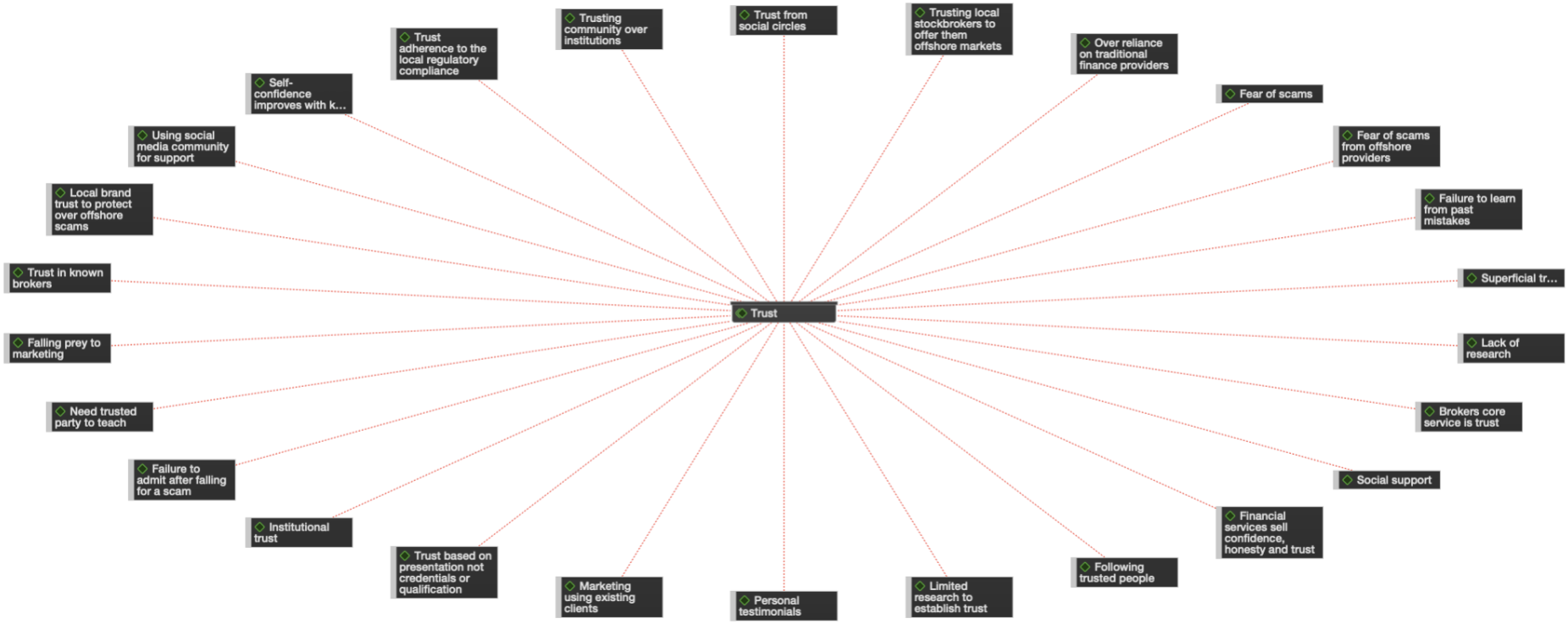

Figure G–11 Trust thematic map